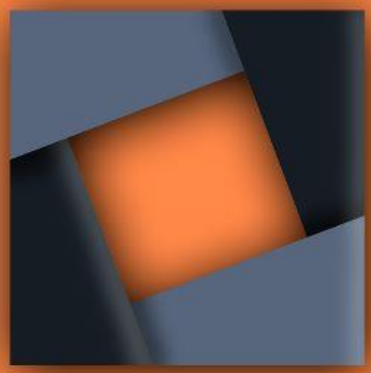
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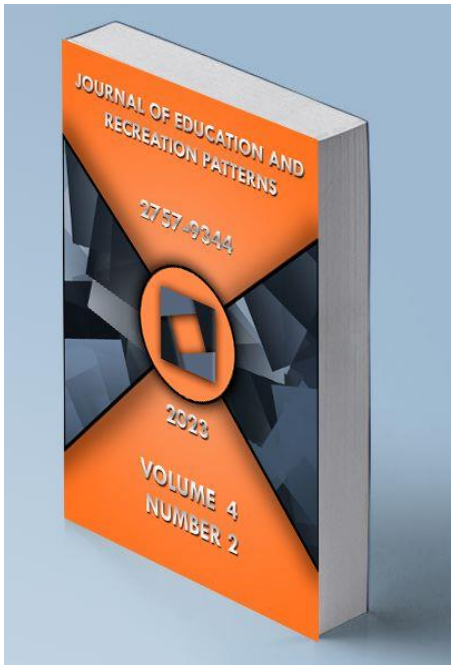
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Effect of Recreational Physical Activity Program on Aberrant Behaviors of Adolescents with Mild Intellectual Disabilities

Gaye ERKMEN HADİ[1], Özlem ZENGİN[2], Ezgi ERTÜZÜN[3],

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[1] Gaye Erkmen Hadi, Selçuk University, Department of Recreation, Konya/Turkey, gerkmen9@gmail.com, https://orcid.org/0000-0003-4129-3236

[2] Özlem Zengin, Department of Training Education, Faculty of Sports Sciences, Selçuk University, Konya, Turkey, ozengin@selcuk.edu.tr, https://orcid.org/0000-0001-5362-3664

[3] Ezgi Ertüzün, Selçuk University, Department of Recreation, Konya/Turkey, ezgiertuzun@gmail.com, https://orcid.org/0000-0002-6986-0143

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Effect of Recreational Physical Activity Program on Aberrant Behaviors of Adolescents with Mild Intellectual Disabilities

Gaye Erkmen Hadi[1], Özlem Zengin[2], Ezgi Ertüzün[3]

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ABSTRACT

This study investigated the effect of the Recreational Physical Activity Program (RPAPP) on problem behaviors of adolescents with mild intellectual disabilities. The experimental group (n=17) involved the parents of adolescents with mild intellectual disabilities who were studying at the School for the Mildly Mentally Handicapped, within the Meram Melike Hatun Special Education Vocational High School affiliated to the Ministry of National Education in Konya. The parents who remained after the exclusion of the lost data constituted the control group (n=17). The Personal Information Form developed by the researchers and the Aberrant Behavior Checklist were used to collect data. The sample of the study consisted of 34 participants. To measure the aberrant behaviors of the adolescents, an evaluation was made through the parents. The study had a pretest-posttest experimental design with a control group. A 16-session RPA was implemented in the experimental group for 8 weeks, two sessions a week and each session lasting for about an hour. The results of the study revealed no statistically significant difference between the Aberrant Behavior Checklist pre-test and post-test total and factor scores of the experimental and control groups ($p>.05$). the application of a recreational physical activity program in 16 sessions is not sufficient to reduce aberrant behaviors; therefore, longer-term programs are necessary for behavior change.

Keywords: Aberrant Behaviors, Adolescent, Intellectual Disability, Therapeutic Recreation Program

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INTRODUCTION

Adolescents with intellectual disabilities may exhibit more problematic behaviors than adolescents without disabilities, and they are also characterized as more disadvantaged than other people in terms of psychological and neuropsychiatric problems (Freund & Reiss, 1991; Russell & Forness, 1985, Semmel & Gao, 1992). Aberrant behaviors can be defined as behaviors that prevent the learning of new skills and cause the individual to stay out of the learning environment, can be harmful to himself or other individuals, and do not comply with the social norms of the society in which the individual lives (Zarkowska & Clements, 1994). Therapeutic recreational activities may have an effect as a healing method on the problem behaviors of adolescents with mild intellectual disabilities (Ertüzün & Daşkıran, 2022; Garcia-Villamisar et al., 2017; Kunzi, 2015). According to the National Council for Therapeutic Recreation Society, therapeutic recreation includes therapy as well as education and entertainment to improve the health status of disadvantaged groups, increase their quality of life, enable them to have fun, and ensure independence in their lives (NCTRC, 2022). The American Therapeutic Recreation Association (ATRA) defines therapeutic recreation activity as the application of therapeutic recreation using a systematic method that uses recreation and other activity-based interventions to meet the psychological health, physical health, and well-being needs of individuals with illnesses and disabilities (ATRA, 2019).

The literature supports the positive effects of therapeutic recreation practices on individuals with intellectual disabilities. Adolescents who passively engage in unstructured activities show higher levels of depressive symptoms and behavioral problems than adolescents who participate in structured recreational activities (Bartko & Eccles, 2003; Mahoney & Stattin, 2000). Therapeutic recreation practices increase the emotional adaptation behaviors of intellectually disabled individuals (Ertüzün & Daşkıran 2022) and contribute to their self-confidence and socialization (Guidetti et al., 2009). Moreover, these practices reduce symptoms such as restlessness (Hinckson & Curtis 2013), promote independence, coping skills, competitiveness, and teamwork among disabled adolescents (Patel & Greydanus, 2002), and provide opportunities to establish friendships, express creativity, and develop a social environment. It has been observed that recreational activities make a significant contribution in situations such as increasing the psychological well-being of disabled adolescents and nurturing the meaning and purpose of adolescents ' lives (Dykens et al., 1998). In other words, recreational activities have a positive effect on individuals with intellectual disabilities, as well as on non-disabled adolescents, in terms of increasing the quality of life of individuals, making friends, feeling independent, enjoying themselves, and acquiring skills (Hanley-Maxwell et al., 1995; Gresham & Reschly, 1986; Ertüzün & Daşkıran, 2022). Such practices are crucial in the process of reintegrating adolescents with mild intellectual disabilities into society.

Adolescence is a critical period in human life. It represents the transition to adulthood and offers a unique opportunity to both prevent psychological disorders and positively affect developmental trajectories. It also affects the future lives of individuals (Patton et al., 2016). In the literature there are studies stating that recreational activities have a positive effect on the transition from childhood to adolescence (Fawcett et al., 2009). It is thought that the practices to be performed in adolescence may support individuals with mild intellectual disabilities who exhibit problem behaviors and help them to have a better life in the future.

At this point, it arouses curiosity to whether RPAP can improve the aberrant behaviors of individuals with mild intellectual disabilities. Our review of the national and international literature showed that studies on the effect of therapeutic recreation activities

on the aberrant behaviors of individuals with intellectual disabilities are limited (Garcia-Villamisar et al., 2017; Gençöz, 1997). According to the results obtained from the studies, the therapeutic recreation program has a positive effect on problematic behaviors and hyperactivity and indirectly has an effect on adaptive behaviors, well-being, and social skills (Gabriels et al., 2015; Garcia-Villamisar et al., 2017; Harris & Williams, 2017). The physical activity practices of therapeutic recreation for adolescents with mild intellectual disabilities are important and need to be studied in depth (Hawkins et al., 2014; Garcia-Villamisar et al., 2017). Depending on the results of the research, plans can be made for the spread of therapeutic recreation practices, and problem behaviors of adolescents with mild intellectual disability can be minimized as much as possible. Individuals with intellectual disabilities who exhibit compulsive behaviors often have limited opportunities to improve their social skills and less access to educational programs and leisure activities, which may lead to an increased risk of being physically restrained and abused (Murphey et al., 2005).

Aberrant behaviors include hyperactivity, lethargy, stereotypic behaviors, harmful behaviors, and inappropriate speech. The Self-determination and Enjoyment Model can be an effective method for use in any RPAP (Gresham & Reschly, 1986; Ertüzün & Daşkıran, 2022). Self-determination is related to reducing social withdrawal as one of the problem behaviors, while entertainment involves controlling hyperactivity and stereotypic and harmful behaviors through entertaining activities (Dattilo et al., 1998). It is thought that this model is the most effective method to guide therapeutic recreational activity in the process of improving problem behaviors. Therapeutic recreation practices may help eliminate the problem behaviors of adolescents with mild intellectual disabilities in the short term, and the widespread use of therapeutic recreation practices may indirectly lead to reaching out and reintegrating more adolescents with mild intellectual disabilities into society in the long term. Therefore, the present study aimed to contribute to the literature by investigating whether the RPAP developed by the researchers has an effect on reducing the aberrant behaviors of adolescents with mild intellectual disabilities.

METHOD

Research Design

This research is quantitative with a pre-test post-test randomized design with a control group. This study was conducted in accordance with the Consolidated Standards of Reporting Trials (CONSORT) reporting guidelines (Schulz et al., 2010).

Research Group

The research population consisted of 86 students with mild intellectual disabilities studying at the School for Intellectual Disability, within Meram Melike Hatun Special Education Vocational High School, affiliated to the Ministry of National Education in Konya, and their parents (mother or father). The sample size was calculated using the G-Power 3.01 program (G*Power 3.1 Manual, 2023). Power analysis was based on a type I error of 0.05, power of 0.95, and effect size of f=0.55. Based on this calculation, the sample size was determined to be at least 10 people. Since the research has a pretest-posttest control group design and any data loss could reduce internal validity, it was decided to have 20 participants in each group (experimental group and control group).

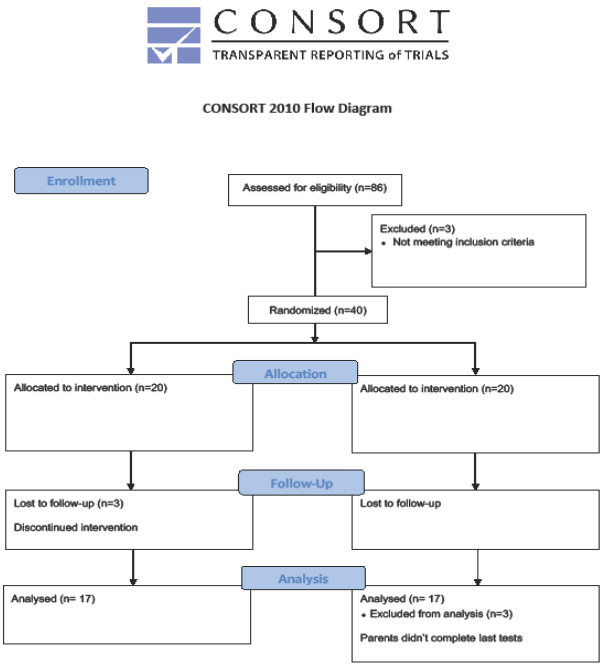
Randomization

A simple random number table created from the school's general student list was used for random sampling. The experimental and control groups created by a statistician who did not know the names and characteristics of the students. A statistician who knew the randomization process and could make an objective assignment assisted in the assignment of

the participants of the experimental and control groups. The list of students was taken, their names were written on papers, and they were assigned to the groups by drawing lots. Then, the parents of 40 randomly selected students from the target population were randomly assigned to the experimental and control groups (20 parents in each group). The parents were informed about the content of the study. The parents of three students with physical disabilities were excluded from the study. The data obtained from the parents of the students in the experimental group who participated in at least 14 sessions of the RPAP were evaluated. Three parents in the control group who did not give consent for data collection during the post-test were excluded from the study because of lack of data. The parents who regularly participated in the study constituted the experimental group (n=17), whereas the parents who remained after the removal of the lost data constituted the control group (n=17). The demographic data of the parents in the study were similar in terms of variables such as income, education, and place of residence.

The flow diagram of the experimental and control groups was prepared based on CONSORT 2010 shown in (Figure 1). The parents of 40 students in the sample were randomly assigned to the experimental and control groups (20 parents in each group). Before the 16-session RPAP was implemented, three parents in the experimental group withdrew from the study because their children could not participate in the program regularly, whereas three parents in the control group withdrew from the study because they did not want to participate in the study. Each participant's inclusion in the analysis without considering reasons such as leaving the assigned group, incompatibility, and treatment/intervention after randomization is defined as intention to treat (ITT) analysis. The method that involves the exclusion of those who left the study before any intervention at the beginning of the study is defined as modified intention to treat (MoITT) (Akın & Koçoğlu, 2017). MoITT was performed in this study, and ITT analysis was performed for control purposes, and no difference was observed between the findings.

Figure 1. The Consort (2010) Flow Diagram of the Study (Source: http://www.consort-statement.org/consort-2010).



Blinding

Blinding was applied to the statistician who determined the experimental and control groups, data collectors, and during the statistical analysis reporting process. Thus, sampling bias, statistical and reporting bias were controlled.

Intervention

Recreational Physical Activity

A 16-session RPA was implemented in the experimental group for 8 weeks, two sessions a week and each session lasting for about an hour. This program implemented by 1 practitioner and 2 assistant practitioners who were experts in dance and educational games and had previously worked with adolescents with mild intellectual disabilities. The RPAP includes rhythm, dance, and educational games. The program was planned on the basis of the Self-Determination and Enjoyment Model (Dattilo et al., 1998), which aims to strengthen personal development and well-being by creating an enjoyable environment with therapeutic recreation. The program aimed to reduce the aberrant behaviors of adolescents with mild intellectual disabilities, such as hyperactivity, lethargy and social introversion, and harming themselves and their friends during games. Games that help develop emotional adaptation skills were selected for the program. It aimed to eliminate behaviors that can be considered problematic and to help adolescents be happy in activities where they can take responsibility.

Before the program was implemented, the experimental group was informed about the purpose of the research and the program by the researchers, and verbal consent was obtained from the participants. The second author of the study conducted the RPAP with the adolescents in the experimental group in the school gymnasium. The second author explained the games to the students, while the other authors modeled how the games were played. A third author with sufficient professional experience acted as the supervisor. During the games, all researchers played guiding and supporting roles in the students. It was observed that the students had visibly fun during the games and were willing to participate.

Control Group

The control group included the parents of the students who did not participate in any of the games in the program. It was stated that the intervention could be offered to the control group at any time after the study. The Aberrant Behavior Checklist was administered to the parents in the control group twice as a pre-test and post-test measurement.

Data Collection Tools

Personal Information Form

The form was developed by the researchers to obtain information about the age and gender of the adolescents, parent's gender, educational status of the parent, number of siblings, family income status, and place of residence.

Aberrant Behavior Checklist

The checklist was developed by Aman, Singh, Stewart, and Field (1985) to evaluate the problem behaviors observed in individuals with intellectual disabilities and the changes in these behaviors. The checklist can complete by teachers, specialists, or parents working with people with intellectual disabilities. The original form of the scale consists of 58 items under 5 factors. The factors were irritability (factor 1), lethargy, social withdrawal (factor 2), stereotypic behavior (factor 3), hyperactivity, noncompliance (factor 4), and inappropriate speech (factor 5). The scale items are rated on a four-point scale from 0 (no problem) to 3 (extremely problematic) according to the severity of the symptoms. The total score that can be obtained from the scale varies between 0 and 124. The Turkish validity and reliability

study of the scale was carried out by Sucuoğlu (2003), and 12 items were removed from the checklist because they were under more than one factor. Thus, the Turkish version of the scale included 46 items under the factors of hyperactivity (e.g. impulsive, act without thinking), lethargy (e. g. withdrawn; prefers solitary activities), stereotypic behaviors (e.g., meaningless, recurring body movements), harmful behaviors (e.g., deliberately hurting herself/himself), and other behaviors (e.g., mood changes quickly). However, the factor of other behaviors that emerged in the Turkish version of the scale, but which does not exist in the original scale, includes 4 items under three different factors, and thus, it was not used in this study.

Data Collection Process

Ethics committee approval was obtained from Selçuk University, Faculty of Sport Sciences Non-Interventional Clinical Research Ethics Committee (no: 40990478-050.99/39612). Data collected by the researchers. The study was registered on ClinicalTrials.gov on October 23, 2019 under the title "The Effects of Therapeutic Recreation Activities on Aberrant Behaviors of Individuals with Intellectual Disabilities" and with the record number NCT 04546464. A meeting was held with the parents of the students in the experimental group to inform them about the program and the measurement tool. After the meeting and before the randomization process, the researchers administered the Personal Information Form and the Aberrant Behavior Checklist to the parents who volunteered to participate in the study as pre-tests. After the 16-session-RPAP, the Aberrant Behavior Checklist was applied again to the parents in both groups as the post-test measurement. It took approximately 10 min to complete the form and the checklist.

Data Analysis

Frequency distributions (number, percentage) were calculated for categorical variables, and descriptive statistics (mean, standard deviation, median, minimum, maximum) was calculated for continuous variables. The normality of the intergroup numerical variables was analyzed using the Shapiro-Wilk test of normality, and it was observed that they did not show a normal distribution. For this reason, non-parametric statistical analyzes (Mann Whitney U and Wilcoxon tests) were conducted because the assumption of normal distribution was not met and the number of participants in the groups was 17. The level of statistical significance was set at $p<.05$, and the data were analyzed using the IBM SPSS Statistics 22 program.

FINDINGS

In this section, the frequency and percentage values of the students participating in the study and their parents' gender, education and income status of the parents are shown in (Table 1).

Table 1. The Distribution of Characteristics of Adolescents and Parents in Experimental and Control Groups

	Control (n=17)		**Experimental (n=17)**			
	n	**%**	**n**	**%**	**X^2**	**p**
Gender of the Adolescent						
Female	7	41.2	6	35.3		
Male	10	58.8	11	64.7	.125	.724
Gender of the parent						
Mother	8	47.1	6	35.3		
Father	9	52.9	11	64.7	.486	.486

Mother's level of education						
Illiterate	2	11.8	2	11.8		
Primary school	13	76.5	11	64.7		
Secondary school	2	11.8	4	23.5	.833	.659
Father's level of education						
Primary school	13	76.5	14	82.4		
Secondary school	2	11.8	1	5.9		
High school	1	5.9	1	5.9		
University	1	5.9	1	5.9	.370	.946
Level of income						
Below the minimum wage	6	35.3	8	47.1		
Minimum wage	7	41.2	6	35.3		
Twice the minimum wage	3	17.6	3	17.6		
3 times or more of the minimum wage	1	5.9	0	0	1.363	.714

The descriptive statistics for the participants are shown in (Table 1). The majority of the control group (58.8%) and the experimental group (64.7%) consisted of male adolescents, and their mean age was similar (Experimental group$_{age}$: 17.94±1.30; Control group$_{age}$: 17.47±1.51). Both the experimental and control groups mainly included fathers (64.7% and 52.9%, respectively). The mean age of the mothers (45.35±7.02) and fathers (48.82±7.27) in the experimental group was found to be higher than that of the mothers (42.94±5.70) and fathers (46.88±5.27) in the control group. In addition, the parents in the experimental and control groups were found to have similar education and income levels. The majority of the participants had an income below the minimum wage or earned the minimum wage. Chi-square analysis revealed no statistically significant difference between the groups in terms of demographic characteristics (p>.05).

Table 2. Intra-Group and Inter-Group Comparison of Aberrant Behaviour Checklist Pre-Test and Post-Test Scores

	Control		**Experimental**		**Inter-group**	
	X	**SD**	**X**	**SD**	**Z[a]**	**p**
Hyperactivity Pre-Test	22.24	6.66	22.06	6.39	-1.959	.050
Hyperactivity Post Test	26.41	7.48	22.65	8.06	-.284	.776
Intra-group	Z[b]=-.121	p=.904	Z[b]=-1.674	p=.094		
Lethargy Pre-Test	28.65	10.58	26.59	8.76	-.189	.850
Lethargy Post-Test	28.76	10.24	25.29	7.69	.751	.452
Intra-group	Z[b]=-.450	p=.653	Z[b]=-.899	p=.369		
Stereotypic Behaviors Pre-Test	8.29	3.27	8.35	3.55	.000	1.00
Stereotypic Behaviors Post-Test	8.65	3.77	7.24	3.40	-1.691	.091
Intra-group	Z[b]=-.398	p=.691	Z[b]=-1.431	p=.153		
Harmful Behaviors Pre-Test	3.47	1.07	4.35	2.78	-.378	.705
Harmful Behaviors Post-Test	3.41	0.94	3.12	0.33	-1.892	.058
Intra-group	Z[b]=-.904	p=.366	Z[b]=-.643	p=.520		
Total Aberrant Behavior Pre-Test	58.93	12.80	61.35	17.50	-1.191	.234
Total Aberrant Behavior Post-Test	67.29	18.45	57.63	14.80	-.796	.426
Intra-group	Z[b]=-.786	p=.432	Z[b]=-1.482	p=.138		

[a] *Mann–Whitney U* [b] *Wilcoxon analysis*

The results of the analysis conducted to investigate whether RPAP reduced problem behaviors in adolescents with mild intellectual disability are shown in (Table 2). The pretest

scores of the experimental and control groups were compared, and no significant differences were found between the Aberrant Behavior Checklist total and factor scores of the groups ($p>.05$).

The analyzes revealed no significant difference between the pre-test and post-test Aberrant Behavior Checklist total and factor scores in the experimental group ($p>.05$). In addition, no statistically significant difference was found between the pre-test and post-test Aberrant Behavior Checklist total and factor scores of the control group ($p>.05$).

DISCUSSION & CONCLUSION

The present study, which aimed to investigate the effect of RPAP on the aberrant behaviors of adolescents with mild intellectual disabilities, revealed no statistically significant difference between the experimental group's pre-test and post-test total and factor scores. Although not significant, it can be said that the RPAP had positive effects on the experimental group, i.e., it reduced the problem behaviors of the adolescents. The reason for this insignificant result may be related to the duration of RPAP. There are no studies in the literature with very similar sample characteristics. However, long-term intervention studies conducted with different age groups and methods support this interpretation. For example, Bala et al. (2011) investigated the effect of motor exercises and kinesiological activities for 9 months with preschool children on reducing problem behaviors and found that aggression, anger, and destructiveness decreased in children with increased externalizing behavior and anxiety, phobia, and shyness decreased in children with distinctive internalizing behavior. A 12-week study was conducted to explore the effect of a peer-mediated adaptive physical activity program on the problem behaviors of students with intellectual disabilities (Esentürk & Güngör, 2020). The findings revealed a statistically significant difference between the pre-test, post-test, and follow-up tests regarding the problem behaviors of students with intellectual disabilities. A 40-week intervention study (Garcia-Villamisar et al., 2017) conducted with individuals with autism spectrum disorder and intellectual disability showed that the therapeutic recreation program had a positive effect on social skills, adaptation behavior, and well-being, and it can be an effective intervention method for individuals with autism spectrum disorder and intellectual disabilities.

On the basis of these findings, it can be stated that long-term therapeutic practices can be an effective method in reducing aberrant behaviors. This study aimed to reduce the problem behaviors of adolescents with mild intellectual disabilities using RPAP. The absence of a significant decrease may be related to short-term mood changes caused by the environment during the activities and to psychosocial processes. Previous studies have also indicated that it is not possible to create a permanent change in human behavior in a short time (Kırımoğlu et al., 2016).

The findings revealed that although there were no statistically significant differences between the pre-test and post-test scores of the experimental and control groups, RPAP reduced hyperactivity, lethargy, and stereotypic and harmful behaviors through rhythm, dance, and educational games. Thus, the study indicated that RPAP can be a valid program eventually for reducing hyperactivity, lethargy, and stereotypic and harmful behaviors. It is thought that RPAP may allow adolescents and their families to experience positive emotional states and indirectly increase their quality of life. Future studies may investigate the relationship between therapeutic recreation programs that include rhythm, dance,, educational games, and different skills. The quality of life of individuals with mild intellectual disabilities who participate in recreational physical activities and that of those who do not can be compared.

Limitations and Recommendation

It should be noted that this study has some limitations. The Aberrant Behaviors Checklist, which is a behavioral rating list, was used as the only measurement tool in this study. It would have been possible to obtain more concrete results by including more than one measurement tool in the study. In addition analyzes were performed only on the basis of the evaluations of the parents. Obtaining information from teachers about changes in behaviors may provide supportive data for evaluating problem behaviors. The adolescents with mild intellectual disabilities in the control and experimental groups did not exhibit severe problem behaviors and could accompany group activities. This may be the reason why the intervention did not change the participants' behaviors.

Effective implementation of recreational physical activity programs for adolescents in special education schools by physical education teachers is a necessity to achieve desired results. In addition, it is necessary to design different types of free time activities that adolescents can participate in outside school time, to increase the awareness of parents about free time activities, and to gain the support of local administrations. It is thought that future studies should apply RPAP to individuals with higher levels of aberrant behaviors. In addition, randomized controlled studies with longer-term RPAPs are recommended to observe behavioral changes in people with intellectual disabilities. Conducting qualitative studies in the future will create a different perspective in terms of the functions of recreational activities in reducing aberrant behaviors.

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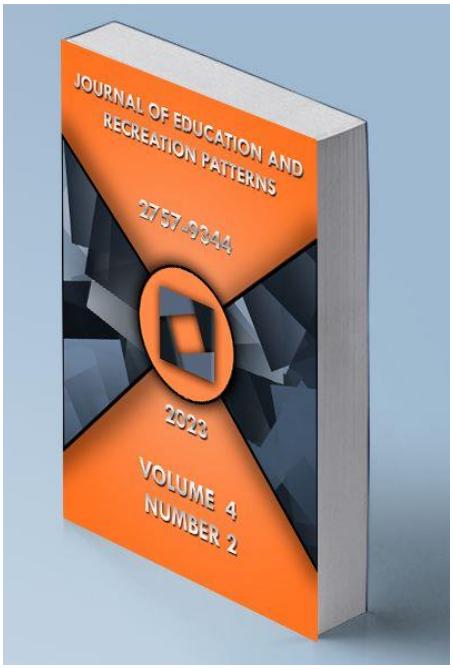
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Investigation of the Effect of High-Intensity Training on Mineral and Thyroid Hormone Metabolism of Athletes

Savaş AYHAN[1], Ercan TİZAR[2] , Ramazan ERDOĞAN[3]

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[1]Savaş Ayhan, Doctor Lecturer, Dicle University School of Physical Education and Sports, savasayhan2011@gmail.com, https://orcid.org/0000-0003-4238-1844

[2]Ercan Tizar, PhD, Dicle University School of Physical Education and Sports, ercantizar@gmail.com, https://orcid.org/0000-0002-3961-7417

[3]Ramazan Erdoğan, Assistant Professor, Bitlis Eren University School of Physical Education and Sports, ramaznerdogan@hotmail.com, https://orcid.org/0000-0001-5337-942X

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Investigation of the Effect of High-Intensity Training on Mineral and Thyroid Hormone Metabolism of Athletes

Savaş Ayhan[1], Ercan Tizar[2], Ramazan Erdoğan[3]

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ABSTRACT
It is observed that there are physiological changes in the organism as a result of long-term training, but the mineral and hormonal effects of regular and submaximal exercises have not been fully revealed. This study was conducted to determine the effect of eight-week high-intensity training on mineral and thyroid hormone metabolism of badminton athletes. The research group consisted of 24 volunteer male athletes licensed in the badminton branch. Considering the badminton competition period, an eight-week, ninety-minute training program was applied to the research group, three days a week. Within the scope of the training, 10-15 minutes of warm-up time, 50-60 minutes of badminton training and studies to improve basic motoric features, and 5-10 minutes of cool-down exercises were made at the end of the training. Blood samples were taken from the athletes in the research group twice, before the start of the training program and at the end of the training. In the blood samples taken as a result of the training, the athletes; thyroid hormones (TSH, T3, T4), sodium, potassium, calcium, magnesium, levels were determined. The obtained data were analyzed using the SPSS 22 package program and the significance was accepted as $p>0.05$. As a result of the research, it was determined that there was a statistically significant difference between the thyroid hormone metabolism, TSH and T3 pre-post test values of the athletes ($p<0.05$), while there was no statistically significant difference between the T4 values and the pre-post test values ($p>0.05$). When the mineral levels of the athletes were evaluated as a result of the training, it was determined that there was a statistically significant difference in the Sodium, Potassium and Magnesium pre-post-test levels ($p<0.05$), while there was no statistically significant difference in the calcium pre-post-test level ($p>0.05$). As a result, it was observed that eight-week high-intensity training caused changes on the mineral and thyroid hormone metabolism of the athletes. In this context if the trainings to be applied are designed considering these physiological changes, it will positively affect the performance of the athlete.

Keywords: Badminton, Mineral Metabolism, Thyroid Hormones, Training

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INTRODUCTION

Experts in the field of sports sciences (researchers, conditioners, trainers) are constantly in search of new training methods in order to increase or improve the performance of athletes. This quest is generally for the athletes to adapt to the training physically, physiologically and psychologically. In line with this information, High-Intensity Interval Training (HIIT) comes to the fore in bringing the performance indicators of the athletes to the next level (Akgül et al., 2017).

High-intensity interval training is the repetition of exercises with specified methods at regular intervals. One of the most important features of this training method is that the parameters of loading and resting or high and low intensity loading change systematically. Thanks to this training method, it not only meets the need for fast and effective adaptation, but also shortens the time spent on training (Karayigit et al., 2020; Revan et al., 2008). Modern fitness programming has adopted the term "high-intensity interval training" or HIIT as a way to describe this approach to fitness and performance, and two general classifications have emerged. One classification is called "aerobic HIIT" and the other is called "bodyweight HIIT" or "resistance HIIT". Both involve periods of intense exertion followed by rest periods, the primary difference being the method of exercise. Aerobic HIIT training mostly uses running and cycling to provide desired intensities through activities such as spin classes and track-based running workouts. In contrast, resistance/body weight training programs such as HIIT, Tabata, CrossFit, basic boot camp training, or other similar classes benefit from gymnastics, plyometrics, and/or weightlifting (Bartlett et al., 2011). The reason why the high-intensity interval training method is preferred especially in recent times is that it is effective on body composition, energy mechanism, skeletal-muscular system and hormone metabolism in a short time.

Hormones are a vital indicator for tracking the changes in the body generated by exercise. Thyroid hormones (TH) regulate basal metabolism and hemostasis, as well as metabolic activities required for growth and development via thyroid hormone receptors (TRs) via influencing the expression of TR target genes (Mullur et al., 2014). Thyroid hormones are recognized to have an active part in numerous metabolic activities, including lipid and glucose metabolism (Erdogan, 2020). Thyroid hormone metabolism affects various systems that can alter its function, physical activity, and physical capacity (Hall and Guyton, 2015). Thyroid hormone Na/K-ATPase in skeletal muscle promotes transmembrane resting potentials and contraction and reduction in the number and load of mitochondria of myosin heavy chain, a protein feature of fast-twitch fibers (Flavia et al., 2018). It affects the physical capacity very well through the body muscles. Physical movement activity is associated with skeletal muscle and the resulting energy expenditure. Thyroid hormones have a well-known effect on energy production. This may explain a possible nest between thyroid function and physical activity. On the other hand, thyroid function can also negatively affect physical activity through diseases that can hinder a person's overall physical performance. For example, thyroid function variations, even within the reference range, have been associated with cardiovascular disease (CVD), stroke, and frailty in middle-aged and elderly populations (Chaker et al., 2016). Conversely, physical activity can also affect thyroid function. For example, physically active individuals often have a beneficial cardiometabolic profile, including an appropriate fat distribution. Higher body mass index (BMI) and obesity are known factors that affect thyroid function through leptin production, which affects the hypothalamic-pituitary-thyroid axis (Zimmermann et al., 2003). In line with this information, it is important to what extent high-intensity training affects homonym and mineral metabolism. This study was conducted to determine the effect of eight-week high-intensity training on mineral and thyroid hormone metabolism of badminton athletes.

METHOD

Research Design

The investigation presented in this article utilized a pretest-posttest strategy, which is one of the quantitative research techniques, to investigate whether eight weeks of high-intensity training is helpful on mineral and thyroid hormone metabolism in badminton athletes.

Research Group

24 male athletes who are licensed in the badminton branch and regularly participate in badminton training participated in the research group voluntarily.

Training Program

Considering the badminton competition period, an eight-week, ninety-minute training program was applied to the research group, three days a week. Within the scope of the training, 10-15 minutes of warm-up time, 50-60 minutes of badminton training and studies to develop basic motoric features, and 5-10 minutes of cool-down exercises were made at the end of the training. The trainings were adjusted to the Max 70-80% intensity according to the condition level of the research group and were applied during the training program.

Training Sections/ Days	**Monday**	**Wednesday**	**Saturday**
Warm up	30-40% jog at the pace running stretching	30-40% jog at the pace running stretching	30-40% jog at the pace running stretching
Main Section	Basic technical studies/tactical exercises for the competition	Basic technical studies/tactical exercises for the competition	Competition
Cooling Down	15-20 minutes of cooling exercises	15-20 minutes of cooling exercises	15-20 minutes of cooling exercises

Collection and Analysis of Samples

Blood samples were taken from the athletes in the research group twice, before the start of the training program and at the end of the training. The athletes participating in the study were observed during the training, and the athletes who had metabolic disorders or were taking drugs were excluded from the study. In the blood samples taken as a result of the training, the athletes; thyroid hormones (TSH, T3, T4), sodium, potassium, calcium, magnesium levels were determined. The blood samples taken from the athletes were taken by experts in the private hospital laboratory by means of a fully automatic hemogram named “Coulter Stks”, while the athletes were sitting and resting, and analyzed.

Statistical Analysis

The data were analyzed using the SPSS 22.0 package program. To determine if the data conformed to the normal distribution assumption, the Kolmogorov-Smirnov and Shapiro Wilk normality tests were performed. Parametric tests were used for the data determined to be normally distributed. Paired Samples t-test was used to compare the pre-post test data of the research group. Significance level was taken as $p<0.05$.

FINDINGS

The data collected on the questions to be addressed in accordance with the overall goal of the research, the findings gained, and the conclusions drawn based on these findings are reported in this section.

Table 1. Thyroid Hormone Changes of Athletes Before and After Training

Parameters	Pre-test	Post-test	t	p
TSH	1,88±0,14	1,91±0,08	-7,112	0,00*
T3	3,50±0,13	3,52±0,16	-6,970	0,00*
T4	1,23±0,09	1,23±0,16	-,517	0,61

*p <0.05

When Table 1 was examined, it was observed that there was a statistically significant difference between the thyroid hormone metabolism of the research group, TSH and T3 pretest-posttest values ($p<0.05$), while there was no statistically significant difference between T4 values pretest-posttest values ($p> 0.05$).

Table 2. Mineral Changes of Athletes Before and After Training

Parameters	Pre-test	Post-test	t	p
Sodium	143,17±2,98	145,29±2,91	-3,989	0,00*
Potassium	4,70±0,34	4,82±0,35	-3,457	0,00*
Calcium	9,57±0,34	9,68±0,29	-1,661	0,11
Magnesium	2,05±0,18	2,23±0,24	-3,578	0,00*

*p < 0.05

In Table 2, when the mineral levels of the athletes as a result of the training were evaluated, it was determined that there was a statistically significant difference in the Sodium, Potassium and Magnesium pretest-posttest levels ($p<0.05$), there was no statistically significant difference in the calcium pretest-posttest level.

DISCUSSION & CONCLUSION

In this study, pre- and post-training thyroid hormone changes and pre- and post-training mineral changes of the athletes were evaluated in the light of scientific data. Accordingly, when Table 1 was examined in our study, it was determined that there was a statistically significant difference between the thyroid hormone metabolism of the research group, TSH and T3 pretest-posttest values ($p<0.05$). There was no statistically significant difference between T4 values and pretest-posttest values ($p>0.05$). In Table 2, when the mineral levels of the athletes as a result of the training were evaluated, it was determined that the sodium, potassium and magnesium pretest-posttest levels were statistically significant ($p<0.05$). There was no statistically significant difference in the calcium pretest-posttest level ($p>0.05$).

Hormones are molecules produced by endocrine glands, including the hypothalamus, pituitary gland, adrenal glands, gonads (i.e. testes and ovaries), thyroid gland, parathyroid glands, and pancreas. The term endocrine means the release of the products of these glands into the bloodstream in response to certain stimuli. The hormones are then transported through the

blood to target cells. Some hormones have only a few specific target cells, whereas other hormones affect a large number of cell types in the body. It is known that target cells for each hormone have specific binding molecules (ie receptors) located on the cell surface or inside the cell. The interaction between the hormone and its receptor triggers a series of biochemical reactions in the target cell that eventually change the function or activity of the cell (Susanne et al., 2022). Thyroid hormones are responsible for metabolic processes in all cells. TSH is a hormone in glycoprotein structure and ensures the metabolism and development of the thyroid gland. TSH hormone secreted by the pituitary also has a stimulating effect on the thyroid hormone. In addition, thyroid hormone stimulates the structure of many genes (Berne et al., 2008). There is a study by Hess (2010) that providing athletes with iodine, iron and selenium along with exercise provides more improvement in athletes' thyroid function. Athletes with low energy intake or iron deficiency are reported to benefit from medical nutrition therapy by a board-certified expert in sports dietetics. Çelikel (2023), in his study, determined that the training program he applied affects some physiological and physical parameters of the athletes. Çelenk (2011) states that the duration, intensity and frequency of exercise affect the plasma hormone level, and that androgen secretion begins with exercise, and thus estrogen from ovarian hormones responds to exercise as in testosterone. Therefore, it can be mentioned that exercise has an effect on thyroid hormones, so it also has an effect on TSH. Atabaş and Yapıcı (2022) determined in their study that high-intensity interval training, both with and without a mask, positively affects the physiological and respiratory parameters of football players. In the study conducted by Akbulut et al., (2019), it was determined that vitamin E supplementation applied in addition to eight-week high-intensity interval training caused changes in the thyroid hormone metabolism of athletes. Considering the studies on male athletes, it has been reported that there is an increase in TSH levels predominantly (Büyükipekçi et al., 2018; Erdoğan, 2020; Pala et al., 2020), while Limanova et al.'s studies on young athletes and Fortunato et al. It is reported that they did not find any significant difference in TSH levels immediately after. Erdoğan and Sarikaya (2020) stated in their study that regular and long-term training affects the mineral metabolism and muscle damage markers of athletes. Maynar et al., (2018) determined that regular and long-term exercises cause changes in the mineral levels of athletes.

As a result, it was observed that eight-week high-intensity training caused changes on the mineral and thyroid hormone metabolism of the athletes.

Suggestions

Sports medicine professionals, coaches and athletes must be aware of the signs and symptoms and potential causes of thyroid-related disorders in order to achieve peak performance and to be successful against potential unwanted ailments.

Since thyroid disease is relatively common in the general population, especially in women, it may also be common among athletes, and this prevalence may be due to the nutritional factors of athletes.

While excessive exercise does not necessarily cause thyroid problems, strenuous exercise can be associated with temporary changes in thyroid hormones that can be important in monitoring the health of the athlete, training status and nutritional intake.

An overall assessment is important to help identify the cause and treat thyroid disorders. Future studies are needed to assess the prevalence of nutritional and non-nutritional thyroid disorders in athletes and their potential impact on athletic training, competition and recovery.

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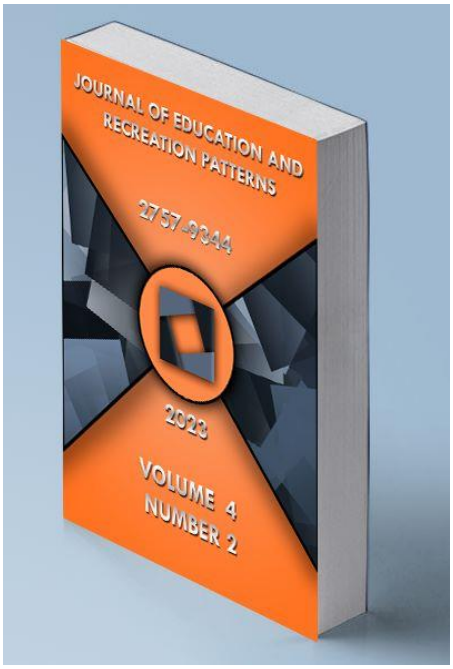
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The Relationship between Leisure Time Participation, Automatic Thought and Life Satisfaction in Pre-Service Teachers

Mergül ÇOLAK[1], Ulviye BİLGİN[2], Sonnur KÜÇÜK KILIÇ[3]

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[1] Mergül ÇOLAK, Associate Professor, Erzincan Binali Yıldırım University, Faculty of Sport Sciences, mcolak@erzincan.edu.tr, https://orcid.org/0000-0002-4762-8298

[2] Ulviye BİLGİN, Associate Professor, Gazi University, Faculty of Sports Sciences, ulviye@gazi.edu.tr, https://orcid.org/0000-0001-5871-0089

[3] Sonnur KÜÇÜK KILIÇ, Associate Professor, Erzincan Binali Yıldırım University, Faculty of Education, sonnur.kucukkilic@erzincan.edu.tr, https://orcid.org/0000-0002-0355-0492

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The Relationship between Leisure Time Participation, Automatic Thought and Life Satisfaction in Pre-Service Teachers

Mergül Çolak[1], Ulviye Bilgin[2], Sonnur Küçük Kılıç[3]

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ABSTRACT

The aim of this study is to examine pre-service teachers' leisure time participation, automatic thought and life satisfaction levels according to some variables and to determine the relationship between them. A sample of 862 (468 female, 394 male) pre-service teachers studying a state university provided responses. In the study, 'Life Satisfaction Scale' (LSS) and 'Revised Automatic Thought Questionnaire (ATQ-R)' were administered on the participants. Descriptive statistical methods, t-test, ANOVA and correlation analyses were used in the data analysis. Pre-service teachers' automatic thought perceptions were at low level, while life satisfaction perceptions were at middle level. The scores of the LSS and ATQ-R did not differ significantly according to gender, department and grade level. While the scores of ATQ-R did not differ significantly according to income and leisure time evaluation, the scores of LSS differed significantly. On the other hand, the scores of both LSS and the ATQ-R differed significantly according to the frequency of participation in recreational activities. And also, there was a negative and moderate correlation between pre-service teachers' life satisfaction and automatic thought perceptions. Results showed that the life satisfaction and automatic thought perceptions of male and female students did not change. It was determined that the participants' life satisfaction and automatic thought perceptions did not differ according to department and grade level. In addition, participants with high income and pre-service teachers who stated that they participate in social, cultural and artistic activities in leisure time had higher life satisfaction. As participation recreational activities in leisure time increased, the life satisfaction perception increased, and the perception of automatic thought decreased. In addition, as the participants' life satisfaction perceptions increased, their automatic thought perceptions also decreased.

Keywords: Automatic Thought Perception, Leisure Time, Life Satisfaction, Pre-Service Teacher

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INTRODUCTION

The university period is an important step and a critical turning point in the journey of young people to the adult business world, where radical changes occur in human life (Galaway & Hudson, 1996). In this period, young pre-service teachers gain important experiences in forming a stable identity by experiencing various roles, values and identity images in a new environment. In particular, the first year is the most critical year in terms of adaptation to university because of the many possible adaptation difficulties that may arise due to responsibilities such as negotiating with a new and complex world, developing intrinsic motivation for learning, managing time and money well, attending classes and fulfilling academic studies. When the relevant literature is reviewed, it is seen that negative structures and negative thoughts such as anxiety, depression, vulnerability to stress, anger, mood, and mental illness, which are indicators of negative adjustment related to adaptation to university life, emerge (Mattanah et al., 2004). In addition, the findings also show that there is a significant relationship between negative structures such as depression and anxiety and negative automatic thoughts (Buschmann et al., 2018; Tang et al., 2018).

Automatic negative thoughts are thoughts that come to mind unconsciously and are accepted as true by individuals who encounter disturbing stressful life events (Beck & Newman, 2005; Fenn & Byrne, 2013). Automatic negative thinking, which causes a person to have irrational beliefs and is called cognitive distortion, is basically based on Cognitive Behavioral Theory. According to this theory, an individual's behavior and emotions are affected by his/her thoughts or perceptions. It is stated that cognition is responsible for what one feels, rather than the situation and conditions one is in, and at the same time, the way a person interprets situations determines his or her emotions (Beck, 1964). In other words, automatic negative thoughts can also be defined as the individual's statements about him/herself and internal conversations with him/herself (Yavuzer & Karataş, 2017). Automatic thoughts that lead to negative evaluations about one's self, external world and future (Beck, 1964) can affect the individual's emotions, behaviors, and life satisfaction (Tümkaya et al., 2011). Studies conducted in this context show that automatic negative thoughts are an important predictor of life satisfaction in young adults (Mahmoud et al., 2015; Yavuzer & Karataş, 2017).

Life satisfaction includes cognitive evaluations and judgments about life in general, which are revealed by the comparison of the individual's real situation and expectations from life (Suldo & Huebner, 2006). In other words, the difference between "having" and "desires" determines the level of life satisfaction of the individual (Frisch, 1998). The basis of life satisfaction is based on the Quality of Life Theory proposed by Frisch (1994). According to Frisch (1998), quality of life is equal to life satisfaction. In addition, it is stated that life satisfaction can be better understood by the subjective evaluation of the individual's goals, needs and desire levels. However, the Quality of Life Theory emphasizes the quality of positive inner experience (thoughts and emotions). An individual's thoughts are very important determinants of life satisfaction because automatic thoughts affect the quality of an individual's inner experience. According to the Quality of Life Theory, emotions can reflect an individual's progress towards personal achievements, needs, and desires. Thus, life satisfaction is achieved as a result of the combination of the individual's beliefs and desires about life (Rice et al., 1992).

Individuals use leisure time activities as an important tool to increase life satisfaction (Soyer et al., 2017). Leisure time can be defined as an activity that individuals want to do, that they manage to do at a personally satisfactory level by using their talents and resources, that are carried out in their leisure time and that are done without difficulty (Stebbins, 2005). It is stated that leisure time activities, which have an important role in modern life, are equivalent to self-actualization according to Maslow's hierarchy of needs theory (Csikszentmihalyi & Kleiber, 1991). When an individual satisfies his/her need for autonomy as a result of choosing

a leisure time activity that s/he wants to participate in, this individual's life satisfaction is also positively affected (Deci & Ryan, 2000; Ryan & Deci, 2000). Thus, leisure activities, which have an important role in the development of satisfying emotions, affect not only life satisfaction but also the quality of life positively (Siegenthaler & O'Dell, 2000).

When evaluated in general, participation in leisure time activities is a dynamic that affects life satisfaction and quality, as well as automatic thought perception (Deci & Ryan, 2000; Kleiber et al., 2002; Ryan & Deci, 2000; Siegenthaler & O'Dell, 2000). In other words, there is a correlation between life satisfaction, automatic thought and leisure activities. The hot-cross bun model proposed by Greenberger and Padesky (1995) based on Cognitive Behavior Theory helps to explain the relationship between thoughts, feelings and behaviors. According to this model, just as thoughts affect emotions, emotions affect behavior and behavior affects physical symptoms. However, all variables (thoughts, emotions and behaviors) can directly affect each other. In the current study, automatic thoughts constitute the cognitive component of the hot-cross bun model, life satisfaction constitutes the emotion component, and leisure time activities constitute the behavioral component.

In line with the information given about life satisfaction, automatic negative thoughts and participation in leisure time activities, it can be said that leisure activities are an important tool in increasing individuals' life satisfaction and quality of life and developing positive automatic thoughts. When the literature on the subject is examined, it is seen that there are many studies that deal with participation in leisure activities and life satisfaction together (Ayhan & Bilge, 2020; Küçük Kılıç et al., 2016; Mutz et al., 2021; Özmaden, 2019; Rodríguez et al., 2008; Schmiedeberg & Schroder, 2017; Tercan, 2015). When the results of these studies are examined, it is seen that participation in leisure time activities increases life satisfaction and that life satisfaction and leisure satisfaction are positively related. It has been determined that there are limited studies that deal with life satisfaction and automatic negative thought perception together and examine the relationship between them (Aysan & Bozkurt, 2004; Çolak & Bilgin, 2021; Serin & Aydınoğlu, 2011; Tümkaya et al., 2011). When the studies were examined, no studies were found on the relationship between leisure time participation, automatic thought and life satisfaction in pre-service teacher. In this context, it is thought that the results to be obtained from this research are especially important in terms of revealing how participation in leisure activities has an importance in increasing life satisfaction by moving away from negative automatic thoughts. Especially when it is considered in terms of university youth, it is thought that academic pressure as well as worsening living conditions will push teacher candidates into negative thoughts. In this context, it is important to determine the negative automatic thoughts and life satisfaction levels of teacher candidates who will raise the building blocks of the future, and to reveal the relationship between these concepts and leisure time activities in order to detect potential problems early. As a matter of fact, the fact that the participants are still at the candidate teacher stage creates the idea that these problems can be solved within the education triangle. On the other hand, it is important for institutions such as universities to understand the importance of leisure activities and to bring recreational areas to a sufficient and effective position. For this reason, it is thought that the results obtained from the research will contribute to the field in this regard. From this point of view, the aim of this study is to examine the levels of leisure time participation, automatic thought and life satisfaction of pre-service teacher according to some variables and to determine the relationship between them. Within the scope of this purpose, answers to the following questions were sought:

1. What is the level of automatic thought and life satisfaction perceptions of pre-service teachers?

2. Do pre-service teachers' perceptions of automatic thoughts and life satisfaction differ significantly according to variables such as gender, department, grade level, income, leisure evaluation style, and frequency of participation in recreational activities?
3. Is there a significant relationship between pre-service teachers' perceptions of automatic thought and life satisfaction?

METHOD

Research Model

This research was designed in relational survey model within the framework of quantitative research approach. The aim of these studies is to determine whether there is a co-change between two or more variables (Karasar, 2012). Questionnaire technique was used as data collection technique in the research (Nachmias & Nachmias, 1996).

Research Group

The sample of the study consisted of 862 (468 female, 394 male) pre-service teachers studying at Erzincan Binali Yıldırım University Faculty of Education in the spring semester of the 2022-2023 academic year and selected by convenience sampling method. The mean age of female participants was 21.26±2.33; male participants 22.11±2.64 and the total participants was 21.65±2.51. Demographic information of the participants is included in Table 1.

Table 1. Demographic information of participants

Variable		Group	n	%
Gender		Female	468	54.3
		Male	394	45.7
Department		Departments admitting students with special talent exam	528	61.3
		Other departments	334	38.7
Grade Level		1st class	207	24.0
		2nd class	204	23.7
		3rd class	267	31.0
		4th class	184	21.3
Income Status		1500 TL and below	701	81.3
		1501 TL and above	161	18.7
Status of Evaluating the Leisure Time	Chores at Home	Yes	698	81.0
		No	164	19.0
	Sportive Activities	Yes	361	41.9
		No	501	58.1
	Social Activities	Yes	431	50.0
		No	431	50.0
	Cultural/Artistic Activities	Yes	243	28.2
		No	619	71.8
	Outdoor activities	Yes	295	34.2
		No	567	65.8
	Touristic activities	Yes	162	18.8
		No	700	81.2
Frequency of Participation in Recreational Activities		Never/Very Rare	98	11.4
		Sometimes	362	42.0
		Frequently	402	46.6

468 female (54.3%) and 394 male (45.7%) pre-service teachers participated in the study. 528 of the pre-service teachers were studying in departments that accept students through special talent exams, and 334 of them were studying in other departments. 207 of the participants were in the first grade, 204 in the second grade, 267 in the third grade and 184 in the fourth grade. While the number of participants included in the study with an income of 1500 TL and below was 701, the number of participants with an income of 1501 TL and above was 161. 698 of the participants stated that they spent their free time with chores at home (reading book, listening music, etc.), 361 with sports activities, 431 with social activities, 243 with cultural/artistic activities, 295 with outdoor activities and 162 with touristic activities. 98 of the teacher candidates stated that they never or rarely participated in free time activities, 362 stated that they sometimes participated, and 402 stated that they frequently participated.

Data Collection Tools & Process

Personal Information Form

The personal information form developed by the researchers consisted of variables related to gender, age, department, class, income, leisure time evaluation style and leisure time evaluation frequency in order to collect information about the pre-service teachers who are the subject of the research.

Revised Automatic Thought Questionnaire (ATQ-R)

Individuals' negative automatic thoughts were determined by the Automatic Thoughts Questionnaire- Revised ATQ-R developed by Kendall et al. (1989). The Turkish validity and reliability study of the questionnaire was carried out by Bozkurt (1998). The scale consists of 40 items and 10 items in the questionnaire are scored in reverse. The scale consists of four sub-dimensions: negative self, positive self, loneliness and hopelessness, disharmony and regret. The sum of the scores obtained from the positive and negative items in the scale gives the total score of the participant regarding the scale. In this context, analyzes were made on the total score in this study. The lowest and highest scores to be obtained from the questionnaire are 40 and 200, respectively. A high score indicates high automatic negative thoughts. In the Turkish adaptation study of the questionnaire, the Cronbach Alpha internal consistency coefficient was found to be 0.92. The Cronbach Alpha internal consistency coefficient calculated on the data collected within the scope of this study is 0.95.

Life Satisfaction Scale

The 'Satisfaction with Life Scale' developed by Diener et al. (1985) and adapted into Turkish by Yetim (1991) was used to determine students' levels of life satisfaction. The scale consisting of 5 items was prepared in 7-point Likert type and scoring was done accordingly. Likert options are listed as “Strongly Disagree (1)”, “Disagree (2)”, “Partly Disagree (3)”, “Undecided (4)”, “Partly Agree (5)”, “Agree (6)” and “Strongly Agree (7)”. The highest score that can be obtained from the scale is 35. The Cronbach Alpha internal consistency coefficient calculated on the data collected within the scope of this study is 0.84.

The data collection tools used within the scope of the study were applied to the teacher candidates forming the research group before the lesson hours with the approval of the Human Research Educational Sciences Ethics Committee of Erzincan Binali Yıldırım University, dated 30.12.2022 and numbered 12/22, in the spring semester of the 2022-2023 academic year. In accordance with the Principles of the Declaration of Helsinki, it was specifically stated in the questionnaire that participation in the study was based on confidentiality and voluntariness, and detailed explanations were made before the application. In addition, it was stated to the participants that the information of the participants would be kept confidential, and their individual and self-determination rights would be respected. In this context, the collected

questionnaires were checked and those that were filled incompletely or incorrectly were excluded from the study.

Data Analysis

Statistical analyses within the scope of the study were carried out with the SPSS 21 statistical package program. Descriptive statistical methods, t-test, ANOVA and Pearson Correlation tests were used in the analysis of the data. It was decided whether the data met the prerequisites of parametric tests by examining the Skewness and Kurtosis values, normal distribution curve and Levene test results. The normal distribution range +1, -1 was taken as reference (Büyüköztürk, 2010). In the analysis of the data, the level of significance was accepted as $p<0.05$. Cronbach's Alpha internal consistency coefficients were calculated to determine the reliability of the scales.

FINDINGS

The comprehensive analysis results are presented in the findings section, encompassing distribution of scale scores, gender-specific t-test outcomes, department-based t-test findings, class-dependent ANOVA results, income-stratified t-test results, leisure time utilization t-test findings (housework and sportive activities), t-test outcomes related to leisure time utilization (social and cultural activities), leisure time utilization t-test results (outdoor and touristic activities), ANOVA outcomes linked to the frequency of participation in recreational activities, and the correlation analyses illuminating the relationship between ATQ-R and LSS variables.

Table 2. Distribution of scale scores

	Number of Items	Mean	Sd	Skewness	Kurtosis	Min.	Max.
ATQ-R	40	2.27	0.68	0.66	0.62	1.00	5.00
LSS	5	4.03	1.38	0.03	-0.67	1.00	7.00

While the arithmetic mean and standard deviation of the scores obtained from the Revised Automatic Thought Questionnaire (ATQ-R) of the pre-service teachers participating in the research are 2.27 and 0.68, respectively, the arithmetic mean of the scores from the Life Satisfaction Scale (LSS) is 4.03 and the standard deviation is 1.38. When the skewness (ATQ-R=0.66, LSS= 0.03) and kurtosis (ATQ-R=0.62, LSS=-0.67) values of the scores obtained from the scales are examined, it can be said that the data collected within the scope of the research show a normal distribution (Table 2).

Table 3. Results of t-test according to gender variable

	Female *(n=468)*		Male *(n=394)*			
	Mean	**Sd**	**Mean**	**Sd**	**t**	**p**
ATQ-R	2.24	0.67	2.29	0.69	1.00	0.32
LSS	4.04	1.38	4.02	1.39	0.26	0.79

In table 3, the t-test results of the scores obtained by the pre-service teachers from the scales according to the gender variable are presented. The analyses showed that the ATQ-R ($t=1.00$, $p>0.05$) and LSS scores did not differ significantly according to the gender variable ($t=0.26$, $p>0.05$). According to this finding, it can be said that the automatic thought and life satisfaction perceptions of male and female pre-service teacher do not change.

Table 4. Results of t-test according to department variable

	1 *(n=528)*		2 *(n=334)*			
	Mean	**Sd**	**Mean**	**Sd**	**t**	**p**
ATQ-R	2.26	0.69	2.27	0.66	0.17	0.86
LSS	4.08	1.40	3.97	1.36	1.11	0.27

1: Departments admitting students with special talent exam; 2: Other departments

In table 4, the t-test results of the scores of the pre-service teachers participating in the study from ATQ-R and LSS are presented according to the department variable. As a result of the t-test, it was determined that the scores of the participants in ATQ-R ($t=0.17$, $p>0.05$) and LSS ($t=1.11$, $p>0.05$) did not differ significantly. According to this, the automatic thought and life satisfaction perceptions of pre-service teachers studying in departments that admit students with special talent exams and other departments do not differ.

Table 5. Results of ANOVA according to class variable

	1st Class *(n=207)*		2nd Class *(n=204)*		3rd Class *(n=267)*		4th Class *(n=184)*			
	Mean	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**	**F**	**p**
ATQ-R	2.28	0.69	2.26	0.71	2.31	0.67	2.20	0.64	0.96	0.41
LSS	4.08	1.41	3.96	1.37	4.02	1.37	4.08	1.40	0.35	0.79

Table 5 presents the ANOVA results of the scores obtained by the participants from the scales according to the class variable. The analyses show that the scores of pre-service teachers from ATQ-R ($F(3,858)=0.96$, $p>0.05$) and LSS ($F(3,858)=0.35$, $p>0.05$) do not differ significantly. In this context, it can be said that automatic thought and perception of life satisfaction do not change according to class level.

Table 6. Results of t-test according to income variable

	1500 TL and below *(n=701)*		1501 TL and above *(n=161)*			
	Mean	**Sd**	**Mean**	**Sd**	**t**	**p**
ATQ-R	2.28	0.67	2.22	0.71	0.85	0.40
LSS	3.97	1.38	4.33	1.38	3.00	0.00

In table 6, the t-test results of pre-service teachers' ATQ-R and LSS scores are presented according to the income status variable. The analyses show that the scores of the participants from the ATQ-R did not differ significantly ($t=0.85$, $p>0.40$). On the other hand, it was determined that the LSS scores of the participants differed significantly ($t=3.00$, $p<0.01$). Accordingly, it can be said that participants with higher income levels have higher life satisfaction perceptions.

Tablo 7. Results of t-test according to leisure time evaluation variable (Chores at home and sportive activities)

	Chores at home						Sportive activities					
	Yes *(n=698)*		No *(n=164)*				Yes *(n=361)*		No *(n=501)*			
	Mean	**Sd**	**Mean**	**Sd**	**t**	**p**	**Mean**	**Sd**	**Mean**	**Sd**	**t**	**p**
ATQ-R	2.27	0.67	2.25	0.70	0.38	0.70	2.26	0.70	2.27	0.66	0.13	0.90
LSS	4.02	1.39	4.10	1.37	0.65	0.52	4.14	1.41	3.96	1.36	1.85	0.06

In table 7, the t-test results of the scores by the pre-service teachers from the scales are presented according to the status of evaluating the leisure time with activities at home and with sports activities. The analyses show that the ATQ-R (t=0.38, p>0.05) and LSS scores of the participants (t=0.65, p>0.05) do not differ significantly according to the status of evaluating the leisure time with activities at home. According to this finding, the automatic thoughts and life satisfaction perceptions of the participants, who evaluate their leisure time with activities at home and those who do not, do not change. On the other hand, the analyses show that the ATQ-R (t=0.13, p>0.05) and LSS scores of the participants (t=1.85, p>0.05) do not differ significantly according to the status of evaluating the leisure time with sportive activities. According to this finding, automatic thoughts and life satisfaction perceptions of pre-service teachers, who participate in sportive activities in their leisure time and do not, do not show a difference.

Table 8. Results of t-test according to leisure time evaluation variable (Social activities and cultural activities)

	Social activities						Cultural activities					
	Yes *(n=431)*		No *(n=431)*				Yes *(n=243)*		No *(n=619)*			
	Mean	**Sd**	**Mean**	**Sd**	**t**	**p**	**Mean**	**Sd**	**Mean**	**Sd**	**t**	**p**
ATQ-R	2.23	0.66	2.30	0.70	1.50	0.14	2.26	0.65	2.27	0.69	0.06	0.95
LSS	4.13	1.35	3.93	1.42	2.13	0.03	4.19	1.39	3.97	1.38	2.10	0.04

In table 8, the t-test results are presented according to the scores from the scales of the participants within the scope of the study, according to the status of evaluating the leisure time with social activities and cultural activities. As a result of the t-test, while the scores of the participants from the ATQ-R (t=1.50, p>0.05) did not differ significantly according to the status of evaluating the leisure time with social activities, the scores they got from LSS (t=2.13, p<0.05) differ significantly. Accordingly, it can be said that pre-service teachers, who stated that they participate in social activities in their leisure time, have higher life satisfaction perceptions. As a result of the t-test, while the scores of the participants from the ATQ-R (t=0.06, p>0.05) did not differ significantly according to the status of evaluating leisure time with cultural activities, the scores they got from LSS (t=2.10, p<0.05) differ significantly. Accordingly, it can be said that the life satisfaction perceptions of the participants who stated that they participated in cultural activities in their leisure time were higher.

Table 9. Results of t-test according to leisure time evaluation variable (Outdoor activities and touristic activities)

	Outdoor activities						Touristic activities					
	Yes *(n=295)*		No *(n=567)*				Yes *(n=162)*		No *(n=700)*			
	Mean	**Sd**	**Mean**	**Sd**	**t**	**p**	**Mean**	**Sd**	**Mean**	**Sd**	**t**	**p**
ATQ-R	2.28	0.66	2.26	0.69	0.30	0.76	2.29	0.63	2.26	0.69	0.58	0.56
LSS	4.03	1.32	4.04	1.42	0.06	0.95	4.09	1.33	4.02	1.40	0.56	0.57

In table 9, t-test results are presented according to the scores obtained by the participants from ATQ-R and LSS according to the status of evaluating the leisure time with outdoor activities and touristic activities. The analyses show that the scores of the participants in both ATQ-R ($t=0.30$, $p>0.05$) and LSS ($t=0.06$, $p>0.05$) do not differ significantly according to the status of evaluating the leisure time with outdoor activities. According to this finding, automatic thought and life satisfaction perceptions of pre-service teachers, who participate or do not participate in outdoor activities in their leisure time, do not change. On the other hand, the analyses show that the scores of the participants in both ATQ-R ($t=0.58$, $p>0.05$) and LSS ($t=0.56$, $p>0.05$) do not differ significantly according to the status of evaluating the leisure time with touristic activities. According to this finding, automatic thoughts and life satisfaction perceptions of pre-service teachers, who participate in touristic activities in their leisure time and do not, do not show a difference.

Table 10. Results of ANOVA according to frequency of participation in recreational activities variable

	Never/Very Rare *(n=98)*		Sometimes *(n=362)*		Frequently *(n=402)*				
	Mean	**Sd**	**Mean**	**Sd**	**Mean**	**Sd**	**F**	**p**	**Significant Difference**
ATQ-R	2.41	0.68	2.32	0.70	2.19	0.65	5.97	0.00	1>3, 2>3
LSS	3.70	1.41	4.03	1.37	4.11	1.38	3.51	0.03	3>1

Table 10 presents the ANOVA results according to the frequency of participation in recreational activities of pre-service teachers' ATQ-R and LSS scores. The analyzes show that the scores obtained from both ATQ-R ($F_{(2.859)}=5.97$, $p<0.01$) and LSS ($F_{(2.859)}=3.51$, $p<0.05$) differ significantly according to the variable of frequency of participation in recreational activities. According to this, the scores of the participants from the ATQ-R differ significantly between those who do not participate in recreational activities at all, or those who rarely and sometimes participate, and those who participate frequently, in favor of those who do not participate at all, or those who participate very rarely and sometimes, while the scores obtained from the LSS differ significantly among those who never or rarely participate in recreational activities and those who participate frequently, in favor of those who participate frequently. According to this finding, it can be said that as the frequency of participation in recreational activities increases, the perception of automatic thought decreases and the perception of life satisfaction increases.

Table 11. Correlation results between ATQ-R and LSS

		ATQ-R	
	n	**r**	**p**
LSS	862	-0.48**	0.00

Table 11 presents the correlation results between the scores of the participants from the scales. The results show that there is a negative and moderately significant relationship between automatic thought and the perception of life satisfaction. According to this, as the participants' life satisfaction increases, their automatic thought perceptions decrease.

DISCUSSION

The data obtained from this study, which was conducted to examine the leisure time participation, automatic thoughts and life satisfaction levels of pre-service teachers according to some variables and to determine the relationship between them, were discussed and interpreted in this section.

According to the results obtained from the study, automatic thought perceptions of pre-service teachers are relatively low. Similarly, in the studies conducted by Dok (2018); Hazır (2019); Kalender (2017); Kara (2016); Kaynak (2019); Parim (2019); Sevilgen et al. (2023); Şansal (2016) and Yılmaz (2015), it was determined that the automatic thought perceptions of the participants were at a low level. On the other hand, in the study conducted by Akgüç (2021), it was determined that the automatic thought perceptions of the participants were close to the moderate level. According to another result obtained from the research, the life satisfaction perceptions of the participants are at a moderate level. Similarly, in the study conducted by Akbulut et al. (2019), Küçük Kılıç et al. (2018), and Miliazim Memet (2022), it was determined that the participants' perceptions of life satisfaction were moderate. In the studies conducted by Avcı (2015) and Gül (2018), it was stated that the participants' perceptions of life satisfaction were high, while in the study conducted by Ak (2019), it was determined that the participants' perceptions of life satisfaction were at a low level. In the studies conducted by Derinyar (2022) and Küçük Kılıç et al. (2022), it was determined that the life satisfaction levels of the participants were below the moderate level. The relatively low level of automatic thought perceptions of pre-service teachers may be due to the fact that they are still students and they do not fully take their own responsibilities about life. Although individuals are trying to stand on their own feet in this period, the thought that their families will be behind them can help them get away from negative thoughts. On the other hand, the moderate level of life satisfaction perceptions may be due to the difficulties of academic life. In this context, planning studies can contribute to a better understanding and deeper understanding of the subject.

The results of the research show that the automatic thought perceptions of male and female pre-service teachers do not show a difference. Similarly, in the studies conducted by Akgüç (2012); Kalender (2017); Oruç (2013); Parim (2019); Sevilgen et al. (2023); Şansal (2016); Şirin and Izgar (2013); Tümkaya & Iflazoğlu (2000); Yılmaz (2015), it was determined that the automatic thought perceptions of male and female participants did not change. On the other hand, in the study conducted by Kara (2016), it was determined that male participant had higher automatic thought perceptions. As a result of the research, it was determined that the perception of life satisfaction did not differ according to gender. In some studies in the literature, it has been concluded that the perception of life satisfaction does not differ according to gender (Avcı, 2015; Demir, 2017; Derinyar, 2022; Dikici, 2020; Gül, 2018; İnci, 2014; Küçük Kılıç et al., 2018; Küçük Kılıç et al., 2022 and Yıldırım, 2019). Similarly, in the study conducted by Fortin et al. (2015) in Western European and Latin American countries, it was

stated that there was no gender difference in life satisfaction. On the other hand, some studies have concluded that female participants have higher perceptions of life satisfaction (Akbulut et al., 2019; Aydilek, 2019; Deniz & Yılmaz, 2004; Jovanović, 2017; Miliazim Memet, 2022; Tuzgöl Dost, 2007). The reason for this difference in the results of the study can be shown as the effect of different regulatory variables on gender. As a matter of fact, Meisenberg & Woodley (2015) and Graham & Chattopadhyay (2013) reported in their studies that gender differences in life satisfaction are formed by the effects of sociocultural conditions and demographic variables such as age, income, education and marital status, and regulatory variables such as national development level.

Another result of the study is that the automatic thought perceptions of the participants did not differ according to the department they study. Similarly, in the studies conducted by Yılmaz (2015), it was determined that the perception of automatic thought did not change according to the department. On the other hand, in the study conducted by Şirin & Izgar (2013), it was determined that the automatic thought perceptions of the participants studying in the nursing department were higher. According to the results obtained from the research, the life satisfaction perceptions of the participants do not change according to the department they study. Similarly, in the studies conducted by Aydilek (2019), İnci (2004), Küçük Kılıç et al. (2022), and Recepoğlu (2013), it was determined that the participants' perceptions of life satisfaction did not differ according to the department. In the studies conducted by Avcı (2015), Gül (2018) and Yıldırım (2019), it was determined that the participants' perceptions of life satisfaction differed according to the department. Warren and Hale (2020) reported that cognitive factors such as automatic negative thoughts and rational belief have a significant effect on non-cognitive factors such as resilience and fortitude. In other words, it can be said that automatic negative thoughts reduce the resistance of pre-service teachers to negative situations such as stress, anger, anxiety, etc. they experience in university life (Jafar et al., 2016). In addition, it can be said that the way of interpreting the negative situations and emotions and behaviors of the participants due to the characteristics of the generation they are in, are similar.

According to another result obtained from the study, the automatic thought perceptions of the participants do not differ according to the class variable. In some studies in the literature, it has been determined that the perception of automatic thought does not change according to the class (Akgüç, 2021; Duran et al, 2017; Kara, 2016; Şirin & Izgar, 2013; Tümkaya & İflazoğlu, 2000). On the other hand, in the studies conducted by Avcı (2015) and Parim (2019), it was determined that the perception of automatic thought changes according to the class and that the fourth grade students have a higher automatic thought perception. According to the results obtained from the research, the life satisfaction perceptions of the participants do not differ according to the class. Similarly, in studies conducted by Aydilek (2019), Derinyar (2022), Gül (2018), Küçük Kılıç et al. (2022), and Miliazim Memet (2022), it was determined that the perception of life satisfaction did not change according to class. On the other hand, in the study conducted by Yıldırım (2019), it was determined that the first-year participants had higher perceptions of life satisfaction, and in the study conducted by Akbulut et al. (2019), the fourth-grade participants had higher perceptions of life satisfaction.

As a result of the study, it was determined that the automatic thought perceptions of the participants did not differ according to their income status. Similarly, in the studies conducted by Oruç (2013), it was determined that the perception of automatic thought does not differ according to income. On the contrary, in some studies in the literature, it has been determined that income status and automatic thought perception are related, and those with low income status have high automatic thought perceptions (Akgüç, 2021; Tümkaya & İflazoğlu, 2000). As a result of the research, it was determined that the participants with high income levels also had high life satisfaction perceptions. Similarly, in many studies (Akbulut et al., 2019;

Blanchflower & Oswald, 2004; Clark et al., 2005; Derinyar, 2022; Gül, 2018; İnci, 2014; Kabasakal & Uz Baş, 2013; Kahneman & Deaton, 2010; Küçük Kılıç et al., 2018; Küçük Kılıç et al., 2022; Lelkes, 2006; Tuzgöl Dost, 2007), it was determined that those with high income levels have high life satisfaction perceptions. On the other hand, in the studies conducted by Demir (2017), Dikici (2020), Miliazim Memet (2022), and Yıldırım (2019), it was determined that the perception of life satisfaction did not differ according to income. Diener et al., (1999) reported that income alone is insufficient to increase life satisfaction. Along with income status, age (Frijters & Beatton, 2012), physical health (Gerdtham & Johannesson, 2001), marital status (Winkelmann & Winkelmann, 1998), having children (Theodossiou, 1998) and other familial conditions (Shields & Price, 2005) were reported to be associated with life satisfaction. In addition, Haveman (2009) stated that the non-material aspects of well-being have become increasingly important as societies become wealthy. In this study, the fact that the perception of automatic thought did not differ according to the income status variable may be due to the non-material aspects of well-being. It is thought that the increase observed in life satisfaction in parallel with the increase in income status may be related to physical health and other family conditions.

As a result of the research, it was determined that the automatic thought perceptions of the participants did not change according to the way they spend their leisure time. On the other hand, it has been determined that the life satisfaction levels of pre-service teachers who participate in social, cultural and artistic activities in leisure time are higher. In the study conducted by Küçük Kılıç et al. (2018), it was determined that university students who participate in sports and social activities in leisure time have high life satisfaction. Similarly, in the studies conducted by An et al. (2020); Brown et al. (2015); Dolan et al. (2014); Hamer et al. (2009); Mutz et al. (2021); Sigvartsen et al. (2016) and White et al. (2017), it was determined that physical activities performed in leisure time are associated with life satisfaction. In the study conducted by Küçük Kılıç et al. (2022) on pre-service teachers, it was determined that participation in sportive, social and cultural/artistic activities in leisure time increases life satisfaction. In the study conducted by Akbulut et al. (2019), it was determined that life satisfaction did not differ according to the way of using leisure time. From this point of view, it can be said that automatic thought perception is not related to the type of leisure time activity, but rather to the frequency of participation in the activity rather than the style of activity. On the other hand, it can be said that social, cultural and artistic activities are activities that give pleasure to people and provide social freedom due to their structure. It can be said that this affects life satisfaction positively.

According to the results obtained from the study, the increase in the frequency of participation in recreational activities in leisure time reduces the perception of automatic thoughts and increases life satisfaction. Similarly, in the studies conducted by Küçük Kılıç et al. (2018) and Küçük Kılıç et al. (2022), it was determined that the level of life satisfaction increased as the participation in leisure time activities increased. Similarly, in the study conducted by Yıldırım (2019), it was determined that participants who do sports three days a week have a higher perception of life satisfaction than participants who do not do any sports or do sports once a week. In addition, Dolan et al. (2014) found that the frequency of exercise and sports was positively related to life satisfaction. On the other hand, in the studies conducted by Akbulut et al. (2019) and Dikici (2020), it was determined that there is no relationship between the frequency of participation in leisure time activities and life satisfaction. In this context, it can be said that participation in leisure time activities especially reduces negative thoughts and, in parallel, increases life satisfaction. In particular, it can be stated that individuals who are freed from negative thoughts tend to have more positive emotions and get more satisfaction from life. According to the Cognitive Behavior Theory, which constitutes the theoretical basis of the qualitative study, thoughts affect emotions and emotions affect behaviors.

Finally, as a result of the research, it was determined that the increase in the perception of life satisfaction decreases the perception of automatic thought. It can be said that individuals with high life satisfaction are generally individuals who think positively, enjoy life and have a high level of happiness. In this context, it can be said that the automatic thoughts of individuals who have positive thoughts in general will be low. On the other hand, it is thought that planning studies that increase the life satisfaction of individuals will contribute to the reduction of automatic thoughts.

CONCLUSION

The results of the research show that the life satisfaction and automatic thought perceptions of male and female students do not change. In addition, it was determined that the participants' life satisfaction and automatic thought perceptions did not differ according to the department and class variables. On the other hand, participants with high income and pre-service teachers who stated that they participate in social, cultural and artistic activities in their free time have higher life satisfaction levels. As participation in recreational activities in leisure time increases, the perception of life satisfaction increases, and the perception of automatic thought decreases. In addition, as the participants' life satisfaction perceptions increase, their automatic thought perceptions also decrease.

Recommendation

The fact that the research was conducted in a state university and in a single faculty can be considered as a limitation of the study. It is thought that it is important to include students from different faculties and universities in future studies. In addition, it is important to examine similar issues with different approaches and methods in order to examine the subject in depth. From this point of view, it is recommended to conduct studies in terms of different dependent and independent variables. In addition to all these, universities organizing areas where students can spend their free time more effectively and adding such organizations to university activities can contribute to increasing life satisfaction and preventing negative automatic thoughts.

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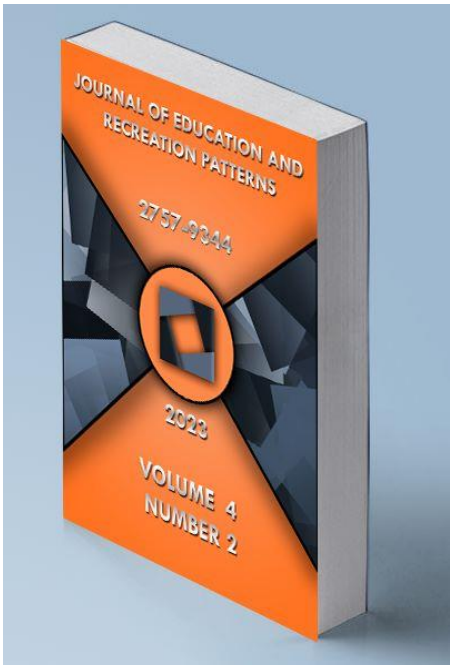
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Examination of the Relationship Between School Principals' Democratic Leadership Behaviors and Diversity Management Skills

Semih ÇAYAK[1]

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[1] Semih Çayak, Marmara University, semihcayak@gmail.com, https://orcid.org/0000-0003-4360-4288

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Examination of the Relationship Between School Principals' Democratic Leadership Behaviors and Diversity Management Skills

Semih Çayak[1]

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ABSTRACT
The aim of this study is to examine the relationship between school principals' democratic leadership behaviors and their ability to diversity management according to teacher perceptions. This study was designed using a correlational survey model. Sample of the research consists of 307 teachers working in Pendik and Kartal districts of Istanbul. "Democratic Leadership Scale" and "Diversity Management Scale" were used in the research. Research data were analyzed using arithmetic mean, standard deviation, correlation analysis, and regression analysis. According to the findings, the democratic leadership behaviors of school principals were at a moderate level, and their diversity management skills were at a low level. The results of the correlation analysis showed that there was a positive, low-level, significant relationship between the two variables. Finally, as a result of the simple linear regression analysis, it was found that school principals' democratic leadership behaviors were a significant predictor of their diversity management skills. The findings obtained from the research were discussed in line with the relevant literature and some suggestions were presented for researchers and practitioners.

Keywords: Democratic Leadership, Diversity Management, School Principals

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INTRODUCTION

Today, individuals with a wide variety of characteristics have started to work together in their workplaces due to reasons such as migration and technological advances (Öge & Canbolat, 2019). Communicating with groups of people with different cultures and characteristics, different languages, religions, and attitudes, understanding them and their "values" and doing business accordingly have become the prerequisite for success in a competitive environment (Aksu, 2008). The diversity that employees bring to business life is both a threat and wealth for organizations. These situations have revealed a new management approach conceptualized as diversity management (Memduhoğlu & Ayyürek, 2014).

The concept of diversity management emerged as a US-based understanding at the end of the 1990s, and has taken its place as a new paradigm today (Köksalan, 2019). The diversity management is a process that starts with recognizing the similar and dissimilar features of people and accepting and valuing people with all these features. This process envisages the establishment of a structure in which diversity is encouraged, in which differences are used as a lever that increases performance at the level of individuals, teams and businesses, and that all systems and organizational culture should be shaped in a way that supports this understanding (Süral Özer, 2007).

In the understanding of the diversity management, the diversities of people are evaluated as a phenomenon that should be managed in all areas of life and gains even more importance in organizational life. Because the harmony and work harmony of human communities that have come together for certain purposes play an important role on organizational outputs. People who come together to realize organizational goals such as performance, profitability, efficiency, and effectiveness, while trying to adapt to other colleagues and the organization, on the other hand, they want to live freely (gender, age, disability, etc.) and respect these diversities. (Sürgevil & Budak, 2008). Therefore, it can motivate individuals with different structures, views, and understandings, which are important in the management of diversity, towards the same goal and to achieve the goals of the organization (Linnehan & Konrad, 1999). Otherwise, a standard management approach that ignores the diversity among employees and attempts to make everyone uniform lays the groundwork for possible conflicts in the organization and causes the inner peace to be overshadowed (Tozkoparan & Vatansever, 2011). In this sense, while the approach to diversity management requires an additional effort for managers, it also emerges as an important tool for the individual to reveal their potential workforce (Akıncı Vural & Liedtke, 2017). At the point of realizing all of these, organizational managers have great responsibility. The leadership styles they will exhibit will undoubtedly be able to evaluate and support individual diversities within the organization as wealth and turn it into an advantage for the organization (Ertürk, 2023). In particular, the attitudes and behaviors of leaders with democratic values and a pluralistic understanding will be effective in the successful management of diversity. Because democratic leaders tend to seek different views within the organization and do not try to silence dissenting voices or those who offer a less popular point of view (Cherry, 2022).

In the democratic leadership style conceptualized by White and Lippit in the 1960s, group decisions are made under the leadership of the leader, encouraging group participation and discussion. In this leadership style, the leader behaves in the direction of sharing his management authority with the other employees of the group (Derin, 2016). Democratic leadership, which is one of the leadership styles that ensures equal participation of everyone in the decision-making process, establishes strong connections between team members, allows the free flow of ideas and most importantly supports diversity within the organization (Gayan, 2022). In the understanding of democratic leadership, also called participatory leadership, diversities within the organization are seen as a wealth and every member's views and

suggestions are taken into account in managerial processes (Bass, 1990; Dyczkowska & Dyczkowski, 2018; Ray & Ray, 2021). It is stated that in organizations with democratic leadership, production performance and employee satisfaction are higher in the long run than organizations managed with other leadership styles (Robbins & Coulter, 2012).

Educational organizations are social systems that include diverse people or groups in schools. In school, people with different views work to serve the same purpose. Different people working at the school; they bring different cultures, personality traits and talents to school (Gültekin & Türkmen, 2018). The diversity that employees bring to school can cause disagreements, groupings, and conflicts in schools. Therefore, it is difficult to manage schools where differences are intense, as in other organizations (Memduhoğlu, 2011). Since democratic leadership is an ethical structure, it requires the participation of individuals, respect for everyone and expectations towards them, and democracy thus spreads to the structures and links of educational institutions (Woods, 2005). Democratic leadership theory has largely been associated with governments, but it has become inevitable to associate it with organizations for appropriate behavior and effectiveness (Odumegwu, 2019). In this context, school administrators who consider diversities contribute to the formation of a culture that embraces everyone in the school and to the development of positive relations among employees (Sürgevil & Budak, 2008). The school administrator bringing together the diversities regarding the human element in a common point that will serve the purposes of the school (Memduhoğlu, 2010) requires the administrator to have leadership skills (Katıtaş, Doğan & Yıldız, 2022). Thus, the leader manager will be able to differ from the ordinary manager while taking organizational actions (Northouse, 2007). In line with this information, principals of schools, which are organizations where students, teachers, parents and other employees and individuals with very diverse characteristics, come together, are expected to manage these diversities effectively. It is thought that this will only be possible with a democratic management approach. Based on these considerations, this study aims to examine the relationship between school principals' democratic leadership behaviors and their diversity management skills according to teacher perceptions. Within the framework of this general purpose, the sub-objectives of this research are as follows:

1. What are school principals' levels of realizing democratic leadership behaviors and diversity management skill levels according to teachers' perceptions?
2. According to teachers' perceptions, do school principals' levels of realizing democratic leadership behaviors and diversity management skill levels differ significantly according to teachers' gender?
3. According to teachers' perceptions, do school principals' levels of realizing democratic leadership behaviors and diversity management skill levels differ significantly according to their professional seniority?
4. According to teachers' perceptions, do school principals' levels of realizing democratic leadership behaviors and diversity management skill levels differ significantly according to teachers' educational levels?
5. According to teachers' perceptions, is there a significant relationship between school principals' democratic leadership behaviors and diversity management skills?
6. According to teachers' perceptions, is school principals' democratic leadership behavior a significant predictor of their diversity management skills?

METHOD

Research Model

This research was designed as a correlational survey model based on quantitative research models. Correlational survey model is a survey approach that aims to determine the existence of covariance between two or more variables. In the correlational survey model, it is tried to determine whether the variables change together and if there is a change, how it happens. (Karasar, 2005).

Population and Sample

The population of the research consists of 11025 teachers working in Pendik (7368 teachers) and Kartal (3657 teachers) districts of Istanbul in the 2020-2021 academic year. Convenient sampling method, one of the non-probabilistic sampling methods, was used in the selection of the sample. The most important benefit of this sampling method is that the participants are easy to access by the researcher (Fraenkel & Wallen, 2003). Based on this information, teachers who work in the region where the researcher works and can easily reach were included in the sample of the research. The sample of the study consists of 307 teachers. Personal information of the sample group is presented in Table 1.

Table 1. Frequency and Percentage Values of Personal Information

Variable	Groups	Frequency (f)	Percentile (%)
Gender	Female	228	74
	Male	79	26
	Total	307	100
Professional Seniority	0-5 years	38	12
	6-10 years	60	20
	11-15 years	70	23
	16-20 years	55	18
	21 years or more	84	27
	Total	307	100
Level of Education to Work	Primary school	114	37
	Secondary school	120	39
	High school	73	24
	Total	307	100

When the demographic characteristics of the teachers constituting the sample group are examined, 228 (74%) of the teachers are female and 79 (26%) are male. In addition, 38 (12%) of the teachers are 0-5 years, 60 (20%) of them are 6-10 years, 70 (23%) of them are 11-15 years, 55 (18%) of them are 16-20 years and 84 (27%) of them have 21 years or more professional seniority. When the educational levels of the teachers are examined, 114 (37%) of the teachers are working in primary schools, 120 (39%) in secondary schools and 73 (24%) in high schools.

Data Collection Tools

During the study, Democratic Leadership Scale developed by Terzi (2015) and Diversity Management Scale developed by Balay and Sağlam (2004) were used. Psychometric characteristics of data collection tools are presented below.

Democratic Leadership Scale

The "Democratic Leadership Scale" used in the research was developed by Terzi (2015). The scale consists of 8 items and is a 5-point Likert type scale that is ranked as “Never” (1), “Rarely” (2), “Sometimes” (3), “Mostly” (4), “Always” (5). The total variance explained by

the democratic leadership scale is 56%. The scale is a one-dimensional scale. The Cronbach Alpha reliability coefficient of the scale was found to be .89 (Terzi, 2015). The Cronbach Alpha reliability coefficient for this study was found to be .77. The item-total correlations of the scale ranged from .57 to .81.

Diversity Management Scale

In the study, the "Diversity Management Scale" developed by Balay and Sağlam (2004) was used to determine teachers' perceptions of diversity management. The Diversity Management Scale consists of three sub-dimensions such as "individual attitudes and behaviors", "organizational values and norms", "managerial practices and policies" and 28 items. 5-point Likert type scale consists of "never (1)", "little (2)", "moderate (3)", "a lot (4)" and "completely (5)" options. The variance rate explained by the sub-dimensions of the diversity management scale is 11.4% for "individual attitudes and behaviors", 15.7% for "organizational values and norms" and 31% for "managerial practices and policies". The variance value of the Management of Diversity Scale, explained as a single factor, is 41.7%. The item-total correlations of the items in the factors of the scale ranged from .49 to .67 in the first factor, between .45 and .63 in the second factor, and between .61 and .78 in the third factor. The Cronbach Alpha reliability coefficient of the scale was calculated as .77 for the first factor, .83 for the second factor and .95 for the third factor (Balay and Sağlam, 2004). The Cronbach Alpha reliability coefficient for this study was found to be .83 for the first factor, .86 for the second factor and .82 for the third factor. The Cronbach Alpha reliability coefficient for the overall scale was found to be .88. It can be said that as the scores obtained from the dimensions of the scale increase, teachers' perceptions of the management of diversity related to that dimension increase in a positive way.

Procedures and Data Analysis

The scale link prepared through Google Forms was sent to the teachers who wanted to participate voluntarily in the research by the school administration. The analysis was made with the data of 307 scales filled by the teachers. The collected data were analyzed using SPSS 25.0 program. Before starting the analyses, it was examined whether the collected data met the one-way and multi-way normality assumptions. George and Mallery (2003) state that if the skewness and kurtosis coefficients are within ±2, the distribution of the data meets the assumption of normality. Based on this information, the skewness- kurtosis values of the data and the Q-Q graphs were examined and it was concluded that the scores of democratic leadership (.04 to -.30) and diversity management (.09 to -.06) were within the limits of normal distribution. In addition, it was observed that the expected and actual values of the data in the Q-Q graphs were distributed close to a line with a slope of 45 degrees. This showed that the distribution of the data would be considered normal (Can, 2014).

In the analysis of the data obtained within the scope of the research, descriptive statistics regarding the variables were calculated, and the relationships between the variables were determined using the Pearson product-moment correlation coefficient. SPSS 25 was used to analyze the data collected within the scope of the research. In the interpretation of the arithmetic means in the study, the range of 1.00-1.79 was "very low", the range of 1.80-2.59 "low", the range 2.60-3.39 "medium", the range 3.40-4.19 "high", and the range of 4.20-5.00 "very high" in five-point Likert type scales. In addition, in the interpretation of the correlation analysis, the range of .00-.30 was accepted as "low", the range of .31-.70 as "moderate" and the range of .71-1.00 as "high" level (Büyüköztürk, 2011). The first question of the study was analyzed by arithmetic mean, the second question by independent groups t-test, the third and fourth questions by one-way analysis of variance (Anova), the fifth question by Pearson product-moment correlation analysis, and the sixth question by simple linear regression analysis.

FINDINGS

In this part of the study, first of all, school principals' democratic leadership behavior levels according to teacher perceptions and then school principals' levels of diversity management skills were examined. Finally, the relationship between these two variables was tried to be determined. Table 2 shows the opinions of teachers about the perception levels of school principals regarding democratic leadership behaviors. The arithmetic means and standard deviation of the answers given by the participants were used to determine the views of the participants on democratic leadership.

Table 2. Descriptive Statistics on the Democratic Leadership Scale

Variable	$\bar{x}$	Sd	Skewness	Kurtosis
Democratic Leadership	3,12	,59	,04	-,30

As can be seen in Table 2, the average score of the teachers participating in the research on the "Democratic Leadership" scale is $\bar{x}$=3.12. This value shows that school principals perform democratic leadership behaviors at a moderate level according to teacher perceptions.

In the next stage of the research, teachers' views on the school principals' diversity management skills were determined and the results are presented in Table 3.

Table 3. Descriptive Statistics on the Diversity Management Scale

Variable	$\bar{x}$	Sd	Skewness	Kurtosis
Individual Attitudes and Behaviors	2.79	.78	.25	-.11
Organizational Values and Norms	2.38	.65	.27	.41
Administrative Practices and Policies	2.38	.47	.01	.16
Diversity Management (Scale Total)	2.44	.44	.09	-.06

As can be seen in Table 3, the average score for the “Individual Attitudes and Behaviors” sub-dimension $\bar{x}$=2.79, the average score for the “Organizational Values and Norms” sub-dimension $\bar{x}$=2.38, and the average score for the “Managerial Practices and Policies” sub-dimension is $\bar{x}$=2.38. The average score of the “Diversity Management Scale Total Score” is $\bar{x}$=2.44. These values showed that teachers' scores on the management of diversity scale were at a "moderate" level in the "individual attitudes and behaviors" sub-dimension, and at a "low" level in other sub-dimensions and the total score of the scale.

In order to determine whether the democratic leadership scale and diversity management scale scores of the teachers constituting the sample group show a significant difference according to the gender variable, independent groups t-test was conducted.

Table 4. Independent Groups t-Test Results according to the Gender Variable of Teachers

Score	Groups	n	$\bar{x}$	Sd	Se	*t*-Test		
						t	**Df**	*p*
Democratic Leadership	Female	228	3.12	.59	.04	.49	305	.628
	Male	79	3.09	.60	.07			
Diversity Management	Female	228	2.42	.43	.03	-1.22	305	.222
	Male	79	2.49	.46	.05			

As can be seen in Table 4, as a result of the independent groups t-test, the difference between the arithmetic means of the groups for democratic leadership (t= .49; P>.05) and management of differences (t= -1.22; P>.05) scores according to the gender variable was not found significant.

One-way analysis of variance (ANOVA) was conducted to determine whether the democratic leadership scale and diversity management scale scores of the teachers constituting the sample group showed a significant difference according to the professional seniority variable.

Table 5. Results of One-Way Analysis of Variance (ANOVA) according to the Professional Seniority Variable of Teachers

Score	Groups	n	$\bar{x}$	S.D.	Source of Variance	Sum of Squares	df	Mean Square	F	p
Democratic Leadership	0-5 years	38	3.03	.52	Between Groups	2.049	4	.512	1.483	.207
	6-10 years	60	3.13	.58	Within Groups	104.372	302	.346		
	11-15 years	70	3.23	.60	Total	106.421	306			
	16-20 years	55	2.99	.52						
	21 years and more	84	3.13	.65						
	Total	307	3.11	.59						
Diversity Management	0-5 years	38	2.47	.44	Between Groups	.525	4	.131	.689	.600
	6-10 years	60	2.49	.44	Within Groups	57.459	302	.190		
	11-15 years	70	2.47	.45	Total	57.984	306			
	16-20 years	55	2.37	.37						
	21 years and more	84	2.41	.46						
	Total	307	2.44	.44						

As can be seen in Table 5, as a result of one-way analysis of variance (ANOVA), the arithmetic averages of the groups for democratic leadership (F= 1.483; p>.05) and diversity management (F= .689; p>.05) scores according to professional seniority variable differences between them were not found significant.

A one-way analysis of variance (ANOVA) was conducted to determine whether the democratic leadership scale and diversity management scale scores of the teachers constituting the sample group showed a significant difference according to the variable of education level they served.

Table 6. Results of One-Way Analysis of Variance (ANOVA) According to The Variable of Education Level They Served.

Score	Groups	n	$\bar{x}$	S.D.	Source of Variance	Sum of Squares	df	Mean Square	F	p
Democratic Leadership	Primary school	114	3.18	.62	Between Groups	1.843	2	.922	2.679	.070
	Secondary school	120	3.13	.58	Within Groups	104.578	304	.344		
	High school	73	2.98	.53	Total	106.421	306			
	Total	307	3.11	.59						
Diversity Management	Primary school	114	2.41	.41	Between Groups	.206	2	.103	.542	.582
	Secondary school	120	2.47	.45	Within Groups	57.778	304	.190		
	High school	73	2.43	.45	Total	57.984	306			
	Total	307	2.44	.44						

As can be seen in Table 6, as a result of one-way analysis of variance (ANOVA), the arithmetic averages of the groups for democratic leadership (F= 2.679; p>,05) and diversity management (F= .542; p>,05) scores according to the education level variable of the teachers served were not found significant.

In the next stage of the research, the results of the correlation analysis conducted to determine the relationship between teachers' school principals' views on democratic leadership and diversity management skills are given in Table 7.

Table 7. The Relationship Between Teachers' Views on Democratic Leadership and Diversity Management

	Diversity Management
Democratic Leadership	.26**

**p<.01; N=307

As seen in Table 7, there is a positive, low-level significant relationship between the scale of democratic leadership and the scale of diversity management skills (r=.26; p<.01). After these processes, regression processes were performed to determine whether the democratic leadership scale score significantly predicts the difference management skills scale score, in accordance with the purpose of the research, and the results are presented in Table 8 below.

Table 8. Results of Regression Analysis Between Democratic Leadership Scale and Diversity Management Scale

Model	**B**	**Sd**	**β**	**t**	**p**	**R**	**R^2**	**F**	**p**
1.(constant)	1.85	.14		14.28	.000				
Democratic Leadership	.19	.04	.26	4.63	.000	.26	.06	21.39	.000

As seen in Table 8, as a result of the simple linear regression analysis performed to determine whether the scores of the democratic leadership scale significantly predicted the scores of the diversity management scale, it was seen that the democratic leadership scale was a significant predictor of the scores of the diversity management scale ($F_{(1-305)}$=21.39, p<0.001). It was found that the democratic leadership scale explained 6% (R^2= .06; p<0.001) of the variance in the management of differences scale score statistically significant. When the t-test result regarding the significance of the coefficient of the predictor variable in the regression equation (B= .19) is analyzed, it is seen that the democratic leadership scale is a significant predictor of the diversity management scale (p<0.001).

According to the results of the regression analysis, the regression equation that predicts the organizational trust scale is as follows:

Diversity Management Skills = (.19 x Democratic leadership) + 1.85

DISCUSSION

In this study, the relationship between school principals' democratic leadership behaviors and their ability to diversity management was examined according to the views of 307 teachers working in schools in Pendik and Kartal districts of Istanbul in the 2020-2021 academic year.

According to the research findings, it was found that school principals perform democratic leadership behaviors at a moderate level. Different results were obtained in similar studies examining the democratic leadership behaviors of school principals. For example, in a similar study, Derin (2016) found that teachers stated that school principals exhibited a high

rate of democratic leadership. In their research, Terzi and Çelik (2016) found that teachers stated that school principals were "mostly" exhibiting democratic leadership behavior. Taş, Çelik, and Tomul (2007) concluded in their research on primary schools that the leaders of the participants were prone to democratic leadership. Leadership is one of the world's oldest preoccupations and is a universal phenomenon in humans (Bass, 1990). From ancient times to modern history, leadership has played an integral role in the development of groups, societies, and nations (Choi, 2007). Democratic leadership also works best when group members are capable and willing to share their knowledge. Therefore, the fact that the democratic leadership behavior levels of school principals are different from both this research and previous studies can be considered as a normal situation arising from the difference in the internal dynamics of the schools.

Another finding obtained from the study showed that teachers' scores on the diversity management scale were at a "moderate" level in the "individual attitudes and behaviors" sub-dimension, and at a "low" level in other sub-dimensions and the total score of the scale. Balyer and Gündüz (2010) found in their research that teachers perceived the management of diversity in schools at a low level. On the other hand, Çako (2012) and Akman (2018), in their research, found that teachers perceived school principals' ability to manage diversity at a "moderate" level; in the studies conducted by Kılıçlar-Şahin (2015) and Temel and Bostancı (2020), teachers stated that the management of diversity in their schools is realized at a high level. In his research in Memduhoğlu (2007); reached the conclusion that high school administrators are competent in managing diversity. Genç (2017) also found in his research that teachers' views on the management of diversities are positive. The main purpose in the management of diversity is to reach a common point from many diversities. Diversity management is the process of creating an organizational atmosphere that will contribute to the goals and interests of the organization by using the skills and abilities of the employees in the organization in line with the goals and interests of the organization, maximizing the existing potential of the employees, ensuring that the employees reach their real potentials (Gökçen and Çavuş, 2014:531). Based on this information, it is thought that the different numbers of individuals with different characteristics in each organization and the expertise of managers in managing diversities are effective in obtaining different results from both the current research and other studies in the literature.

In the study, it was found that the scores of the democratic leadership scale and the scores of the management of diversity scale did not show significant differences according to the gender, professional seniority and educational level of the teachers. It is desirable that teachers' perceptions of school principals' democratic leadership behaviors and their ability to manage differences do not show significant differences according to demographic variables. There are studies in the literature using similar variables. In some of these studies, scale scores showed significant differences according to demographic variables (Çelik, 2016; Çetiner, 2008), while in many of them, it was seen that scale scores did not show significant differences according to variables such as gender (Derin, 2016; Gezici, 2007; Ocak, 2014; Terzi & Kurt, 2005), professional seniority (Derin, 2016; Polatcan, 2012) and educational level (Aksu, 2008; Doğan & Uğurlu, 2014; Turan, 2012), which supports the finding of this research.

In the study, it was found that there was a positive, low-level significant relationship between the scores of the teachers' democratic leadership scale and the scores of the management of differences scale. The linear regression analysis showed that school principals' democratic leadership behaviors significantly predicted their ability to manage diversities. No studies were found in the literature in which the same two variables were used together. However, when the relations of the two variables used in the study with similar different variables were examined, Temel and Bostancı (2020) determined that there was a negative and moderate relationship between school principals' ability to manage diversities and teachers' organizational cynicism levels. In his study, Tekin (2019) found that attitudes and perceptions towards leadership styles may differ between cultures. Therefore, leaders can adopt various

leadership styles in different cultural environments by considering cultural characteristics and cultural norms. Democratic leadership is the most effective leadership style in such situations. As a matter of fact, Bayyurt and Kılıç (2017) found in their research that the democratic leadership behaviors of managers have a positive effect on the strengthening of the organizational commitment of the employees. These studies show that democratic leadership is desired by employees. Because, in his research, Canpolat (2016) revealed that employees most want democratic and liberating leadership behaviors from their leadership styles. On the other hand, the fact that democratic leadership requires the basic principles necessary for the management of diversities such as encouraging the followers to participate in the decision process and supporting diversity indicates that there may be a positive relationship between the two variables (Eren, 2005). Therefore, it can be said that this finding obtained from the research is supported by the existing literature and similar studies. However, it is necessary to investigate what is effective in the low level of the relationship between the variables.

CONCLUSION

As a result; (i) teachers' perceptions of school principals' democratic leadership behaviors are moderate; (ii) teachers have low perceptions of school principals' ability to manage diversities; (iii) there is a positive, low-level and significant relationship between teachers' school principals' democratic leadership behaviors and their ability to manage diversities; (iv) according to teacher perceptions, school principals' democratic leadership behaviors significantly predict their ability to manage diversities.

Recommendation

Based on the results obtained from the research, the following recommendations can be made to the researchers and practitioners; (i) a similar research can be done with educators working in different cities; (ii) more in-depth knowledge of the research topic can be obtained by using qualitative or mixed research methods; (iii) By conducting research on the extent to which school administrators' different leadership behaviors affect their ability to manage diversity, a better understanding of the relationship between leadership and effective diversity management can be achieved; In addition, the following suggestions can be developed for practitioners in line with the results obtained; (i) In-service training can be provided to improve leadership skills and democratic attitudes of school principals to become a democratic leader; (ii) school principals can be given practical training on the management of diversity.

Limitations

This research has some limitations. The research was conducted in Istanbul, the largest city in Turkey. Similar research can be done with teachers working in different cities and the results can be compared. The scale, which is a data collection tool frequently used in quantitative research, was used in the study. Therefore, the data obtained are limited to the answers given by the participants to the scales and the scope of the measurement tools. Considering this limitation in future research it is thought that it would be beneficial to use different data collection tools such as observation and interview, which are frequently used in qualitative research

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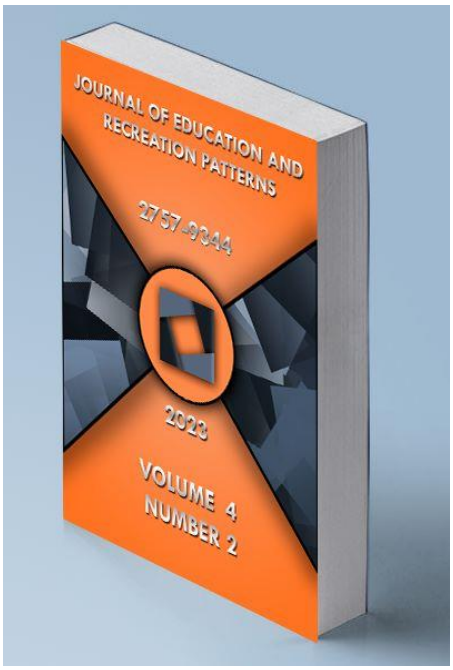
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Author's statements on ethics

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Investigation Of the Reasons Why Individuals Who Trek Participate in The Activity (The Kayseri Province Example)

Murat Bekleyiş APAYDIN[1], Bayram KAYA[2]

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[1]Murat Bekleyiş Apaydın, Dr. Lecturer, mapaydin@ohu.edu.tr, Niğde Ömer Halisdemir University Faculty of Sport Sciences https://orcid.org 0000-0002-7780-5849

[2]Bayram Kaya, Dr. Lecturer, Ardahan University, Physical Education and Sports email, bayramkaya@ardahan.edu.tr https://orcid.org/0000-0003-0249-5572

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Investigation Of the Reasons Why Individuals Who Trek Participate in The Activity (The Kayseri Province Example)

Murat Bekleyiş Apaydın[1], Bayram Kaya[2]

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ABSTRACT

The aim of this study was to determine the reasons of individuals participating in nature walks in Kayseri province for participating in such a physical activity. This researches who participate in nature walks in Kayseri province, consists of 347 people with an average age of 30,3±11,9years old. These participants consisted of 133 female and 214 male individuals. This study was used SPSS 22 program for data analysis. To sample size determination was used to G*Power (3.1.9.4). The scale created by Ekici et al. (2012) consisting of 5 sub-dimensions (Social, Healthy, Education, Time, Observation) and likert-type 24 questions. In the research, For the evaluation of the data obtained through the scale application, on the other hand, descriptor statistical methods such as frequencies (f), percentages (%), averages ($\bar{x}$), and standard deviations (SD) were utilized. It was accepted that the data do not show normal distribution and it was decided to use nonparametric tests Which is comparing in pairwise Man-Whitney U and more than two parameters' comparisons Kruskal Wallis test also. At the end of the research, it was found that there was a significant difference ($p<0,005$) in the health, education, observation, social, time sub-dimensions according to marital status, observation according to gender variable, and social health and education sub-dimensions according to education level. As a results, it was found that marital status and education level are important factors in participation in nature walks.

Keywords: Education, Health, Recreation, Social, Trekking

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INTRODUCTION

In modern days, the reasons behind both hiking and trekking have been the topic of many studies. The stress brought up by city life, and over-structuring has led individuals to seek new pursuits to achieve tranquility. Thus, environmental, and natural endeavors have increased (Atik, 2013). Due to urbanization and industrialization, individuals feel the need for nature sports. Nature sports are activities that revolve around struggling against difficulties and risks that exist in nature and sustaining life with the knowledge, skills, and conditions of individuals without any support obtained from machine or animal forces (Dinç, 2006). Nature sports were first started to be in the presence of nature and experience natural beauties. Thereafter, they transformed into the form of activities done to escape the stress of cities with the collaboration of professional guides (Açıksöz et al., 2006).

The monotonous and overwhelming structure of city life has directed individuals to nature (Ardahan & Yerlisu Lapa, 2011). The first aspect of this direction that comes to mind is trekking. Trekking is a pursuit that does not require much technical equipment and one that everybody with basic information and conditions could participate in (Gökdayı et al., 2018).

Simsek (2010) defined trekking as an activity that offers excitement and adventure to participants, harbours risks, and requires high levels of concentration. In modern terms, trekking is the general name for walks in environmental conditions with certain difficulties and properties with time limitations for proper age groups (Erdoğan, 2003). The benefits of trekking, which is among nature sports, can be ordered as learning the group dynamic, increasing trust, leadership, individual decision making, responsibility taking, positive impacts on personal development, positive impacts on trust in oneself and others, happiness, developing communication skills, and socialization (Burnett, 1994; Hilton, 1992, Levi, 1994; Wagner & Rowland, 1992; Yerlisu Lapa et al., 2010).

Deci and Ryan (1985), Engeström et al. (2003), and Kalkan (2012), in a study they conducted, stated that trekking is participated in to create social relationships, gain friends, rest, and engage in physical activity. McKenzie (2000) stated that individuals participate in trekking for goals such as individual decision-making, developing self-trust, being healthy, and taking responsibility for socialization.

Through an inspection of some studies in the literature (Aydın et al., 2019), it can be said that individuals participate in activities in nature and physical activities for goals such as socialization, gaining responsibility, resting, increasing quality of life, utilizing free time as well as increasing muscle strength through climbing activities.

The challenges of city life encourage people to participate in various activities in remote areas, especially during leisure time. These activities often attract people not only physically but also mentally, such as hiking, trekking, and nature camps. The primary objective of this research entails the examination of how demographic variables among individuals residing in Kayseri province influence their motivation levels concerning participation in trekking activities. The research hypothesizes that the reasons for participation of individuals participating in nature walks vary according to demographic variables. This research will contribute similar to some of the practices in the future.

METHOD

Research Model

Since the aim of this research is to determine the effect of demographic variables of individuals residing in Kayseri province on their motivation levels to participate in trekking activities, descriptive survey model, one of the quantitative research designs, was used in the thesis. Descriptive survey is used to determine the beliefs, attitudes, and thoughts of a specific group (McMillan & Schumacher, 2006).

Population and Sample of the Study

The population under investigation for this study encompasses individuals who participated in the Ağırnas Bağpınar trek, totaling 1,786 individuals. The sample for this study was determined using the G*power program, with parameters set as follows: one group, effect size (g) of 0.3, significance level (α) of 0.05, and power (β) of 0.085. This study used convenience sampling method and 347 participants who were voluntarily selected from the population were included in the study. This sample consisted of both men and women, with an average age of 29.4±11.1 years for men, 31.8±12.9 years for women, and an overall average age of 30.3±11.9 years, ranging from a minimum age of 18 years to a maximum age of 71 years.

Table 1. Information of Demographic Variable

Variable	f	%
Marital Status		
Married	124	35.7
Single	223	63.3
Education Status		
Middle School	52	15
High School	127	36.6
License	144	41.5
Other (Graduate)	24	6.9

(n=347)

Table 1 provides an overview of the demographic variables in the study. In terms of marital status, the majority of participants were single, comprising 63.3% of the sample, while 35.7% were married. Regarding education status, the data indicates that the educational background of the participants varied. The largest proportion, 41.5%, held a license degree, followed by 36.6% with a high school education. A smaller proportion, 15.0%, had completed middle school, and 6.9% had other graduate-level qualifications.

Data Collection Tool

The Factors motivating individuals to trek' scale made up of 24 questions and a by Ekinci et al. (2012) was utilized. The aforementioned scale's sub-dimensions consist of the social, health, education, observation, and time terms. Questions of scale, include problems in the city, spending time with family, good thinking, stress, healthy living, creative thinking etc. The Cronbach Alpha coefficient of the 5 sub-dimensions varied between (.70-.87) and the total reliability coefficient of the scale was determined to be .83. A scale of the 5-point Likert scale type was utilized. This study's statistical value for Cronbach Alpha is 780 and this data is enough for practice. According to Alpar (2018) this data valid a range for research.

Analysis of Data

In the analysis of the data, we employed statistical methods and software tools, specifically SPSS version 22, to derive meaningful insights from the findings of this study. Key statistical descriptors such as frequencies (f), percentages (%), averages ($\bar{x}$), and standard deviations (SD) were utilized to summarize and understand the data. This allowed us to gain a comprehensive overview of the study's results. To assess the normality distribution of the data, a common practice in statistical analysis, we applied a criterion where in values falling between-1.5 and 1.5 are considered to indicate normal distribution. To rigorously evaluate whether the data adhered to this criterion, we employed the Kolmogorov-Smirnov normality test. Based on the results of this test, it was determined whether the data followed a normal distribution. In cases where normality assumptions were not met, non-parametric tests were chosen for further analyses, particularly in the domains of health, education, social factors, time, and observations.

To analyse the results of the study, The scores obtained by the individuals participating in the study were analysed. Alongside basic statistical measures such as frequency, percentage, arithmetic average, and standard deviation values, we employed the Kruskal-Wallis and Mann-Whitney U tests. These non-parametric tests are valuable tools for comparing groups and assessing differences in a dataset that may not adhere to normal distribution assumptions.

Table 2. Data of Normality Test

Sub-Dimension	Skewness	Kurtosis	Statistic
Social	1,685	3,013	,167
Healthy	1,696	2,804	,128
Education	1,509	2,451	,086
Time	1,617	2,671	,083
Observation	1,421	1,804	,138

Table 2 presents the results of the normality test for various sub-dimensions of the data.

FINDINGS

In this study, the findings were analyzed and presented in tables according to demographic variables. pairwise and multiple comparisons were made and discussed in the last section according to significance values.

Table 3. Results of Age, Minimum, Maximum and Standard Deviation**.**

Variable	f	Min.	Max.	Mean
Female	214	18	63	29.4±11,1^{years}
Male	133	18	71	31.8±12,9^{years}
Total	347	18	71	30.3±11,9^{years}

In Table 3, the summary statistics for age distribution are presented, indicating that the mean age (± standard deviation) for females (n = 214) is 29.4 ± 11.1 years, for males (n = 133) is 31.8 ± 12.9 years, and for the total sample (n = 347) is 30.3 ± 11.9 years.

Table 4. Kruskal-Wallis Analysis Results of Participants' Scores on the Sub-Dimensions of the Motivation Scale for Participation in Nature Walks According to Educational Status

Sub-dimension	Education Status	n	Rank Mean	X^2	p	Tukey
Social	Middle School[a]	52	185	2.366	**,004**	c >a
	High School[b]	127	164.4			c >a
	License[c]	144	177.9			
	Other (Graduate)[d]	22	161.4			
Healthy	Middle School[a]	52	200.3	5.255	**,005**	c >a
	High School[b]	127	170.7			d >b
	License[c]	144	164.4			
	Other (Graduate)[d]	22	177.7			
Education	Middle School[a]	52	194.7	3.037	**,001**	c >a
	High School[b]	127	170.1			c >a
	License[c]	144	167.5			
	Other (Graduate)[d]	22	173.7			

(p<0,05)

Table 4 provides the outcomes of Kruskal-Wallis analysis, which aimed to explain the relationship between participants' scores on sub-dimensions of the Motivation Scale for Participation in Nature Walks and their educational status.In the 'Social' sub-dimension, there is a statistically significant difference in rank means among the educational status groups (X^2= 2.366, p = 0.004). The Tukey test reveals that group 'c' (License) scores significantly higher than group 'a' (Middle School), and this difference is also observed in the comparison of group 'c' with group 'b' (High School).Similarly, for the 'Healthy' sub-dimension, a significant difference exists in rank means (X^2= 5.255, p = 0.005). The Tukey test indicates that group 'c' scores higher than group 'a', and group 'd' (Other- Graduate) scores higher than group 'b'.In the 'Education' sub-dimension, the Kruskal-Wallis test reveals a significant difference in rank means (X^2= 3.037, p = 0.001). The Tukey test demonstrates that group 'c' scores significantly higher than group 'a', with a similar trend observed when comparing group 'c' to group 'b'. These findings highlight the influence of educational status on participants' motivation scores across various sub-dimensions of the nature walk participation scale. (p<0.05)

Table 5. Kruskal-Wallis Analysis Results of Participants' Scores Related to the Sub-Dimensions of the Motivation Scale for Participation in Nature Walks According to Educational Status

Sub-Dimension	Education Status	n	Rank Mean	X^2	p
Time	Middle School	52	179.1	1.129	,070
	High School	127	165.8		
	Licence	144	177.1		
	Other (Graduate)	22	172.5		
Observation	Middle School	52	182.8	1.821	.610
	High School	127	175.1		
	Licence	144	170.9		
	Other (Graduate)	22	150.7		

Table 5 displays the outcomes of Kruskal-Wallis analysis, which aimed to explain the association between participants' scores on sub-dimensions of the Motivation Scale for Participation in Nature Walks and their educational status.For the 'Time' sub-dimension, the Kruskal-Wallis test results indicate no statistically significant difference in rank means among the educational status groups (X^2= 1.129, p = 0.070). This suggests that educational status may not have a significant influence on participants' motivation scores in relation to the 'Time' sub-dimension. Similarly, for the 'Observation' sub-dimension, there is no significant difference in

rank means (X^2= 1.821, p = 0.610) among the educational status groups. This implies that educational status may not be a significant factor affecting participants' motivation scores in the context of the 'Observation' sub-dimension.

Table 6. According to Gender Variable Participants' Scores on the Sub-Dimensions of the Motivation Scale for Participation in Nature Walks Findings (Man-Whitney U Test)

Sub-Dimension	Gender	n	Rank Mean	X^2	p
Social	Female	214	179,1	1312	,221
	Male	133	165,6		
Healthy	Female	214	178	1337	,337
	Male	133	167,5		
Education	Female	214	177,7	1357	,470
	Male	133	169,1		
Time	Female	214	178,7	1320	,253
	Male	133	166,3		
Observation	Female	214	181,7	1256	**,040**
	Male	133	161,4		

(p<0,05)

In Table 6, the Mann-Whitney U Test revealed a significant gender-based difference only in the 'Observation' sub-dimension, where females (Rank Mean: 181.7, p = 0.040), exhibited higher motivation scores than males (Mean:161.4), while no statistically significant differences were observed in other sub-dimensions.

Table 7. According to Martial Status of Participants Examine Sub-Dimensions of the Motivation Scale for Participation in Nature Walks Results (Man-Whitney-U)

Sub-Dimension	Martial Status	n	Rank Mean	X^2	p
Social	Married	124	188,2	1081	**,005**
	Bachelor	213	157,7		
Healthy	Married	124	183,2	1143	**,037**
	Bachelor	213	160,6		
Education	Married	124	188,0	1085	**,006**
	Bachelor	213	157,9		
Time	Married	124	193,0	1021	**,000**
	Bachelor	213	159,9		
Observation	Married	124	191,2	1044	**,001**
	Bachelor	213	156,0		

(p<0,05)

Table 7 presents the findings of the participants' motivation scores in the sub-dimensions of the Motivation to Participate in Nature Walks Scale according to marital status. In the 'Social' sub-dimension, a statistically significant difference is observed (p<0.05), indicating that married participants exhibit higher motivation scores (Mean: 188.2) compared to bachelor individuals (Mean: 157.7), suggesting that marital status influences motivation in social aspects of nature walks. Similarly, in the 'Healthy' sub-dimension, there is a significant difference (p = 0.037), with married individuals displaying higher motivation scores (Mean:183.2) compared to bachelor participants (Mean:160.6), highlighting the influence of marital status on motivations related to health aspects of nature walks. The 'Education' sub-dimension also reveals a statistically significant difference (p=0.006), with married participants showing higher motivation scores (Mean:188.0) than bachelor individuals (Mean:157.9), emphasizing the impact of marital status on educational motivations during nature walk participation. Most

notably, in the 'Time' sub-dimension, a highly significant difference is observed ($p<0.001$), indicating that married participants have substantially higher motivation scores (Mean:193.0) compared to bachelor participants (Mean: 159.9) regarding time-related motivations for nature walks. Furthermore, in the 'Observation' sub-dimension, a significant difference is evident ($p= 0.001$), with married participants scoring higher in motivation (Mean:191.2) than bachelor individuals (Mean: 156.0) concerning the observation aspects of nature walks.

DISCUSSION & CONCLUSION

In this study, an examination was conducted to assess the motivating factors that drive participation in trekking activities among individuals, with a specific focus on how these motivations are influenced by demographic variables, including Education Status, Gender, and Martial Status.

The study's findings reveal that individuals with higher educational status, particularly those with a 'License' level of education, exhibit significantly higher motivation scores across various sub-dimensions of the Motivation Scale for Participation in Nature Walks, emphasizing the influential role of educational background in shaping motivation for nature walk engagement. Educational person is score meaning difference in this study (Table 4). Gumus et al. (2016) it was founded that there was participation in physical activity a significant differentiation according to the level of education and similar results were obtained with our study. Ayyıldız and Sunay (2021) in them study founded significance difference statement level of education important factor for attendance physical activity. This situation an inactive working life can affect participation in physical activity and encourage educated individuals to engage in these and other physical activities. Also known as; in recent years, physical activity types have become widespread and rise of number of participants, local administrations are supporting this leisure time activity for healthy society.

Individuals with a 'License' level of education may possess a more profound understanding of the benefits and value associated with nature walk participation, which can translate into heightened motivation across multiple dimensions. Moreover, it's plausible that higher education equips individuals with problem-solving skills, critical thinking abilities, and an enhanced capacity to connect with nature on intellectual and emotional levels. These cognitive and emotional factors may contribute to their greater motivation to explore and immerse themselves in the various facets of nature walks.

When the studies are analysed, Ardahan and Mert (2013), in a study they conducted, reported that individuals who participate in nature sports activities spotted statuses such as the desire to learn new skills, self-confidence, and the desire to escape from city factors. In other words, activities similar to trekking are effective on the self-confidence factor of the social environment individuals live in and participation in nature sports (walking, biking, mountain climbing, etc.) activities supports increasing these properties (Kaplan & Ardahan, 2012). According to these findings, it is believed that participation in trekking is impactful on individuals' skill and exploring different locations factors and that this circumstance originates from the desire of individuals to, alongside the increasing populations in modern-day cities, participate in nature sports and activities which are different than city life. This situation is a factor according to the educational statutes crucial to participating in nature sports and activities. The working population choose these and similar activities, especially in their leisure time. Marseille et al. (2013) addressed the educational status affecting participation in leisure time activities and stated that most of the participants were university graduates and above.

When the findings regarding the gender-based differences in the motivation of the participants in various sub-dimensions of the Motivation Scale for Participation in Nature Walks were analysed, a significant gender-based difference was found especially in the 'Observation' sub-dimension. Here, women exhibited higher motivation scores than men and this difference was found to be statistically significant. No statistically significant difference was observed in motivation scores in other sub-dimensions. Bozkurt and Tamer (2020) ıt was founded according to attendance of physical activity women scores were found to be significantly higher than male scores and it was found significant differentiation($p<0,05$). Dogan and Sahin (2022) statement there isn't found renewal in other sub-dimensions between male and female attendance ($p>0,005$). Based on these findings, it is seen that there are significant differences in the results according to the sample group characteristics of the studies. It is thought that these differences may be due to parameters such as city, region, occupational groups.

The higher motivation scores of women compared to their male counterparts in the 'Observation' subscale may suggest that women tend to show a more pronounced tendency to observe and derive motivation from observation during their trekking experiences. This increased interest in observation may reflect a greater appreciation for the natural environment, sensory experiences or interpersonal dynamics encountered during trekking.

Since the literature was scanned (Lapa & Ardahan, 2011). Kaplan and Ardahan, (2012) while the marital status of individuals who participate in open area activities showed similarities to our study at hand, the gender circumstance of the participants was observed to be different. It is believed that This circumstance is caused by the fact that the participants in our study are generally women individuals who are in social areas tied to Sports A that they are engaged in these types of activities and that they actively participate in these types of activities.

According to the gender variable of the participants, there is only a significant mean on the sub-dimension 'Observation'($p<0,05$). It is thought that it may be due to the monotonous life in the city life or other factors. The finding that the Man-Whitney U significance test findings in the Health, Education, and Time sub-dimensions were in the ($p>0.05$) level was reached. The observation sub-dimension (knowing plants and animals in nature), on the other hand, was found to be significant ($p<0.05$). Ardahan and Lapa 2010 remarked that individuals learning about nature and spotting differences is important for the participation of individuals in nature activities. Kraus (1977) remarked that for healthy living and the continuation of this circumstance, open-air activities are important and that these types of activities are effective in eliminating mental and physical ailments. Trekking is important in terms of its availability to all ages and its feasibility (Ardahan & Lapa, 2010). In the present study, the findings that the health sub-dimension has a relationship in the positive direction ($p<0.05$) with education status, the marital status variable; and that it is correlated in the negative direction ($p>0.05$) with the gender variable were reached. Based on these results, the health factor, similar to participation in exercise, is also important for individuals who trek.

In this context, the data reveals that participants who were married accounted for 35.7%, while those who were bachelor's degree holders constituted 63.3% of the sample. It was determined that the marital status of the participants significantly affected their motivation in all sub-dimensions of the Motivation to Participate in Trekking Scale, and married individuals exhibited higher motivation scores compared to bachelor participants.

Marital status plays a substantial role in shaping individuals' motivations for engaging in nature walks.The findings suggest that being married may offer a unique set of benefits and motivations for participating in nature walks. It's possible that married individuals, often

engaged in shared activities and responsibilities with their spouses, may find nature walks as an opportunity for bonding, quality time together, and social interaction, contributing to higher motivation in the 'Social' sub-dimension.

In the 'Healthy' sub-dimension, the results imply that married individuals might be more health-conscious or inclined to view nature walks as a means of maintaining their well-being, possibly engaging in these activities as a couple or family.Similarly, the 'Education' sub-dimension's findings indicate that married participants may view nature walks as educational opportunities, either for themselves or their families, potentially seeking to enrich their knowledge and experience together. The most striking observation is within the 'Time' sub-dimension, where married individuals exhibit significantly higher motivation scores. This suggests that married couples may value and allocate more time to engage in nature walks, considering it an integral part of their shared recreational activities.

Finally, in the 'Observation' sub-dimension, married individuals' higher motivation scores imply a greater appreciation for the observation aspects of nature walks, possibly enjoying the experience of nature together and engaging in shared observations. Akkaş et al. (2015) in their study, they found that there was a significant difference according to the marital status variable. Kalkavan et al. (2016) to statement physically active, with profits in favor of academic's time spent in a married couple was significantly different from that of a married couple. Yapıcı et al. (2022) there was a significant difference in the sub-dimensions according to marital status ($p<0,005$). Martial status can be effect attendance some of activity especially such as trekking, nature camping.

In summary, our study unravels the intricate interplay of demographic variables, specifically educational status, gender, and marital status, in shaping individuals' motivations for engaging in nature walks. These findings not only enrich our understanding of the motivations behind outdoor recreational activities but also provide practical insights for tailoring nature walk experiences to diverse participant groups. By doing so, we can enhance engagement and overall enjoyment of these outdoor activities, ultimately contributing to a healthier and more active society.

In the conclusion, this study conducted in Kayseri, a location where no studies of this type had previously been conducted, aimed to determine the motivations of individuals who participated in trekking and was conducted for the findings to be data for other activities. After the study, it was observed that more women individuals participated in trekking in the Kayseri province, that the ratio of participants who were bachelor's graduates was high, and that unmarried individuals participated at a higher rate. As known as, it was founded marital status and education level are significant factors in participation in nature activities. This situation is evaluate by the local government and regulate the activities in the future.

Recommendations

Given the significant impact of educational status on motivation for nature walks, it is advisable to develop and implement educational programs and initiatives that promote awareness and understanding of the benefits and joys of outdoor activities. These programs should target individuals across all educational levels, with a special focus on those with lower educational backgrounds, to bridge the motivation gap.

Recognizing the gender-based differences in motivation, nature walk organizers should adopt a gender-inclusive approach in planning and organizing outdoor activities. This may

involve offering diverse experiences and routes that cater to the distinct motivations of both men and women, fostering a more welcoming and inclusive environment for all participants.

Given the influence of marital status on motivation, promoting family-centric nature walk activities can be beneficial. Creating opportunities for couples and families to engage in outdoor activities together can enhance the social and shared experiences associated with nature walks. Special family-oriented events and incentives may encourage more married participants to take part.

Incorporating motivation assessment tools into nature walk programs can help organizers tailor activities to individual preferences. By understanding participants' motivations, organizers can design experiences that align with their desires, making the walks more appealing and satisfying.

To ensure sustained engagement in nature walks, it's essential to develop long-term strategies that keep participants motivated over time. This might involve creating loyalty programs, offering incentives, or organizing regular events that provide ongoing opportunities for enjoyment and social interaction in the natural environment.

These suggestions aim to capitalize on the insights gained from our study, fostering a more inclusive, educational, and enjoyable experience for individuals participating in nature walks while promoting overall well-being and a deeper connection with the natural world.

The same study could be conducted with a different study group. To increase trekking activities, starting with municipalities, National Education Directorates, Provincial Directorates of Youth and Sports, and other non-governmental organizations could act. Trekking could be reduced into the curriculums of schools at every stage.

Limitations

Our study focused on the demographic variables of educational status, gender, and marital status. While these factors provided valuable insights, other demographic elements, such as age, income, and cultural background, were not considered. Future research could explore the impact of a broader range of demographics on motivation for nature walk participation. Our study relied on self-reported data, which can be subject to response bias or social desirability bias. Participants may have provided answers they believed were expected rather than reflecting their true motivations. Combining self-report measures with objective assessments, such as behavioral observations, could enhance the validity of future studies.

The study was conducted within the context of a specific region (Kayseri province). Regional characteristics, climate, and natural landscapes can influence motivation for outdoor activities. Expanding the study to encompass a more diverse range of geographical settings could provide a broader perspective. While our study identified associations between demographic variables and motivation, it did not establish causality. Additionally, the findings may not be entirely generalizable to populations in different cultural or geographical contexts.

Replicating the study in diverse settings and conducting experimental research to establish causation would be valuable.

Convenience sampling was used in this study, which may introduce selection bias. Participants who voluntarily chose to engage in the nature walk activity may possess different motivations than those who did not participate. Future research could employ more diverse sampling methods to mitigate this limitation. Despite these limitations, our study provides valuable insights into the role of demographic variables in shaping motivations for nature walk

participation. Future research endeavors can build upon these findings to offer a more comprehensive understanding of this complex phenomenon.

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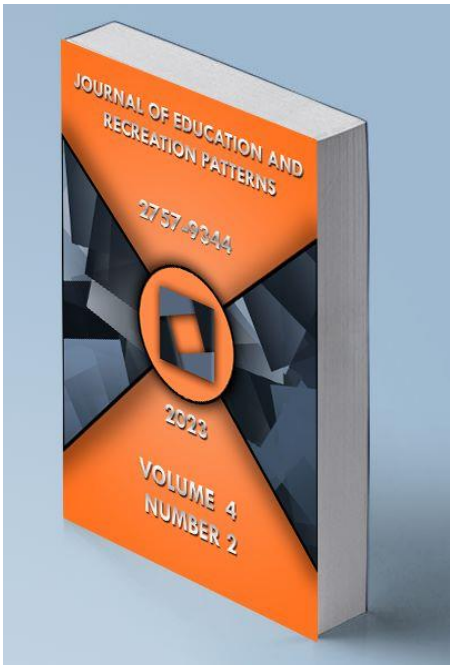
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Research on the Relationship Between Ski and Snowboard Athletes' Fear of Failure and Their Sport Enjoyment and Goal Orientation

Davut BUDAK[1], Neslihan KANDİL[2]

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[1] Davut Budak, Atatürk University, Faculty of Sport Science, Erzurum/Türkiye, dbudak@atauni.edu.tr, https://orcid.org/0000-0003-2632-0232

[2] Neslihan Kandil, Atatürk University, Faculty of Sport Science, Doctorate Student, Erzurum/Türkiye, neslihankandil44@gmail.com https://orcid.org/0000-0003-1004-5432

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Research on the Relationship Between Ski and Snowboard Athletes' Fear of Failure and Their Sport Enjoyment and Goal Orientation

Davut Budak[1], Neslihan Kandil[2]

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ABSTRACT

Enjoying sport is a critical factor in understanding the sources of athletes' enthusiasm for sport, creating enjoyable sport experiences for young athletes, maintaining their participation in sport, and setting specific goals. It is well known that fear of failure is amongst the main motivational problems on the path to achieving set goals. The inability to eliminate the fear of failure can lead to a decline in the level of fulfilment, satisfaction, and pleasure, interfering with the achievement of goals set by the athlete for a specific purpose. From this point of view, the aim of our study is to examine the effects of ski and snowboard athletes' enjoyment of sport and goal orientation on their fear of failure in terms of various variables. This study is quantitative research in which the correlational survey model was applied. The Sources of Sports Enjoyment Scale (SSEE) adapted to Turkish by Çimen and Gürbüz (2008), the Task and Ego Orientation Scale (TEOS) adapted to Turkish by Toros (2004), and The Performance Failure Appraisal Inventory translated into Turkish by Kahraman and Sungur (2016) were used. The population of the study consists of ski and snowboard athletes in Turkey, while the sample group consists of a total of 124 ski and snowboard athletes 72 of whom are male and 25 of whom are female randomly selected from various ski clubs. Significant differences were found in all sub-scales of the participants' gender variable and sports failure scale, and in both sub-scales of participation level variable and goal orientation. Positive moderate linear relationships were observed between sources of goal orientation, ego orientation and enjoyment of sport, and between ego orientation and goal orientation. Regarding the Failure in Sports scale, the female participants who regularly attended the trainings had, on average, higher scores on the "Participation Level" variable and the "Goal Orientation" scale. As the sources of sports enjoyment increase, goal orientation and ego orientation also increase. As ego orientation increases, goal orientation also increases.

Keywords: Fear of Failure, Goal Orientation, Sports, Enjoyment

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INTRODUCTION

Enjoying sport is a critical factor in understanding the sources of athletes' enthusiasm for sport, creating enjoyable sport experiences for young athletes, maintaining their participation in sport, and setting specific goals. It is well known that fear of failure is amongst the main motivational problems on the path to achieving set goals. The inability to eliminate the fear of failure can lead to a decline in the level of fulfilment, satisfaction, and pleasure, interfering with the achievement of goals set by the athlete for a specific purpose.

Enjoyment is one of the key factors for motivated behavior and regular participation in sports (Scanlan & Simons, 1992; Scanlan, et.al., 1993; Weiss et.al., 2001). According to Wiess and Williams (2004), there are three reasons for the young generation to participate in sports. The first reason is physical competence. By participating in sports, the young want to develop general motor skills and sports-related skills in order to achieve their goals. The second reason is the social acceptance. The young generation like to make new friends and to share a team atmosphere. The third reason is enjoyment. The young generation want to participate in sports in order to discharge their energy and to experience thrill. These factors indicate the complexity of youth sports context which includes both individual (leisure) and social environment related (coaching behavior and application) factors and which is significant to understand the participation in youth sports (Weiss & Williams, 2004). These findings support the significance of enjoyment in the youth sports environments.

As mentioned above, enjoyment is an inseparable part of sports motivation, and it is accepted as the primary reason for starting and sustaining the sports participation (Scanlan et.al., 1993; Weiss, 2000). Enjoyment is also among the significant motivation theories such as achievement goal theory (Nicholls, 1989), competence motivation theory (Harter, 1980) and sports addiction model (Scanlan, et.al., 1993). According to Scanlan et.al (1989), the level of perceived effort and mastering skills are the critical predictors of enjoyment obtained from sports no matter the skill levels of the athletes. Positive peer and coach relationships, and the support from coaches and peers are also indicated as the factors increasing the enjoyment obtained from sports (Scanlan, et.al, 1993). Thus, the correlation between enjoyment and self-development is positive (MacDonald et.al, 2011). An increase in participant satisfaction can lead to an enhancement in positive self-development. Although measuring enjoyment is difficult in sports addiction (Côté et.al, 2005), it is a significant measure of of sports experience, and is vital in terms of understanding youth sports involvement (Wiersma, 2001).

Athletes want to be successful in life because of the enjoyment of participating in the sports competitions and to feel the joy and taste brought by success. Therefore, they set long and short-term goals, continuously make plans, and carry out activities and trainings in the light of these goals. Goal orientation can be defined as the set goals or type of goals to succeed, and the activities offered by athletes or individuals along with these types of goals. Achieving a goal results in sense of success; however, the value of that goal is given in the light of achieving it the athletes and according to the level of success. In other words, goal-oriented academicians believe that achieving a goal gives individuals a sense of success. The goals which are accepted as valuable by the athletes are the proof of goal orientation (Aksoy, 2019).

Goal orientation is discussed in two factors that are related to ego and task orientation (Doğru, 2019). Stephens and Bredemier (1995), stated that task-oriented athletes prefer to be in sports environments, and as a result, they feel competent and successful. Task-oriented athletes see success as an opportunity to develop their skills. Main themes are to develop

previous skills or learn new ones, not to repeat mistakes and how to develop significant skills. As opposed to task-oriented individuals, ego-oriented individuals are interested in skills of carrying out tasks. Ego-oriented individuals show their self-sacrifice and skills in various ways. These individuals perceive themselves as less skilled when they show more effort to achieve the same goal as their rivals. In this assumption, ego-oriented individuals perceive themselves as more skilled when they show less effort and good performance, and they interpret success as being better than someone else or not being left behind (Kocaekşi, 2010).

The fear of failure is a part of effort of focusing on fundamental problems in our lives (Vealey, 2008). Individuals perceive changes in the form of coping with environmental conditions in which they believe that these affect the skills of multiple goal achievement through emotions. The perceived changes can be real or imaginative; however, individuals consciously or unconsciously must assess how these changes affect their goals. Anxiety and concern assessment comprises determining the relationship between a perceived change and goals, determining if the perceived change is advantageous or negative in reaching the goal, and determining the substance of a specific goal (Lazarus, 1991).

The fear of failure is an interesting phenomenon in itself. Many athletes tell the story of how their fear of failure caused their best performance. The opposite story is less known, yet the ones who are paralyzed due to the fear of failure and the ones who cannot reach their full potential are like this. The concept of motive of fear of failure or avoidance of failure was first defined by Atkinson as the “the skill and tendency of feeling ashamed by failure or as a result of failure”. It is accepted as a sort of performance anxiety. It is in the center of emotions, shame, fear or fear of failure (Conroy, 2001).

In this regard, the aim of this study is to research on the relationship between ski and snowboard athletes fear of failure and their sport enjoyment and goal orientation

METHOD

Research Model

In the study, correlational survey model and purposeful sampling methods were used. In this model, the existence and significance of the correlation between dependent and independent variables was aimed to be revealed (Crano & Brewer, 2002).

Population and Sample

The population of the study consisted of ski and snowboard athletes in Turkey, yet the sample group consisted of a total of 124 ski and snowboard athletes, 52 females and 72 males, which were selected through random sampling method.

Data Collection

In the study, three separate collection tools were used. The first scale used in the study is The Sources of Sports Enjoyment Scale For (SEE). The SEE was developed by Wiersma (2001) and adapted to Turkish by Çimen and Gürbüz (2008). The second scale used in the study is the Task and Ego Orientation Scale (TEOS) and this scale was developed by Duda (1989; 1992). The Turkish validity and reliability study of the scale was done by Toros (2004). The last scale used in the study is The Performance Failure Appraisal Inventory. This scale was introduced into literature by Conroy (2001) and adapted into Turkish by Kahraman and Sungur (2016).

Data Analysis

In the assessment of the obtained data, frequency analysis, descriptive statistics, independent t samples t-test, one way analysis of variance, Pearson correlation test for testing the correlation between scales were used. It was determined that the data showed a parametric distribution.

Ethics of Study

The "Higher Education Institutions Scientific Research and Publication Ethics Regulation" was followed when performing this study, and permission was received from the university's Ethics Committee. Issue date of ethical evaluation document: 23.05.2023, Number of ethical evaluation document: E-70400699-000-2300160096

FINDINGS

Table 1. Demographics of Participants

Demographics	**N**	**%**
Gender		
Female	52	41,9
Male	72	58,1
Age		
11-13 years	32	25,8
14-16 years	17	13,7
17-18 years	15	12,1
19 and above	60	48,4
Field		
Ski	79	63,7
Snowboard	45	36,3
Performance Assessment		
Inadequate	8	8
Average	70	70
Advanced	46	46
What is the frequency of training during the season?		
Three days or less a week	48	38,7
Four days a week	41	33,1
Five days or more a week	35	28,2
Do you participate in trainings regularly?		
Yes	106	85,5
No	18	14,5
Total	124	100

It is determined that 58,1% of the participants are male, 48,4% are 19 years of old or more, 65,5% perform in an average range, 38,7% train 3 days or less a week, and 85,5% regularly participate in trainings.

Table 2. Comparison of Obtained Scores from Performance Failure Appraisal Inventory Subscales for Gender Variable of Participants

Subscale	Gender	n	$\overline{X}$	Sd	t	p
Fear of Devaluing One's Self-Estimate	Female	52	3,19	1,195	3,581	**,000***
	Male	72	2,45	1,086		
Fear of Having an Uncertain Future	Female	52	2,98	1,099	2,536	**,012***
	Male	72	2,47	1,095		
Fear of Upsetting Important Others	Female	52	3,33	1,036	3,222	**,002***
	Male	72	2,71	1,085		
Fear of Experiencing Shame & Embarrassment	Female	52	3,28	1,134	3,691	**,000***
	Male	72	2,51	1,135		
Fear of Important Others Losing Interest	Female	52	2,67	1,284	2,511	**,013**
	Male	72	2,11	1,193		

When the data is considered, it is found that there are statistically significant differences in all subscales of Performance Failure Appraisal Inventory in terms of genders of the participants. That is, it is determined that female participants scored higher when compared to males.

Table 3. Comparison of Obtained Scores from Subscales of Task and Ego Orientation Scale for Age Variable of Participants

Subscale	Age	n	$\overline{X}$	Sd	f	p
Task Orientation	11-13 years	32	4,28	,552	2,224	,089
	14-16 years	17	3,77	1,198		
	17-18 years	15	4,13	,655		
	19 and above	60	4,30	,748		
Ego Orientation	11-13 years	32	3,92	,853	1,215	,307
	14-16 years	17	3,46	1,246		
	17-18 years	15	3,93	,808		
	19 and above	60	3,92	,904		

The analyzes indicated that there were no statistically significant difference in the mean scores of Task and Ego Orientation Scale in terms of age variable of participants.

Table 4. Comparison of Obtained Scores from Subscales of Task and Ego Orientation Scale for Regular Training Participation Variable of Participants

Subscale	Regular Training Participation	n	$\overline{X}$	Sd	t	p
Task Orientation	Yes	106	4,28	,674	2,847	**,005***
	No	18	3,73	1,164		
Ego Orientation	Yes	106	3,94	,911	2,460	**,015***
	No	18	3,37	,960		

The data indicated that there are significant differences in both subscales of Task and Ego Orientation Scale in terms of regular training participation variable. That is, the athletes participating regularly in training sessions have higher scores when compared to the other group.

Table 5. Comparison of Obtained Scores from Performance Failure Appraisal Inventory Subscales for Performance Assessment Variable of Participants

Subscale	Performance Assessment	n	$\overline{X}$	Sd	f	p
Fear of Devaluing One's Self-Estimate	Inadequate	8	3,50	1,187	3,535	**,032***
	Average	70	2,88	1,228		
	Advanced	46	2,46	1,050		
Fear of Having an Uncertain Future	Inadequate	8	3,15	1,288	1,880	,157
	Average	70	2,78	1,063		
	Advanced	46	2,46	1,157		
Fear of Upsetting Important Others	Inadequate	8	3,47	,861	1,203	,304
	Average	70	3,00	1,149		
	Advanced	46	2,83	1,063		
Fear of Experiencing Shame & Embarrassment	Inadequate	8	3,50	1,082	4,722	**,011***
	Average	70	3,01	1,218		
	Advanced	46	2,45	1,068		
Fear of Important Others Losing Interest	Inadequate	8	2,42	1,044	3,902	**,023***
	Average	70	2,60	1,309		
	Advanced	46	1,95	1,126		

Table 5 indicated that the athletes who assess their performance as inadequate have high scores in Fear of Devaluing One's Self-Estimate (p=,032) and Fear of Experiencing Shame & Embarrassment (p=,011) whereas the athletes with an average level of performance assessment have higher scores in Fear of Important Others Losing Interest (p=,023).

Table 6. Comparison of Obtained Scores from Subscales of Sources of Sports Enjoyment Scale for Age Variable of Participants

Subscale	Age	n	$\overline{X}$	Sd	f	p
Affiliation with Peers	11-13 years	32	4,50	,471	3,511	**,017***
	14-16 years	17	3,95	1,199		
	17-18 years	15	3,74	1,101		
	19 and above	60	4,30	,818		
Other-Referenced Competency	11-13 years	32	4,17	,826	1,505	,217
	14-16 years	17	3,91	1,249		
	17-18 years	15	3,70	1,195		
	19 and above	60	4,21	,820		
Self-Referenced Competency	11-13 years	32	4,36	,695	1,594	,194
	14-16 years	17	4,00	1,319		
	17-18 years	15	3,75	1,210		
	19 and above	60	4,14	,859		
Positive Parental Involvement	11-13 years	32	4,28	,893	3,032	**,032***
	14-16 years	17	3,79	1,118		
	17-18 years	15	3,58	1,112		
	19 and above	60	4,22	,822		
Effort Expenditure	11-13 years	32	4,20	,597	3,809	**,012***
	14-16 years	17	3,72	1,113		
	17-18 years	15	3,57	1,094		
	19 and above	60	4,21	,720		

Recognition	11-13 years	32	4,39	,849	1,289	,282
	14-16 years	17	3,97	1,217		
	17-18 years	15	3,90	1,270		
	19 and above	60	4,28	,903		

When the age variable and Subscales of Sources of Sports Enjoyment Scale were compared, 11-13 years group has higher scores in Affiliation with Peers (p=,017) and Positive Parental Involvement (p=,032) subscale whereas 19 years and above group has higher scores in Effort Expenditure (p=,012) subscale.

Table 7. Correlation between Sources of Sports Enjoyment Scale, Performance Failure Appraisal Inventory and Task and Ego Orientation Scale

		Sources of Sports Enjoyment	**Performance Failure Appraisal Inventory**	**Task Orientation**	**Ego Orientation**
Sources of Sports Enjoyment	P C	1	-,100	,626**	,419**
	Sig. (2-tailed)		,268	,000	,000
	N	124	124	124	124
Performance Failure Appraisal Inventory	P C	-,100	1	-,084	,172
	Sig. (2-tailed)	,268		,354	,056
	N	124	124	124	124
Task Orientation	P C	,626**	-,084	1	,611**
	Sig. (2-tailed)	,000	,354		,000
	N	124	124	124	124
Ego Orientation	P C	,419**	,172	,611**	1
	Sig. (2-tailed)	,000	,056	,000	
	N	124	124	124	124

**. Correlation is significant at the 0.01 level (2-tailed).

In Table 7, we present the results of Pearson's correlation analysis, which aimed to explore the relationships between the Sources of Sports Enjoyment Scale, Performance Failure Appraisal Inventory, Task Orientation, and Ego Orientation Scale (r=.626,p<05). Also, there is a positive and medium level of correlation between ego orientation and task orientation (r=.611,p<25). A strong positive correlation was observed between Sources of Sports Enjoyment and Task Orientation ($r = 0.626$, $p < 0.01$**). This finding indicates that individuals who derive higher levels of enjoyment from sports tend to exhibit a more pronounced task-oriented orientation.

DISCUSSION & CONCLUSION

The current study analyzed the obtained athlete demographic data from ski and snowboard athletes in terms of the effect of sources of enjoyment and goal orientation on the fear of failure.

It is found that the female athletes have higher scores in "fear of devaluing one's self-estimate, fear of having an uncertain future, fear of upsetting important others, fear of experiencing shame and embarrassment and fear of important others losing interest" when compared to the male athletes. In the study carried out by Engür (2011), it was stated that male athletes had higher scores from fear of experiencing shame and embarrassment although there were no statistically significant differences in terms of gender.

When the data was evaluated, no statistically significant difference was found in goal orientation in terms of ages of participants. Treasure, Carpenter and Power (2000) found that age variable affects the goal orientation in footballers. In a study carried out with sport sciences faculty students of Kocaeli University, no significant differences were found in task and ego orientational goals in terms of age variable. This result is paralleled with our study results (Kayğusuz et al., 2016).

When the data is considered, significant differences were found in both subscales of goal orientation in terms of regular training participation levels. According to Kocaekşi (2010), the fact that an athlete is both task and ego-oriented derives from the athlete's difficulties, the player's sense of achievement in sports situations, and the nature of sports.

There is a statistically significant difference in sources of sport enjoyment of the participants in terms of age variable. Previous research shows that as the chronological age of the young athletes increases, the enjoyment they get from sports decreases (Scanlan & Lewthwaite, 1986). The children with no motivational and cognitive preparedness for competitions may not enjoy participation. This participation is because parents make the decisions, not because internal motives (Passer & Wilson, 2002). Unlike the current study, the conclusion that decreasing age enjoy the participation in sports more is parallel to the study mentioned above.

In the light of the results of the current study, the following suggestions can be made; we see different results when we examine the results of literature studies on individual sports such as skiing and snowboarding. The current study can be carried out with the athletes of team sports which will contribute to the literature from a different perspective. Also, the goal orientation of coaches and athletes can be studied. A study to reveal why female athletes' performances are affected by fear of failure can be carried out, and education programs for families and coaches can be developed.

Recommendations

1. Conducting studies with wider participation by increasing the number of samples,
2. Carrying out studies with different sports branches,
3. Comparison between team sports and individual sports
4. Studies can be done with different sampling methods.

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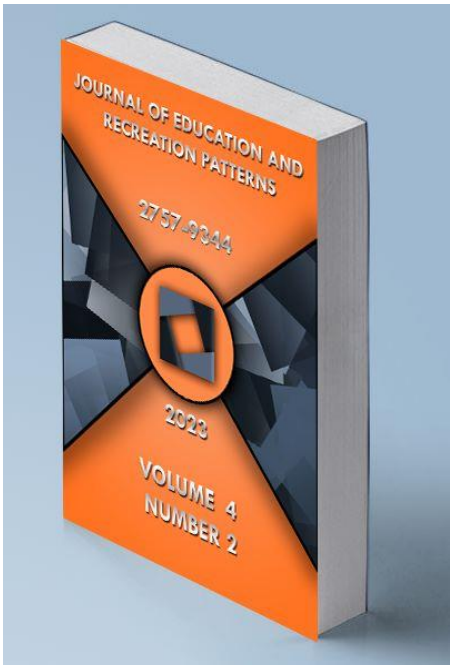
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Investigation of E-complaints Made to Fan Stores of Sports Clubs

Ömer SİVRİKAYA[1], Ruşen BALABAN [2]

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[1] Ömer Sivrikaya, Faculty of Sports Sciences, Düzce University, omersivrikaya81@gmail.com, http://orcid.org/0000-0002-3529-8754

[2] Ruşen Balaban, Institute of Postgraduate Education. Düzce University. rusenbalaban@hotmail.com, http://orcid.org/0000-0003-4297-4471

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Investigation of E-complaints Made to Fan Stores of Sports Clubs

Ömer Sivrikaya[1], Ruşen Balaban[2]

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ABSTRACT

The aim of research is to determine how satisfied the fans are with the shopping stores where the sports clubs sell their licensed commercial products. Document analysis was used in this study. The website "www.sikayetvar.com" is a platform that tries to protect consumer rights by publishing many shopping-related complaints. In this platform, the complaints of the fans of the four sports clubs (Besiktas, Fenerbahce, Galatasaray, and Trabzonspor) in Turkey were examined, and their satisfaction with the fan stores was examined within the framework of the cause-effect relationship. The complaint profiles of the brands were examined by considering 569 complaints filed between 01.01 - 31.12.2021 on the website of Kartal Yuvası, Fenerium, GS Store, and TS Club, which are the fan stores of Beşiktaş, Fenerbahçe, Galatasaray, and Trabzonspor clubs. Complaint texts were analyzed and coded by three experts in the field. Common codes were determined by re-reading and evaluation by the researchers. The themes that could be the main titles of the codes obtained were determined. Themes and codes are tabulated. The data obtained were compared with the results of the survey evaluation conducted by the "www.sikayetvar.com" platform regarding 569 complaints. A descriptive analysis was undertaken to strengthen the validity of the research. As a result, it has been determined that there are many problems under the headings of product and customer relations management, the fans are not satisfied with the stores where the sports clubs sell licensed products, and the sports clubs cannot establish sustainable customer relations with their fans.

Keywords: Customer Satisfaction, E-complaint, Fan, Sports Club

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INTRODUCTION

In recent years, e-commerce has experienced significant growth due to the large increase in internet usage. Worldwide internet users exceed 50% of the total global population (Ullah et al. 2021). The Internet provides the user with an instant and easily accessible way to broadcast their thoughts, feelings, and perspectives on products and services (Dellarocas, 2003). With the widespread use of the Internet, consumers have begun to express their complaints in the digital environment. The transmission of electronic content by individuals to each other over the internet is defined as e-WOM (Electronic word-of-mouth) (Ho & Dempsey, 2010). These convenient environments allow customers to submit their complaints offline as well as online. In other words, customers who shop online can now file complaints online. However, online complaints offer the promise of a faster response than traditional complaints (Lee and Cude, 2011). With the evolution of the internet; User-generated content has become the primary source of information for evaluating product satisfaction on behalf of consumers and businesses. Online reviews not only help potential consumers make purchasing decisions, but also help relevant managers identify the factors that affect satisfaction (Guo et al., 2017). Nowadays, shopping online has become quite common. Customers who are accustomed to shopping on the Internet prefer the Internet environment to convey their complaints. In fact, it is more preferred to send complaints over the internet after shopping in the store without going to the store.

The commercialization of sporting events and tournaments has created a stir in the global sporting goods market. Products such as jerseys, socks, tracksuits, t-shirts and sportswear printed with the logos of major sports teams have attracted great interest among consumers who prefer trendy casual and sportswear. Other factors are expected to drive the market further, including increased spending capacities of consumers and increased investment in sports licenses around the world. In the past few years, the global licensed sporting goods market has reached new heights with new developments in material quality and the latest fashion trends; While the size of this market is 30 billion dollars in 2021, the projected value in 2031 is 59 billion dollars (https://www.factmr.com, 2022). Sports brands and related licensed products are widely used for self-expression, social connection, and helping people experience certain emotions (Papadimitriou & Apostolopoulou, 2018). Financial success can be achieved with a strong sports marketing application. However, to be able to do this, the first thing to do is to know the supporter of licensed products (Özer & Argan, 2006). According to the study of Yim et al. (2021), knowing the generations of the fans (baby boomer, x, y, z) is important in terms of responding to the wishes and needs of those generations.

Consumers who are satisfied with the products are not affected by the prices. They do not gravitate towards other firms and are more loyal than dissatisfied consumers (Dimitriades, 2006). The rapid development of the Internet has profoundly changed the field of customer satisfaction. Because consumers can now freely share their experiences online and evaluate the products and services they buy. Therefore, analyzing online reviews can help firms improve their service quality and manage their online reputation (Agarwal et al. 2021).

Expectations must be known and supported to achieve higher levels of customer satisfaction and avoid cross-brand switching. The customer must be taken into account in order to develop an effective complaint management process. Practical facts prove that dissatisfaction leads to both immigration behavior and negative referrals to customers. Complaining customers should be taken into account, it is necessary to identify internal deficiencies in the company

and develop an appropriate recovery strategy. This should focus on actively promoting complaining behavior and establishing effective procedures to solve problems, eliminate causes of dissatisfaction and provide quick resolution is a basic requirement for sports clubs (Filip, 2013).

Making complaints online means we can find more content on customer satisfaction. As Hong and Lee (2005) stated in their study; E-complaining, which is made more easily and simply rather than face to face, has increased the intention of consumers to express their dissatisfaction.

According to the statements made by the clubs to the Public Disclosure Platform (KAP), the most indebted team was Fenerbahçe, which signed contracts with 14 football players and a new technical team at the beginning of the season. The only football branch debt of the yellow-dark blue club is 6.25 billion liras. Beşiktaş is followed by the yellow-dark blue club in the debt classification. Starting the season with 13 new transfers, Beşiktaş's liability increased to 5.61 billion liras. Galatasaray is in the third place in the list of the most indebted teams. The yellow-red team, which started the season with the change of technical committee and 14 new players, is faced with a debt of 5.24 billion liras. Trabzonspor, the champion of the last season, joined the caravan of those who multiplied their debts as if they were honoring the three big teams of Istanbul. The debt of the burgundy-blue people, who entered the season with 13 new players, reached 3.6 billion liras (www.trtspor.com.tr, 2022).

For the steady growth of licensed product sales, which is an important input in the financial management of sports clubs, it is an important requirement to obtain data related to the satisfaction of the shopping customer base. For this reason, it is a vital issue for sports clubs to analyze customer satisfaction by examining the customer complaints of the stores that are the subject of the research.

The aim of the research is to examine the customer complaints of sports club product stores in Türkiye. Having the most supporters and therefore potential customers in Turkey; To determine the messages given by customer complaints by examining the complaints received through the www.sikayetvar.com website of Kartal Yuvası, Fenerium, GS Store and TS Club brands, which are the product sa These definitions are the main headings of content analysis. There is no mention of content analysis.les store brands of Beşiktaş, Fenerbahçe, Galatasaray and Trabzonspor clubs. It is known that sports clubs in our country are experiencing economic problems. The four sports clubs, which are the subject of the research as the sports clubs with the most supporters, are also the clubs with the most debt.

METHOD

Research Design

Document analysis, one of the qualitative research methods, was used in the research. According to Seyidoğlu (2016), documents and information provided electronically via the Internet have become a basic resource for the researcher. According to Bowen (2009), this method is considered in the context of data collection methods without the intervention of the researcher (Hatch, 2002). The data collected in this way consists of existing texts (Dolan, 2009; Merriam, 2009). Archives (bank accounts, patient records, member records, etc.), physical traces (typefaces, fingerprints, etc.), various registration documents (electricity, natural gas and water meters, etc.), internet search engines and web pages are the types of data in question. (Erkuş, 2009). While document analysis often serves as a complement to other research

methods, it is also used as a separate/independent method (Bowen, 2009; Saldana, 2011). When the researches are examined, it is seen that there are many studies in which the document analysis method is used alone (Akşit, 2019; Al-Sharabi, 2019; Bakankli, 2019; Beşel & Yardımcıoğlu, 2017; Böyük, 2017; Çamurcu, 2019; Çelik, 2016; Doğancı, 2018; Fişekcioğlu, 2019; Karaca, 2018; Nas, 2019; Özdemir, 2019; Şahin, 2018). The website www.sikayetvar.com is a platform that tries to protect consumer rights by publishing many shopping-related complaints. In this platform, the complaints of the supporters of the four sports clubs (Beşiktaş, Fenerbahçe, Galatasaray and Trabzonspor) with the most fans in Turkey were examined, and their satisfaction with the fan stores was examined within the framework of cause-effect relationship.

Research Group

Density sampling, one of the purposeful sampling methods, was used to determine the research group. 569 complaints filed between 01.01 – 31.12.2021 on the website of Kartal Yuvası, Fenerium, GS Store and TS Club, which are the fan stores of Beşiktaş, Fenerbahçe, Galatasaray and Trabzonspor clubs, were examined.

Data Collection Tools and Data Collection

Profile accounts of www.sikayetvar.com site, Kartal Yuvası, Fenerium, GS Store, TS Club were used to collect data. The data source website protects personal data by hiding identity information and using only the complainant's name. Complaints are anonymous information as a public data source. According to the 5th article of YÖK Scientific Research and Publication Ethics Directive, the use of anonymous information in studies cannot be considered as an ethical violation.

Credibility and Transferability

When evaluating qualitative research, credibility stems from the intended research purposes, and credible research decisions are those that are consistent with the researchers' purpose (Patton 2002). It is assumed that the muhtars, who constitute the study group of the research, are the people who can represent the people the most. Because the headman is the person chosen by the people who are experiencing the same problems in the same environment. It is not necessary to be a candidate and supporter of a political party in the election of mukhtar. In this respect, it is the most democratic representative of the people. As the smallest representative of the management unit, the headman has the opportunity to establish closer relations with the public and to see the expectations and satisfaction in the best way.

Transferability, a type of external validity, refers to the degree to which the phenomenon or findings described in one study are applicable or useful to theory, practice, and future research (Lincoln and Guba 1985). The methodology of the research is equally suitable for application in other provinces. The research is suitable for comparing data from different provinces. It is possible to support the obtained data with the results in the literature.

Analysis of Data

Complaint texts were analyzed by three field experts and coded. Common codes were determined by re-reading and evaluation by the researchers. The coding process was done with the inductive method according to the concepts extracted from the data. The codes were brought together and examined and categorized according to their common characteristics. Themes that could be the main titles of the codes obtained were determined. The themes and codes obtained through content analysis are presented in a figure showing their relationship with each other.

The data obtained were compared with the results of the survey evaluation conducted by the www.sikayetvar.com platform regarding 569 complaints. Descriptive analysis was conducted to strengthen the validity of the research. The most representative quotes were selected to give readers the opportunity to visualise the current situation.

FINDINGS

The two themes determined after the complaints examined are “Customer Relationship Management” and “Product”. When the data obtained were examined, it was seen that customers complained more about the "customer relationship management" theme. It was determined that the complaints focused on customer service, order preparation, website sales, cargo, personnel, refund, defective goods and printing error codes. Themes and codes are shown below.

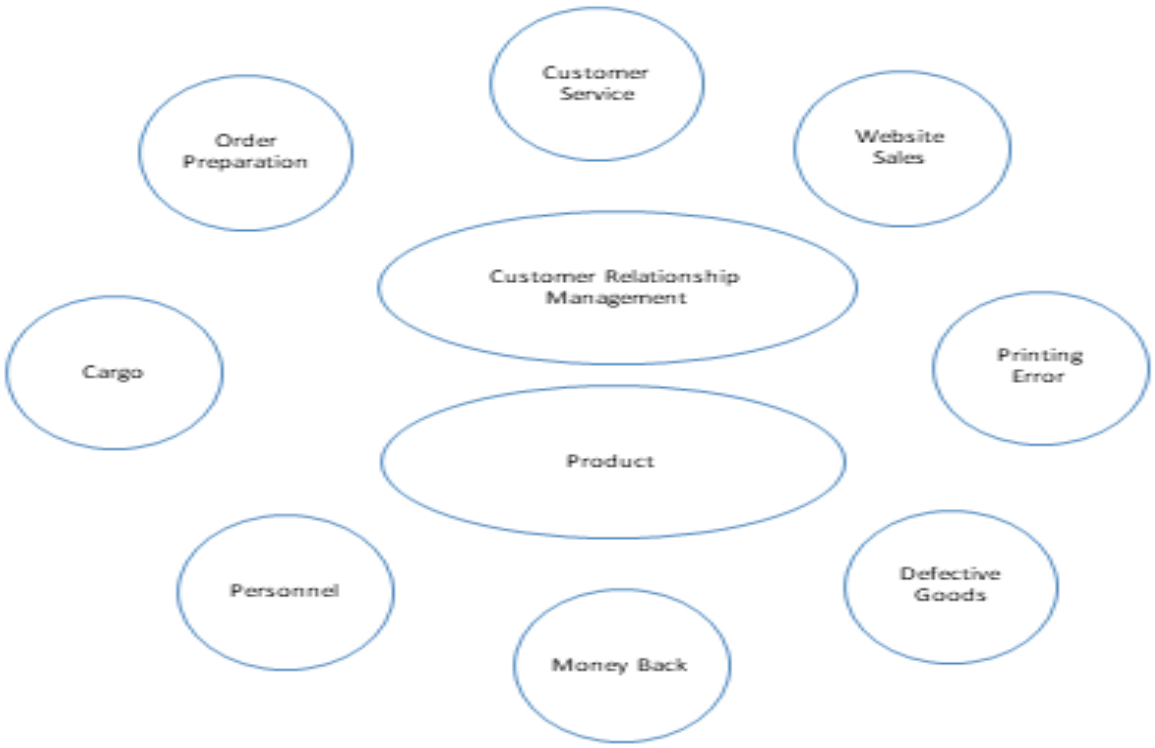


Figure 1. Themes and codes

Complaints about customer service, which is the complaint code that receives the most complaints, vary. Various problem contents have been identified related to not being able to reach customer services, getting late answers, not getting enough information, and lack of information via invoice, e-mail or phone message. Complaints under the heading of customer services are related to written processes and systemic situations without contacting the personnel.

Complaints about the order preparation code are related to the fact that the brands deliver the orders to the customers according to their wishes, carefully and on time to the contracted cargo. The fact that the package is torn, the desired gift package is not included in the package or the cargo is delivered in a longer time than the promised time causes customers to complain about this issue.

Complaints about the website/sales code are actually in two parts. Complaints about the website and about the shopping made over the internet were created under a single heading because they are too dependent on each other or because it is not possible to distinguish between the expressions. In online shopping; It has been observed that customers who have complaints about the website's not being technically useful enough, stock display problems, problems during payment, inability to track cargo, order cancellation, live support, complain about their internet shopping and website.

It has been seen that there are various topics such as the complaints about the code titled staff attitudes, the use of accusatory language, the misunderstanding of the problem, the unwillingness to solve the problem, misinformation and lack of courtesy. Since verbal and written communication is generally established, it has been evaluated that there may be attitudes and behaviors that are prone to misunderstandings. Customers primarily blame the staff when there is no solution for unresolved complaints. Since the first addressee of the complaint is the personnel, the fact that the relevant personnel does not have sufficient equipment in customer relations management may cause these complaints.

It has been observed that the complaints about the money return code are divided into various topics such as the stores not wanting to refund money, directing them to another product instead of a refund, taking too long to return the Money. Complaints titled defective goods; It has been observed that the purchased products are listed under different headings such as not having the desired features, sending different products than those on the internet page, packaging errors and loss of feature after washing.

Complaints under the cargo code are related to the process from the delivery of the packaged product to the cargo to the customer. It has been seen that there are some complaints such as late delivery, not getting information from the cargo company, indifference of the cargo company, cargo fee problems and damage to the package in the cargo.

Complaints with the title of printing error are related to the printing of the name, logo, etc. requested by the customer on the product to be purchased. It was observed that the complaints were concentrated under the printing error code, such as the refusal of the printing request, an error in the printing process, an error in the printed product.

Apart from the problems experienced by the fans who shop, there are other main complaints about the fan shops, such as product variety and expensiveness. Despite these and similar problems, the problems experienced by shoppers are included in the research. The codes that receive the most complaints on the basis of brands and the ratio of codes to all complaints are presented in the table below.

Table 1. The Complaint Code and Number of the Brands

Brand	Complaint Theme	Number of Complaints	%
Kartal Yuvası	Defective Goods	34	35
Fenerium	Website Sales	64	29,4
GS Store	Order Preparation	32	23,2
TS Club	Customer Service	47	63,5

It is noteworthy that the complaints of the fans of the four clubs are concentrated on different topics. This may mean that the fan profiles of the clubs that shop at licensed product stores are different. The results of the survey conducted by the www.sikayetvar.com website regarding 569 complaints about the four stores that are the subject of research are presented in Tables 1-6.

Table 2. Number of Complaints Received (NCR), Number of Survey Responses (NSR) and Survey Response Rate (SRR), Customer Satisfaction Rate (CSR)

Brand	NCR	NSR	SRR %	CSR %
Kartal Yuvası	109	55	50	29,5
Fenerium	234	101	43	31,7
GS Store	149	73	48	20,9
TS Club	77	25	32	29
Total	569	254	43	Average 27,7

A questionnaire is sent to each complainant for a more detailed evaluation of the complaint process. In this survey, there are a number of questions about the reasons for the customer's dissatisfaction / dissatisfaction, the reasons for churn. Since filling out the questionnaire is not compulsory, the rate of filling out the questionnaire is lower than the number of complaints. For this reason, it should not be overlooked that the rates of dissatisfaction/dissatisfaction and churn are based on the number of surveys, not the number of complaints.

It has been observed that the average satisfaction rate regarding customer complaints in the fan stores of Turkey's largest sports clubs is as low as 27.7%. When the survey response rates are examined, it has been seen that the number of complaints of TS Club is quite low compared to other brands, which creates a difference in some results. It is noteworthy that while the average satisfaction of the three clubs due to complaints is around 30%, the GS Store is around 20%.

Table 3. Subject Analysis of E-Complaints Received in Stores (%)

Konu	Kartal Yuvası	Fenerium	GS Store	TS Club	Average
Cancellation-Return-Exchange	10,3	11,3	13,8	25	15,1
Size-Size	5,1	12	9	16,7	10,7
Product Quality	9	12	13,1	8,3	10,6
Price-Invoice-Account-Payment	9	8,3	8,3	16,7	10,5
Company Contact	14,1	11,3	11,7	-	9,2
Defective Product	9	7,5	8,3	8,3	8,2
Internet Sales	5,1	9	7,6	8,3	7,5
Staff Behavior	12,8	8,3	5,5	-	6,6
Deformation	7,7	6,8	4,1	-	4,6
Missing-Wrong Product	2,6	2,3	4,8	8,3	4,5
Product Packaging	2,6	2,3	1,4	8,3	3,6
Failure-Non-Operation	3,8	2,3	3,4	-	2,3
Web site	2,6	3	3,4	-	2,2
Campaign-Lottery-Gift	-	3	3,4	-	1,6
Physical Environment	3,8	-	0,7	-	1,1
Warranty-Duration Coverage	2,6	0,8	0,7	-	1
Mile Points	-	-	0,7	-	0,1

The www.sikayetvar.com website team was able to group these issues thanks to an algorithm they applied. This algorithm; collects the relevant words from the complainants' comments under appropriate headings. When a category was made according to the subjects mentioned in the complaints, it was revealed that the most mentioned subject in the complaints was "cancellation-return-change". However, since TS Club's high rate of complaints may be misleading due to the small number of complaints in this regard, when the highest rates of the other three stores are taken into account, the title of "company communication" has been the subject of the most complaints. Since it is not known how the data obtained from the questionnaires were evaluated and how these titles were created, it may be possible to interpret this table in different ways. Since the complaining customers are not separated as the customers who go to the store in person and shop from the internet store, the content of the complaints may differ. It is difficult to predict what kind of complaints are collected in the company communication title. As can be seen in the sample complaints below, complaints about different issues such as communication problems with company personnel or insufficient information on the website may be under this heading.

"On 28.10.2021, we purchased a children's jersey from your Kartal Yuvası Store in Üsküdar Selami Ali Efendi Street. The shirt we received as a gift was small in size. But because we lost the invoice, the store did not change the product. We called 08503991903 Kartal Yuvası on the date of 17.11.2021 and informed them, we asked. I may have lost the invoice, we bought the product with a credit card, I passed it, I don't understand why they don't make changes on the label. If there is no large-size product, a refund should be made, then please replace it as a human and they don't even call." - C 7.

"I canceled my order and my refund still hasn't been made. I'm trying to connect to the customer representatives, it's like they couldn't complete their conversation with the 2 people in front of me for half an hour. They definitely need to have a say in this problem, if we can't talk to customer representatives and deal with these issues, why is there customer service?" - C 468.

Table 4. Reasons for Dissatisfaction of Customers (%)

Reason for Dissatisfaction	Kartal Yuvası	Fenerium	GS Store	TS Club	Averaage
Communication	27,3	33	1,4	26,7	29,6
Insolvency	27,3	25	29,5	36,7	29,6
Duration	17	17	17,1	20	17,7
Disappointment	17	14	13,3	16,7	15,2

Customers who gave 1,2 and 3 stars on the website www.sikayetvar.com were evaluated as dissatisfied customers based on the answers given according to the five-star rating scale, where customers evaluated the process with the store after complaints. A questionnaire including the reasons in the table was sent to the dissatisfied customers in order to determine the reasons why they were not satisfied. The results obtained are shown in the table. As a result of the customer dissatisfaction surveys, the expressions "did not contact" and "could not provide a solution" were the most common on average. This situation is in line with the "company communication" heading, which is the most frequently complained about shopping complaints.

"I ordered a new season shirt from Fenerium, UPS ® was sent to the cargo, my cargo was sent back to the company before it was delivered. I reached it via e-mail, but no response was received. It's been 1 month, they have bad customer service, even with my first order, I am greeted with this attitude! Although I sent an e-mail 3-4 times, there was no answer, we reached over the phone and it was said that it was delivered to the cargo"-C 185.

"I ordered the jersey for 2 weeks. It hasn't arrived yet, I'm calling the representative of the form where I can follow up or find out where it is. I couldn't get an answer to the question. Where can I learn how to solve this problem, where will I get help? - C 280.

Table 5. Reasons for Satisfaction of Customers (%)

Reason for Satisfaction	Kartal Yuvası	Fenerium	GS Store	TS Club	Average
Problem solved	50	41,8	34,5	36,4	40
Treated relevant	16,7	23,2	27,6	27,3	23,7
Polite Staff	16,7	16,2	20,7	18,2	17,9
Duration	11,1	11,6	13,8	18,2	13,6

A questionnaire containing the reasons in the table was sent to the customers who evaluated their complaint processes according to the 5-star scale, in order to determine the reasons for their satisfaction by evaluating the satisfied customers as those who gave 4 and 5 stars. According to the results of the survey, customers whose complaints were resolved somehow expressed their satisfaction. The rate of those who are satisfied with the speed of resolution of the complaint shows that the solutions are not at the desired speed. The sum of the relevant approach rates of the stores could not find the average satisfaction. This is in line with the headings "did not contact" and "did not offer a solution", which are among the top causes of dissatisfaction of complaining customers. As stated by the complainants below, the main factor determining satisfaction in shopping and resolving complaints is the interest of store customer service.

"I am going to file a complaint about the service at Fenerium. My husband, my father and I are Fenerbahce as a family. I went to Fenerium store in Fethiye to buy a Christmas present for my wife. And of course, I couldn't decide right away. "I think so too," she said in a low tone when I told the female staff member in the store that she would think about it. Due to the sensitivity in my ears, I can hear even the highest pitched sounds. What a disrespectful act. Far from it! I never liked it." - C 99.

"My relatives from Germany liked the product in Elazig BJK store and they were told that the product was on sale. Then when we went to the cashier and extended the credit card connected to the Berlin bank, we were told that the product was not discounted. They are trying to treat people like tourists and make them victims. I condemn this behavior of the staff, I hope this complaint reaches the necessary places." - C 31.

Table 6. Customers' Churn Rate

Kartal Yuvası	Fenerium	GS Store	TS Club	Average
%56,5	%61,9	%70,8	%52,2	%60,3

The concept of churn can be explained as follows: Customers voluntarily or involuntarily abandon the use of existing services and/or shift to rival companies' offers. Customer abandonment behaviors can manifest in different ways: some do not use the existing service for a long time, some delay payment of service fees, and some choose to unsubscribe from the service altogether. Generally speaking, we can think that customer loss occurs when a customer stops the subscription and therefore does not intend to continue using the service (Kim et al., 2017).

The concept expressed as being churn is that the customer does not shop from the same business again or is reluctant due to a negative experience. Although it is expected that shoppers from fan stores will show higher customer loyalty by thinking like fans, unlike classical customer behaviors, the data obtained indicates a very high churn tendency, that is, a tendency to give up. The low rate of TS Club customers can be interpreted as the low number of complaints or as more fan loyalty. It can be stated that GS Store customers have lower fan loyalty and higher consumer awareness.

"I was shopping on the GS Store site. There was a buy 2 pay one campaign. I added it to my cart. I returned to the product screen so that I could buy 2 more pieces from the campaign. When I added and went to the basket, my basket amount doubled in an instant. How is this discount? You will return because the discount is over. It will be my last purchase, I probably lost confidence"- C 347.

"My girlfriend, who came to Istanbul from Germany, bought me a jersey from Kartal's nest. She is gift boxed. And she sent it to me. I wanted to change the jersey because it was too big. Since there is no Kartal Yuvası store in my city, I reached them by phone. I requested an exchange but was denied. They said that there is no exchange with cargo, but that I can bring it there and change it. Almost all of the employees speak arrogantly. Irrelevant. Koskoca Beşiktaş is managed with such poor quality. Year 2021 still no change with shipping. Especially the speaking style of the female assistant manager at Vodafone ® park Kartal Yuvası store made me feel alienated from Beşiktaş."- C 12.

Table 7. Reasons for Churn

Reasons for Churn	Kartal Yuvası	Fenerium	GS Store	TS Club	Average
Approach-Trust	10	20,5	20,5	40	22,5
Support after sale	16,7	12,5	12,5	40	20,4
Service Quality	13,3	25,6	25,6	-	16,1
Product Quality	13,3	7,7	10,3	-	7,8
Price-Pricing	10	10,3	10,3	-	7,6
Easy access	10	10,3	5,1	-	6,3
Product variety	13,3	5,1	2,6	-	5,2
Physical Environment	10	5,1	-	-	3,7
Other	3,3	2,6	7,7	20	8,4

According to the data obtained, when the average of the four big clubs is examined, it has been revealed that the most important reason for those who state that a customer will not shop at the store again is the title of "approach-trust". This situation shows that those who manage customer relations are not able to show an approach that will give confidence to the customer in the shopping and complaint processes. Although other reasons for shopping preferences such as price and product quality are problematic, the lack of interest expressed

under the title of "approach-trust", which is ignored due to the fan profile, drives customers away from the stores and therefore from the fan profile that will support the club.

The second most important churn title “after sales support” states that customers shop by thinking like fans, they will want to feel safe after shopping, and maybe they will give up their shopping habits and thinking like fans while waiting for this situation as a privilege, due to indifference.

“I ordered Beşiktaş new season jersey on Kartal Yuvası website and my parcel arrived within a few days. I wore it once after I came to the form and realized that there was a mistake in the jersey. It is most likely that after the printing of the jersey, there was a fold and the colors of the jersey were mixed. After realizing this situation, I created a return request on the site. In the claim conditions, it was stated that there was a 30-day return/cancellation period, and the product had only been received for two weeks. About 2 weeks have passed since I submitted the request, and still no response to my return request. Believe me, I would not expect such a thing from Kartal Yuvası, the official seller of the great Beşiktaş community. I'm posting here as a last resort. I will think twice before buying something from Kartal's nest again.”- C 15.

“I bought a men's bracelet from Fenerium, but the magnet is broken and I can't find the poor quality plug. I went to Fenerium, they say they do not accept the product without a receipt, they are making the customer a victim as a fan. They do not accept the product they sell. I will definitely not shop anymore”- C 141.

According to the results of the survey organized by the website www.sikayetvar.com; customers complain about the indifference of the store managements and the lack of value given to them in the complaint processes related to the problems they experience while shopping at fan stores that sell licensed products.It is seen that the attitudes and behaviors that cause these evaluations are generally related to the subject of communication.When the survey results are compared with the content analysis results made by us, it is seen that there are similar results. The reasons for the complaints expressed indicate that the customer relations managements do not perform the necessary functions. It has been seen that insufficient information about products and processes and the implementation of actions contrary to the information given are the reasons behind the complaints.

DISCUSSION & CONCLUSION

Our research revealed the need for more work in the field of sports clubs and fan relations. It has been revealed that sports clubs do not have sufficient knowledge about the structure, functioning and benefits of fan stores and need more scientific studies. It has been observed that customers who shop at sports clubs' fan shops are also fans and lack the necessary knowledge and care about the differences between fan-customer profiles.

The results of the research, similar to previous studies, revealed the necessity of improving various e-service dimensions in order to ensure customer satisfaction and loyalty (Teck et al., 2011; Will, 2009; Ismail & Hussin, 2016).

Lee et al. How can more profits be made through licensed products in (2021) research? They sought an answer to the question with a case study, and as a result one of the theories put forward was symbolic interactionism. The basic premise of symbolic interactionism is that individuals attribute meaning to products or events. Looking at licensed products through this lens, Lee explains the licensed products as follows: when clubs start selling their branded products, they are essentially selling the meanings attributed to the products, not the product

itself. Understanding these meanings should be the goal of sports managers. In addition, Lee's investigations found that consumers' psychological attachments resulting from their intrinsic commitment to sporting events can influence their purchasing behavior.

While complaints about products and services are in the first place in the literature (Aylan et al., 2016; Şahin et al., 2018; Alrawadieh and Demirkol, 2015; Nazlı and Arbak, 2020), the fact that product-related complaints are less important in research results is related to the fact that sports club stores have a fan profile. As a fan, the customer differs from the classical customer behavior and expectations.

The reason why the complaints about the website and accordingly the complaints about the order processing are not seen as a vehicle malfunction is the thought that customer service indifference lies behind this technological face. In the study of Arpacı and Akhisar (2016), in which they examined e-complaints about tour operators, the internet pages related to the operators (52.3%) are seen as the most common complaint.

In studies that concluded that the websites we identified in our study could not meet the needs of users (Tumijan et al., 2022; Ajay Kaushik & Potti Srinivasa, 2017; Janda et al., 2002; Chen & Cheng, 2009; Wu & Hsu, 2015), the usability feature of the website was reported to be positively correlated and the main factor for quality on the website.

Staff attitudes are perceived as a feature that shows the value that businesses give to customers. The quality of personnel attitudes reflects the quality of the enterprise. Staff attitudes are also the subject of complaints about customer relations. In the study of Argan and Arıcı (2019), in which the e-complaints of customers in the field of health were examined, the most important topic was the indifference of the personnel. In Sangkpikul's (2022) study of e-complaints about Thai SPA centers, the most common complaints were inadequate staff skills (33%) and poor customer service (17%). In Park (2005)'s study examining e-complaints about Korean Carrefour, staff attitudes (20.9%) are in the first place.

It is seen that the customers do not complain about the poor quality or defectiveness of the product. The vast majority of customers complain of lack of interest after making a complaint about the product. Customers have the impression that there is no resolution effort regarding their complaint. Although the customer's complaint is under the product title, it is seen that the main reason for the dissatisfaction is related to customer relations management. In the researches conducted by Kayabaşı (2010) and Bal (2014), it has been seen that the most common complaint of customers is product delivery.

Store managements fail to realize that the customer can be satisfied even after a torn or poor quality product is sold to the customer. If fan stores' customer relationship management weren't problematic, the number of complaints we've investigated on these issues would probably have been much lower. Because the customer's grievance about the product could be eliminated with a good customer relationship management. The subject of "cancellation-refund-change", which is at the top of the subject analysis, is also not accidental. Since the customer has a problem with his product, he expects a solution from the brand, and because he cannot find a solution, his complaint changes size and leaves the product and goes to customer relations management.

In the researches, it has been found that delivering the products and services to the customers correctly and on time or dealing with the returned products and services are the two main factors affecting the satisfaction of the online shopping customers (Hsu, 2008; Reibstein,

2002). In the studies conducted by Norizan and Abdullah (2010) and Reibstein (2002), it was found that post-purchase customer service has a significant effect on satisfaction (Bayır, 2022).

Complaints about the website were among the most intense topics. When the site design and update is not done enough in internet shopping, many problems can arise. For this reason, problems with the website are actually the main problem. It is known that the care and attention required to satisfy the customers coming to the store is expected for digital media.

Many experienced and successful businesses using the Internet have also begun to realize that it is not only the website and low price as the main determinants of success and failure, but instead the need to concentrate on electronic service quality (Zeithaml, 2002).

Just as the atmosphere in physical stores has an impact on customers, so does the atmosphere of the e-store. Visuals, music, diversity, spaciousness and communication of the personnel in the physical store are some of the reasons that affect the customer's satisfaction / dissatisfaction with the store. These factors affect the purchasing process of the customer. In e-shops, the atmosphere also affects the purchasing process of the customer. Ensuring that he spends more time on the site positively supports this process. Therefore, brands need to create a good e-shop atmosphere by taking into account today's demands and conditions. How the products are presented in the e-shop can also enable the customer to complete the order. After determining what the consumer wants, it is time to ensure that the e-shop is useful, entertaining and up-to-date. For this reason, the software of the e-store should be prepared in line with the expectations of the consumer, at least as much as the physical stores (Ruziye & Sezer, 2015).

In the e-complaint investigations we have conducted for Turkey's four biggest clubs, it has been observed that the sports club stores are inadequate in responding to the complaints of their customers and in finding solutions to their problems. During the research process, it was concluded that the clubs did not have a sensitivity to protect this bond. Rather than the clubs trying to find a solution to the complaints made, it was determined that the stores could not even fulfill their own responsibilities.

A fan shopping at their favorite club store as a customer is different from a customer walking into the store and shopping. In the first, there is emotional attachment and the purpose is mostly to show belonging, to show one's side. Therefore, club stores are one step ahead of other stores. However, in order to use this advantage, it should constantly remember its emotional connection with customers and always act in this dimension in complaint resolution.

Regarding the fan stores (Kartal Yuvası, Fenerium, GS Store, TS Club) that sell licensed products of the four sports clubs (Beşiktaş, Fenerbahçe, Galatasaray and Trabzonspor) that have the most fans, have won the most league championships and have the most debt in Turkey, The fact that half of 569 customers with complaints filled out a satisfaction survey, that those who filled out questionnaires could not find a solution to their complaints as they wanted, revealed the necessity of questioning their understanding of store management.

Considering that not every customer who leaves these stores satisfied does not complain, it is not possible for these businesses to make a profit and contribute to sports clubs. The sales and profit figures that will test this evaluation could not be reached. It is noteworthy that although the companies of the four sports clubs are listed on the stock exchange, they do not declare their financial statements. It is important for the sports economy that the research model is carried out for different sports clubs and using different complaint platforms. Sports clubs should be enabled to share data sources for these researches.

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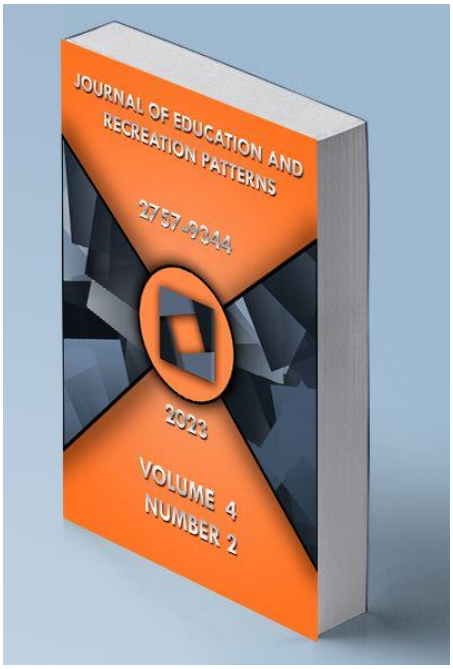
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Fatih ERİŞ[1]

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[1] Dr. Fatih Eriş, Van Yüzüncü Yıl University, School of Physical Education and Sports, fatiheris@yyu.edu.tr
https://orcid.org/0000- 0002-2301-6801

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Fatih Eriş[1]

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ABSTRACT
The aim of this study was to compare the relationships between some motor skills in the upper extremity region of 20 male volleyball players aged 15-18 years, competing in the 8th Group of the 2nd League of the Turkish Volleyball Federation, with and without suspended and unsuspended Push-Up (PU) bosu ball exercises applied for 3 sessions every week for 8 weeks. In addition to the normal training program, the first group was trained with unsuspended (PU) and the second group was trained with suspended (PU) for 8 weeks. Both groups performed Medicine Ball Throw to evaluate upper extremity strength, Closed Kinetic Chain Upper Extremity Stability Test to evaluate endurance and Upper Extremity Y-Balance Test to evaluate balance before and after the training program. As a result of this study, the difference values of the test results before and after the training were compared. A significant difference was found between the groups in the upper extremity right and left arm 0,000, Y Balance Test Medial dominant 0,000, and non-dominant 0,004, Superolateral dominant and non-dominant 0,000, Inferiorlateral dominant 0,024 and non-dominant 0,000, chest and overhead 0,000 Health Ball Throw test difference changes ($p<0,05$). Performing the applications used in classical training methods on unstable grounds can increase the motivation of volleyball athletes and contribute to their performance. As a result, it seems that unsuspended and suspended (PU) exercises can increase the levels of medicine ball throwing, closed kinetic chain upper extremity stability test and upper extremity Y-balance test with the exercises applied, although the levels are different. Further studies on the subject by increasing the number of participants in different groups and using electronic devices will be useful.

Keywords: Bosu Ball, Motor Skills, Push-Up, Upper extremity, Volleyball

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INTRODUCTION

As in the world, the interest in volleyball sport is increasing day by day in our country. Accordingly, the number of studies aimed at increasing the performance of athletes is also increasing visibly. Volleyball is a sport played by two teams on a playing field divided into two by a net. The aim of this sport is to pass the ball over the net, send it to the opponent's area, try to kill the ball there and prevent the opposing team from achieving the same goal. The technical movements used by players in volleyball during a competition are mainly;

- Serving,
- Header pass (defense),
- Finger rust,
- Dunk,

- It can be grouped as block applications (Yılmaz, 1997; Yeniçeri-Hindistan, 1998),

In short, we can define volleyball as a sport in which the feet, trunk and arms are used in coordination. But we can say that the final performance is determined by the upper extremity performance.

PU is a popular exercise to increase the strength and hypertrophy of the upper limb muscles. PU is also considered as a standardized measurement method for assessing upper extremity muscular endurance (Dillman et al., 1994). PU is an exercise using body weight to strengthen the triceps brachii and shoulder girdle musculature (Kisner et al., 2017). Standard PU is an exercise performed by keeping the knee joint, hip joint, pelvis and spine in a straight line from the head to the feet, flexion and extension of the shoulders and elbows, and protraction and retraction of the scapulae. PU is a very effective exercise for shoulder stability, upper body strength, core stabilization and hip flexor extension. During PU, body weight is used to strengthen the triceps brachi and shoulder girdle muscles.

The PU exercise is usually performed on a stable surface with the hands at shoulder width. The exercise can also be performed on unstable ground. Since the stabilizer function of the muscles tends to develop more during resistance exercises on unstable ground, it can also improve balance and greater force, torque and power can be achieved during exercise (Behm and Anderson 2006). Most of the studies comparing PU exercise on unstable ground using tools such as Swiss balls, air discs, bosu and balance boards with the traditional approach suggest that it increases the activity of the shoulder girdle and upper arm muscles more (Cogley et al., 2005).

Suspension exercises (SE) is one of the newest forms of stabilization training that allows the user to work with their own body weight with the help of ropes and handles suspended at a fixed point at height (Snarr and Esco, 2013). The RedCord Suspension System (RSS) is an innovative suspension training system used for a variety of purposes ranging from athletic performance to general conditioning and rehabilitation. If the muscle strength of the individual can provide the PU movement with the RSS, which provides instability, this position is taken and the handles at the end of the rope fixed upwards are held with the hands and body alignment is ensured with the feet on the ground. For PU with RSS, the starting position is taken first. Then the individual is positioned on his/her toes, hands shoulder-width apart and elbows in full extension, maintaining full body alignment. Starting in this position, the body smoothness is maintained until the elbows are 90º flexion. After reaching this position, return to the starting position and one repetition is performed (Bayrak, 2018; Bettendorf, 2010).

RSS can provide rapid results for all individuals who want to perform better, build strength, prevent injury, avoid pain or simply stay active. It aims to maximize the use of the training or treatment area by using the individual's own body weight as resistance. RSS is a

new treatment and neurocontrol method developed to facilitate neuromuscular control of the extremities and trunk and to increase tonic contractions (Kirkesola, 2009).

RSS is designed to strengthen the deep core muscles that stabilize the spine and the large muscles that elicit motor movement and mobilize the joints involved in the movement. RSS allows the individual to move in any plane with static and dynamic resistance using ropes, springs or their own body weight. These movements can also be achieved using various equipment and accessories. In general, RSS is a new exercise method designed to increase strength and flexibility, provide joint mobilization and improve performance and technique.

When we examined the literature, it was seen that most of the studies involving PU exercises using suspension system investigated the muscle activation levels around the shoulder and the effects of vibration application (Beach et al., 2008; Borreani et al., 2015; Calatayud et al., 2014; Dannelly et al., 2011; De Mey et al., 2014; Kim et al., 2014).

In the light of the information given, it can be said that the superiority of these two exercise forms over each other is still controversial since the number of studies on the effects on balance strength and endurance of young volleyball athletes is limited, although there are studies examining PU strengthening exercises performed without suspension and using suspension system with electromagnetic system. In addition, the number of studies determining the performance of volleyball athletes is limited. In this context, this uncertainty constitutes the problem of this study.

In order to eliminate this uncertainty, the aim of this study was to compare the effects of 8-week suspended PU bosu ball strengthening exercise training and non-suspended PU exercises on some motor skills in young volleyball athletes.

METHOD

Research Design

The training was started 3 days a week, 3 days a week, without affecting the ongoing training program of Tuşba Youth Center Club, which competes in the 8th Group of the men's 2nd League of the Turkish Volleyball Federation, after the movements were explained to both groups and the mistakes were corrected.

The 1st group was trained in the first two weeks of PU exercise training without suspension with repetitions and sets of 8x2, 10x2, 8x3 and 10x3, respectively. From the 3rd week until the end of the 8th week, both groups performed PU exercise with 3 sets and 12 repetitions.

In the 2nd group, the PU movement with suspension (bosu ball) was performed for 8 weeks with 3 sessions per week and at least 1 day intervals in order to eliminate the fatigue effect. In the first two weeks, the number of repetitions and sets were 8x2, 10x2, 8x3 and 10x3 for the adaptation of the suspended PU bosu ball exercise. From the 3rd week to the end of the 8th week, both groups performed PU exercise with 3 sets and 12 repetitions. Thus, both groups participated in 24 units of training.

Study Group and Sample

The model of our study is experimental. In our study, 24 adolescent male volleyball athletes between the ages of 15-18 years, who were competing in Turkey Volleyball Federation Men's 2nd League 8th Group, were included in the study. During the training process, 4 athletes were excluded from the study because they could not participate in the training regularly due to different injuries they experienced. After obtaining permission from Tuşba Youth Center

Club, a parental consent form was obtained from the athletes under the age of 18 and a consent form was obtained from those who were 18 years old.

Demographic Information: Age, height, body weight, age at the start of sports and upper extremity length demographic information were obtained from the participants.

Closed Kinetic Chain Upper Extremity Stability Test (CKCUES Test): CKCUEST is used for the evaluation of upper extremity strength, endurance and closed kinetic chain.

The test was performed as follows: In the push-up position, the distance between the two hands was adjusted to 90 cm, then one hand was extended towards the other hand and the number of repetitions completed within 15 s was recorded (Figure 1). The test was repeated 3 times. A 45 s rest period was given between tests to avoid fatigue caused by high-intensity activity (1:3 activity/rest ratio). In cases where the feet were off the ground during the tests, significant flexion of the hip occurred and the dorsal dorsal of the other hand was not touched, the test was considered invalid and repeated after a 45 s rest. The 3 tests were recorded and the average of these 3 values was taken as a score and the results were obtained by dividing this average by the height of the individual (Ellenbecker and Davies, 2000).

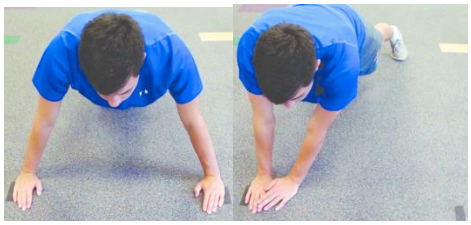


Figure 1: CKCUES Test

Upper Extremity Y-Balance Test: The YBT is a simple balance testing method used to identify injury risks and functional asymmetries in athletes that have been established as a result of scientific research. Both upper extremities are tested separately. In the study, the participants were shown how to perform the test in all directions 3 times for both upper extremities for the purpose of testing. Afterwards, the test was applied and performed in medial, inferolateral and superolateral directions (Figure 2). After the individual was allowed to rest for 45 seconds, the measurements were repeated for the other arm. The average of the 3 results obtained by reading the strip measurement on the edge of the reach indicator at the point where the farthest part of the arm reached the maximum reach distance was recorded in cm. The validity and reliability study of the test was conducted in 2012 (Westrick et al., 2012).

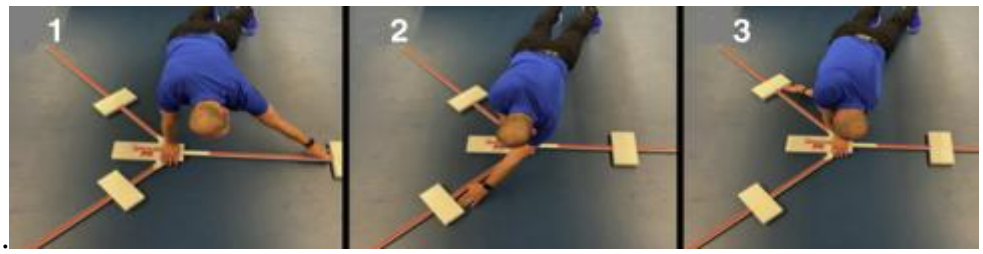


Figure 2: Upper Extremity Y-Balance Test YBT and its stages

Medicine Ball Throwing Test (MBT Test): It is used to assess upper limb explosive power. In this test, the distance measured by throwing a ball weighing 3 kg is taken. The

assessment was performed in 2 different positions. In the first test, the participant grasped the medicine ball with both hands and threw it forward over the head while sitting on a chair without armrests at a height where the scapula would remain idle, and the distance thrown was recorded in cm. The test was invalidated if the participants lowered the ball to the level of the nape of the neck and threw it, or if they threw the ball while leaning forward from the trunk, and the test was repeated. In the second test, the participant again took the same starting position, grasped the medicine ball with both hands, brought it to chest level and threw it forward and the distance was recorded (Figure 3.). When the throw was made by leaning forward from the trunk, the test was invalidated and the test was repeated. Necessary explanations were given to the participant before the test. The test was repeated three times and the total distance measured was averaged (Negrete et al., 2010). Harris et al., (2011) found the ICC value as 0.99 in their reliability study in elderly individuals.

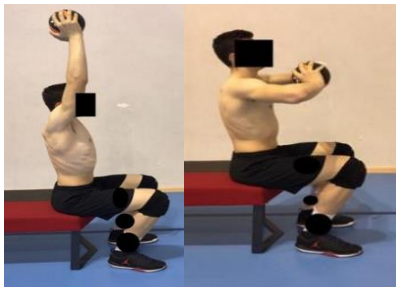


Figure 3: MBT Test

Analysis of Data

SPSS 23.0 (IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.) program was used for analysis. Continuous variables were expressed as mean ± standard deviation and median (minimum and maximum values), and categorical variables were expressed as number and percentage. Shapiro-Wilk test was used for the conformity of the data to normal distribution. When parametric test assumptions were met, the Significance Test of the Difference Between Two Means was used to compare independent group differences; when parametric test assumptions were not met, the Mann-Whitney U test was used to compare independent group differences. In addition, the relationships between continuous variables were analyzed by Pearson correlation analysis. Statistical significance value was accepted as ($p<0.05$).

FINDINGS

Table 1. Demographic Information of the Participants

All Participants (n=20)	**Weekly Training hours (7,5)**	**Dunk Handle (Right n=20)**
Variables	**$\bar{x}$**	**±sd**
Age	15,85	1,18
Height	177,25	7,71
Weight	63,57	6,78
BMİ	20,17	2,32
Age of starting sports	11,10	2,04
Arm length	86,05	4,90

When Table 1 is examined, a total of n=20 people with ages ranging from x̄=15.85±1.18, heights x̄=177.25±7.71, weight x̄=63.57±6.78, BMI x̄=20.17±2.32, age of starting sports x̄=11.10±2.04, arm length x̄=86.05±4.90 participated in the study. It is seen that the weekly training hours applied to the participants were 7.5 hours and the participants used the right arm as the dominant hand and dunking arm.

Table 2. Comparison of Test Values of the Groups Before PU Exercise Training

Variables	Group 1 (n=10) (without suspension)		Group 2 (n=10) (suspension)			
	Min-Maks	$\bar{x}$ ±sd	Min-Maks	$\bar{x}$ ±sd	*t*	p
Upper Extremity Stability Test Right	17-30	26,2±7,42	22-37	28,4±5,12	-,771	,450
Upper Extremity Stability Test Left	14-34	22,5±5,96	17-34	25,7±4,39	-1,36	,189
Medial Dominant	58-93	72,4±11,89	52-85	69,2±11,99	,599	,557
Medial Non-Dominant	50-100	73,3±14,81	59-81	69,4±8,97	,712	,486
Süperolateral Dominant	68-94	81,3±7,95	52-102	82,0±15,25	-,129	,899
Süperolateral Non-Dominant	45-67	56,2±7,46	45-74	58,1±8,90	-,517	,611
İnferiorlateral Dominant	43-55	50,6±3,92	39-89	55,9±14,76	-1,097	**,014***
İnferiorlateral Non-Dominant	66-116	85,1±15,89	66-107	85,2±11,39	-,016	,987
Medicine Ball Throw from the Chest	250-400	315,5±54,21	260-400	319,7±46,23	-,186	,854
Medicine Ball Launch Overhead	150-400	280,3±64,76	250-373	306,5±39,09	-1,095	,288

*Statistically significant difference (*p<0.05), t: Significance test for the difference between two means, Min: Minimum, Max: Maximum, x̄: Mean, sd: Standard Deviation.*

When the test values of the participants in Group 1 and Group 2 before PU training were compared in terms of variables, it is seen in Table 2 that the inferiorlateral dominance test showed a significant difference between Group 1 and Group 2 (p<0.05), while the other measurement variables did not differ between Group 1 and Group 2.

Table 3. Comparison of Test Values of the Groups After PU Exercise Training

Variables	Group 1 (n=10) (without suspension)		Group 2 (n=10) (suspension)			
	Min-Maks	x̄ ±sd	Min-Maks	x̄ ±sd	t	p
Upper Extremity Stability Test Right	22-38	29,00±5,55	26-38	32,10±3,98	-,771	,169
Upper Extremity Stability Test Left	16-36	24,50±6,16	20-38	28,80±4,70	-1,36	,097
Medial Dominant	59-93	74,10±11,45	57-86	72,50±10,79	,599	,752
Medial Non-Dominant	55-100	75,20±13,94	60-84	73,00±9,26	,712	,646
Süperolateral Dominant	71-95	82,70±7,46	58-104	85,00±13,63	-,129	**,002***
Süperolateral Non-Dominant	48-68	58,30±6,84	49-75	61,10±8,49	-,517	,683
İnferiorlateral Dominant	44-56	52,50±4,27	42-80	57,40±12,43	-1,097	,428
İnferiorlateral Non-Dominant	70-116	87,10±15,35	71-108	88,30±10,42	-,016	,840
Medicine Ball Throw from the Chest	255-408	322,20±54,32	270-410	330,40±44,42	-,186	,716
Medicine Ball Launch Overhead	159-400	286,70±62,93	252-373	312,80±39,84	-1,095	,282

*Statistically significant difference (*p<0.05), t: Significance test for the difference between two means, Min: Minimum, Max: Maximum, x̄: Mean, sd: Standard Deviation.*

The test values of the participants in Group 1 and Group 2 after PU training were compared in terms of variables. As a result of the comparison, it is seen in Table 3 that the superolateral variable in group 1 and group 2 variables showed a significant difference between the two groups (p<0.05), while the other variables did not show a significant difference between the two groups.

Table 4. Comparison of Test Values of the Groups Before and After PU Exercise Training

Variables	Group 1 *n=10*		Group 2 *n=10*			
	Mak/min	**$\bar{x}$ ±sd**	**Mak/min**	**$\bar{x}$ ±sd**	**t**	**p**
Upper Extremity Stability Test Right	20,89/31,50	26,20/7,42	25,02/32,97	29,00/5,55	-7,094	**,000***
Upper Extremity Stability Test Left	18,23/26,76	22,50/5,96	20,08/28,91	24,50/6,16	-10,860	**,000***
Medial Dominant	63,89/80,90	72,40/11,89	65,90/82,29	74,10/11,45	-7,804	**,000***
Medial Non-Dominant	62,70/83,90	73,30/14,81	65,22/85,17	75,20/13,94	-3,289	**,004***
Süperolateral Dominant	75,60/86,99	81,30/7,95	77,35/88,04	82,70/7,46	-8,107	**,000***
Süperolateral Non-Dominant	50,85/61,54	56,20/7,46	53,40/63,19	58,30/6,84	-5,928	**,000***
İnferiorlateral Dominant	47,74/53,40	50,60/3,92	49,44/55,55	52,50/4,27	-2,461	**,024***
İnferiorlateral Non-Dominant	73,72/96,47	85,10/15,89	76,11/98,08	87,10/15,35	-9,239	**,000***
Medicine Ball Throw from the Chest	276,71/354,28	315,50/54,21	283,34/361,05	322,20/54,32	-11,227	**,000***
Medicine Ball Launch Overhead	233,96/326,63	280,30/64,76	241,67/331,72	286,70/62,93	-6,850	**,000***

*Statistically significant difference (*p<0.05), t: Significance test for the difference between two means, Min: Minimum, Max: Maximum, $\bar{x}$: Mean, sd: Standard Deviation*

In our study, the difference values of the test results before and after the training were compared in order to compare the groups in terms of the effectiveness of PU exercise training in Group 1 and Group 2. In the PU tests, a significant difference was found between the groups ($p<0.05$) in the pre and post-training difference changes in the UEST right and left arm, ICT medial dominant and non-dominant, superolateral dominant and non-dominant, inferiorlateral dominant and non-dominant, STFT chest and overhead medicine ball throwing test. The difference in change in Group 2 was found to be greater than in Group 1 ($\bar{x}$ ±sd), (Table 4.).

DISCUSSION

In recent years, studies in which balance platforms are at the forefront of strength training have been visibly increasing. It is seen that these studies are aimed at determining the activation of muscles by electromyographic method and there are few studies evaluating motor performance. In order to overcome this deficiency, our study was conducted to investigate the effects of Suspension and Non-Suspension PU Exercises on stability, strength and dynamic balance in the upper extremity region of 20 male volleyball athletes aged 15-18 years, competing in the 8th Group of the 2nd League of the Turkish Volleyball Federation.

When the studies in which the closed kinetic chain upper extremity stability test was at the forefront were examined, Tucci et al., (2014) concluded that male individuals had 24.78 ± 3.19 and female individuals had 27.97 ± 3.84 touch numbers in the study in which 20 male and 20 female individuals participated in the reliability and validity study on the subject. Roush et al., (2007) found the mean and standard deviation values as 30.41 ± 3.87 in a study applied to male baseball athletes aged 18-22 years. Studies conducted on athletes active in sports where the upper extremity is at the forefront reported that volleyball players between the ages of 18-25 reached a touch number of 27.72 ± 3.68, and in the same study, the touch numbers of handball and tennis athletes were in the same direction as volleyball athletes (Audenaert et al.,2017). In our study, the pre-test number of touches in the PU group without suspension was 26.2±7.42 for the right arm and 22.5±5.96 for the left arm, while the pre-test number of touches in the PU group with suspension was 28.4±5.12 for the right arm and 25.7±4.39 for the left arm. After the 8-week exercise program, the pre-test number of touches in the PU group without suspension was 29.00±5.55 for the right arm and 24.50±6.16 for the left arm, while the pre-test number of touches in the PU group with suspension was 32.10±3.98 for the right arm and 28.80±4.70 for the left arm. Literature studies are in the nature of due diligence and reflect the current performances of the athletes. In this sense, the first and last measurements we obtained as a result of our study are generally in parallel with the literature. We can attribute this result to the fact that the individuals included in the studies in the literature and the individuals

included in our study were all trained individuals. If we analyze the second data we obtained separately, although the PU bosu ball with suspension is higher in the no-training group, the development in both groups is a significant situation. In general, we can attribute the positive contribution of the two different training programs to the closed kinetic chain upper extremity stability test, even at different levels, to the natural effect of the applied training.

The upper limb y-balance test is a test that evaluates unilateral dynamic upper limb function in a closed kinetic chain position. It allows comparison of dominant and non-dominant extremities in terms of dynamic balance functions. In the literature, there are several studies evaluating suspension systems and dynamic balance. Borms et al., (2016) found no difference between extremities in healthy athletes engaged in sports involving overhead activity. Similarly, Butler et al. (2014) found no significant difference between the throwing arm and the other arm in adolescent baseball and softball players. Myers et al. (2016) did not observe a difference between dominant and non-dominant extremities in their study of wrestlers and baseball players. In addition, Gorman et al., (2012) and Westrick et al. (2012) reported that there was no difference between extremities in healthy individuals. In a study of 60 volleyball players aged 15-18 years, a significant difference was found between 2 extremities only in the medial and superolateral direction. The results of the non-dominant extremity were observed to be higher (Sezik, 2018). Related to the subject Yarım, İ.., et al. (2020) In a study in which a total of 48 male and female athletes including Wrestling (n:13), Futsal (n:10), Taekwondo (n:15) and Ski Running (n: 10), a total of 48 male and female athletes participated in the study in which Y balance test was used. In the evaluation, there was a significant difference between Wrestling-Futsal, Futsal-Ski Running, Taekwondo-Ski Running sports branches in right anterior, between Wrestling-Futsal, Futsal-Taekwondo, Futsal-Ski Running sports branches in right medial, There was a statistically significant difference in balance parameters between left anterior Wrestling-Taekwondo, Wrestling-Ski running, Futsal-Taekwondo, Futsal-Ski running, Taekwondo-Ski running sports branches and left medial and Wrestling-Futsal, Futsal-Taekwondo, Futsal-Ski running sports branches. ($p<0,05$). Literature studies generally consist of studies aimed at determining the current state of active athletes. In our study, in the comparison of the test values before and after PU exercise training in the dominant and nondominant extremities between the groups, only in the Inferiorlateral Dominant extremity before exercise training, 0.014 and in the Superolateral Dominant extremity after PU exercise training, 0.002 ($*p<0.05$) showed a difference in two parameters, in general, it can be stated that the data overlap with the literature. The parallelism with the literature can be attributed to the fact that the studies were conducted in individuals who were active in sports.

If the studies on the medicine ball throwing test are examined; Bayrak (2018) randomly divided 32 healthy male university students into two groups as PU group without suspension (n=15) and PU group with suspension (n=17). PU exercise training was performed for 10 weeks, 2 sessions per week. The unsuspended PU group reached a mean value of 424.20±45.14 cm before the exercise training and 438.60±52.77 cm after the exercise training. In the PU group with suspension, the mean value of 427.17±51.07 cm before exercise training and 446.50±55.67 cm in the measurements made after exercise training. In our study, the mean value of 280.3±64.76 cm in the PU group without suspension before exercise training and 286.70±62.93 cm in the measurements made after exercise training. The PU group with suspension reached a mean value of 306.5±39.09 cm before exercise training and 312.80±39.84 cm after exercise training. In both studies, an increase is observed in the measurements taken before and after exercise. Although the study groups are different, we can attribute this to the positive response to the exercises applied in the training programs applied.

If the studies in the literature in which PU exercises with and without suspension are examined with muscle activation method are examined;

Sparkes and Behm (2010) included 10 males and 8 healthy females aged 18-30 years in their study to compare the effectiveness of stable and instability resistance strengthening programs. Participants were divided into two groups as traditional and instability resistance exercise training group. In the study, which included pre-test and post-test evaluations, they reported that there was no difference between the groups in terms of strength, static balance or functional performance. However, they reported that the instability resistance training group tended to develop more strength than the traditional resistance training group in the chest press strength ratio. Negra et al., (2017) performed performance evaluation during plyometric exercises performed on stable and unstable ground in a study conducted in 33 healthy male soccer players with an average age of 12.1±0.5 years, and at the end of the study, they reported that dynamic balance was significantly higher on unstable ground than on stable ground. Kibele and Behm (2009) examined the effects of 7-week training on stable and unstable ground on strength and balance at the end of 7-week training in a study conducted with 20 males with an average age of 23±2.4 and 12 females with an average age of 22±1.8 with no training history.

At the end of the study, improvements in all strength and balance parameters were recorded in both exercise methods. (2015) examined the EMG muscle activations of the muscles around the shoulder during PU exercise with TRX on stable ground, unstable ground at a height of 10 cm. and 65 cm. in 29 healthy men with an average age of 21.3±1.5 years. The EMG activation levels of the long head of the triceps brachii muscle, upper trapezius muscle, anterior deltoid muscle and clavicular part of the pectoralis major muscle were evaluated. As a result of the study, it was reported that the activation of the triceps brachii and upper trapezius muscles was more significant during PU exercises performed on unstable ground compared to PU exercises performed on stable ground. Although there are studies in the literature with different results that are not preliminary with our study, there are also studies showing parallels. Freeman et al., (2006) had nine male and one female university students repeat each of 12 different push-up exercises three times and examined muscle activation by EMG. In this study, they concluded that push-up exercises with a bosu ball were among the three push-up methods that caused more muscle activation in general.

Conclusions & Recommendations

Our study was limited to 20 male volleyball players aged 15-18 years, who were competing in the 8th Group of the 2nd League of the Turkish Volleyball Federation. Suspended (bosu ball) and non-suspended PU exercises were added to the existing volleyball training program for 3 sessions per week for 8 weeks. Stability, strength and dynamic balance measurements were performed in the upper extremity region before and after the study.

The findings of the study showed that both training methods were effective in the development of upper extremity stability, strength and dynamic balance. However, when the superiority of the training methods was compared, it was found that PU bosu ball exercises with suspension were more effective in increasing muscle strength than PU exercise training without suspension.

In this sense, it can be stated that PU exercises with bosu ball do not create a significant situation compared to classical PU exercises, but when it is considered in terms of athletes who train regularly, routine exercises can cause boredom and decreased performance over time in athletes of all levels. In this respect, it is thought that bosu ball exercises in different forms to be applied to eliminate monotony in training will be beneficial in the field of sports.

It is thought that it would be useful to conduct studies to determine the effect of different suspended and unsuspended PU exercise exercises on sportive performance using different test batteries, to conduct studies focusing on different sports branches or to compare athletes of these branches, and to increase the number of subjects.

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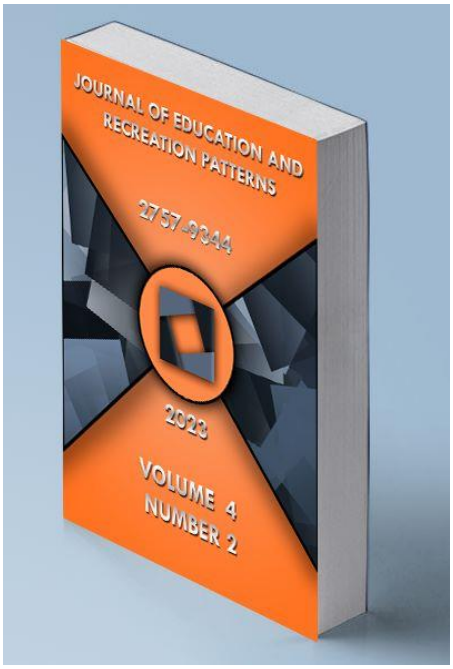
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Burak CANPOLAT[1], Fatih Harun TURHAN[2]

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[1] Burak Canpolat, İnönü Üniversity, burak.canpolat@inonu.edu.tr, https://orcid.org/ 0000-0002-4768-4855

[1] Fatih Harun Turhan, Karabük Üniversity, fhaunturhan@karabuk.edu.tr, https://orcid.org/ 0000-0001-5644-6157

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Motivation Profiles of Football Players: B2-B3 A Study on Individuals with Visual Challenges

Burak Canpolat[1], Fatih Harun Turhan[2]

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ABSTRACT

Visual impairment is a significant inhibiting factor that affects individuals' daily lives. However, in recent years, it has been recognized that sports have a positive impact on the lives of visually impaired individuals and enhance their quality of life. Sports have become an important tool in meeting the physical, psychological, and social needs of visually impaired individuals. Therefore, understanding and evaluating the participation motivation of visually impaired individuals in sports is crucial to enrich their sports experiences and maximize their potential. In this regard, this study assesses the participation motivation of B2-B3 visually impaired football players who participate in indoor football within the conceptual framework of Goal-Setting Theory proposed by Locke & Latham. The data from B2-B3 visually impaired football players were collected using the Sports Participation Motivation Scale for Disabled Individuals developed by Demir et al., and the collected data were analyzed by applying inferential statistical tests using the SPSS program. According to the findings, there were no significant differences in terms of age and years of sports participation for the variables of intrinsic motivation, extrinsic motivation, and amotivation. However, regarding the time of onset of disability, it was observed that there was a significant difference in the amotivation subscale, with congenitally visually impaired individuals having higher average scores. In conclusion, this study sheds light on the multifaceted nature of participation motivation among B2-B3 visually impaired football players, emphasizing the need for tailored approaches that consider individual characteristics to enhance their sports experiences and maximize their potential.

Keywords: B2-B3, Football Players, Motivation, Participation in Sports, Visually Impaired

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INTRODUCTION

Motivation is a process that directs and sustains individuals' behavior. Despite having various definitions, it can generally be described as the desire or energy to respond to individuals' needs arising from internal or external factors. In other words, motivation is related to an individual's desire to achieve their goals, the effort they put in to succeed, and their passion. In this context, according to Locke and Latham's (2002) "goal-setting theory," individuals become motivated to achieve the goals they set for themselves. Goals play a guiding role in enhancing individual performance and obtaining better outcomes. Motivation can enhance individuals' performance, promote creativity, and strengthen the desire for achieving success (Deci & Ryan, 2008). The motivation for sports participation among visually impaired football players has been examined in this study with respect to variables such as age, years of sports participation, and the time of visual impairment onset. This topic is unique in terms of the location and timing of the research. Therefore, the results obtained in this study are considered important for inspiring similar research.

Motivation in Sports

Motivation in sports is a factor that influences athletes' performance and encourages them to achieve their goals. Motivation can be defined as the desire and energy to respond to athletes' needs arising from internal and external factors. Research conducted in sport psychology has demonstrated the enhancing effect of motivation on athletes' performance. For instance, a study conducted by Vallerand et al. (2003) found that athletes' levels of intrinsic motivation were positively associated with higher performance, greater commitment, and increased enjoyment. Additionally, according to Locke and Latham's (1990) "goal-setting theory," challenging and attainable goals set by athletes can enhance their performance and elevate their motivation. In sports, motivation can strengthen athletes' desire for achievement, foster disciplined work habits, and assist them in performing more effectively in competitive environments.

Numerous factors influence motivation in sports. Research has examined the effects of intrinsic and extrinsic motivation, which are crucial for athletes to achieve successful performance. Intrinsic motivation refers to the desire to engage in sports for internal reasons such as enjoyment of the sport, desire for competition, personal achievement, and growth. This type of motivation provides a pleasurable experience for athletes and can enhance long-term commitment. On the other hand, extrinsic motivation is driven by external factors. For instance, rewards, recognition, prestige, and financial gains can increase athletes' motivation. However, other factors that influence motivation in sports include the coach's leadership style, team dynamics, the presence of a supportive environment, goal clarity, and attainability. Research suggests that considering this diversity of factors that enhance athletes' motivation, the use of appropriate motivational strategies can enhance performance (Ryan & Deci, 2000; Mageau & Vallerand, 2003).

Motivation in visually impaired people

It expresses individuals' desire and energy to achieve their goals despite their disability. Research has examined numerous factors that influence motivation in individuals with disabilities. Firstly, according to Deci and Ryan's (2000) "self-determination theory," the intrinsic motivation of individuals with disabilities is associated with personal satisfaction, independence, achievement, and personal growth, which are linked to their desire to engage in sports or other activities. Additionally, a study conducted by Shields and Brawley (2013) found that external motivational factors such as a supportive environment, social support, and assistance provided to individuals with disabilities are crucial in enhancing their motivation. Individuals who possess the ability to cope with their disability demonstrate great strength in

overcoming barriers and achieving their goals when these factors are present, thus maintaining their motivation. When appropriate support, guidance, and opportunities are provided, the condition of disability can help increase the motivation of individuals with disabilities, enabling them to fulfill their potential (Shields & Brawley, 2013; Deci & Ryan, 2000; Mageau & Vallerand, 2003).

Visually impaired athletes may have a unique perspective due to their visual impairments, which can lead them to a stronger internal motivation. For them, sports become not only a physical activity but also a way to achieve personal accomplishments and push their boundaries. They compete not only to surpass others' expectations but also to inspire their communities. These athletes can demonstrate that overcoming obstacles and conquering challenges is possible not only within the confines of a sports facility or field but also in life (Tekkurşun Demir & İlhan, 2019).

It has been determined that the sport motivation of visually impaired athletes has profound effects on a range of factors, such as overcoming obstacles in sports, achieving individual success, and improving physical abilities (Smith, 2018). For instance, individuals' personal goals are associated with the desire to achieve success and explore their potential (Brown & Jones, 2017). Understanding the sport motivation of visually impaired athletes can assist coaches and sports managers in making sports programs and support systems more effective (Jackson & Csikszentmihalyi, 2001). Therefore, further research and understanding of the factors influencing the motivation of visually impaired athletes is an important step.

Individual experiences influence the past experiences and personal motivations of visually impaired athletes in relation to sports. For instance, a sportsperson who has had previous sports experiences may have their motivation enhanced by past achievements and positive experiences (Mann et al., 2020). Additionally, support systems play a significant role. The support provided by athletes' families, coaches, and friends can positively influence their motivation and willingness to participate (Pilz et al., 2018).

The sports motivation of visually impaired athletes can be influenced by a range of factors at both individual and societal levels. Research indicates that sports enhance the quality of life and support the psychological well-being of visually impaired individuals (Sharma et al., 2019). Sports provide them with opportunities for engaging in physical activity and self-expression, while also helping them develop their abilities to overcome barriers. The skills for overcoming obstacles are also significant factors that influence the motivation of visually impaired athletes. Developing strategies for coping with challenges and strengthening their ability to overcome barriers can enhance their motivation (Vierimaa et al., 2020). This can boost their self-confidence and self-esteem, enabling athletes to explore their potential.

Another factor that influences the sports motivation of visually impaired athletes is success and recognition in sports. Feeling successful, achieving their goals, and gaining the admiration of others can enhance their motivation (Müller et al., 2019). Therefore, it is important to set goals for success and support athletes in the process of achieving these goals. Future research aimed at better understanding and supporting the sports motivation of visually impaired athletes should consider the interaction of these factors and the individual characteristics of the athlete. Additionally, coaches and sports managers can assist in enhancing athletes' motivation by developing sports programs and coaching strategies based on best practices (Morris, 2020).

Research indicates that personal motivation is effective in individuals' continuation of sports, enhancing their performance, and developing coping skills for challenges (Briscoe et al., 2021). Additionally, social motivation is also important. Visually impaired athletes can establish connections with other athletes, experience team spirit through sports, and access social support networks (Ferguson et al., 2018). Understanding the motivation of visually

impaired athletes is a critical factor in the development of training programs and coaching approaches. Coaches can support and guide athletes by considering their individual goals, interests, and motivations (Darcy et al., 2017). Furthermore, creating a supportive environment to enhance athletes' motivation can contribute to improving their competitiveness and performance (Cottingham et al., 2021).

This study aimed to examine the motivation of visually impaired football players in sports participation by seeking answers to the following questions:

What is the level of sports participation among visually impaired athletes?

What is the relationship between "age," "years of sports participation," and "time of visual impairment" with the sports participation of visually impaired athletes?

CONCEPTUAL FRAMEWORK

Goal-Setting Theory (Locke & Latham, 1990)

The goal-setting theory is an important theoretical framework recognized in the field of motivation, developed by Locke and Latham (Locke & Latham, 1990). This theory posits that individuals are motivated to achieve self-set goals and directs their efforts towards enhancing performance. The goal-setting theory offers effective strategies to increase individuals' motivation and improve their performance. Research has shown that setting goals and determining the level of difficulty can enhance motivation and improve performance (Locke & Latham, 1990; Latham & Locke, 2007). Goals help individuals focus their attention and guide them towards achieving the desired outcomes. Furthermore, the provision of feedback is emphasized as a crucial component. Feedback assists individuals in evaluating their performance and making necessary adjustments when needed (Locke & Latham, 1990; Latham & Locke, 2007). The goal-setting theory is effectively utilized in various domains such as performance management in the business world, student motivation in education, and performance enhancement in sports (Locke & Latham, 1990; Latham & Locke, 2007).

The theory examines effective strategies for increasing motivation to achieve self-set goals and improving performance. The goal-setting theory provides a framework for managing motivation by addressing elements such as goal setting, determining the level of difficulty, and providing feedback. Drawing on numerous applications and research in fields such as business, education, sports, and other performance domains, this theory explains the theoretical foundations behind it.

METHOD

Research Design

The research was designed using a quantitative research model, specifically the with the relational screening model. The study was supported by the İnönü University Scientific Research and Publication Ethics Committee under ethical committee decision dated 15.06.2023 and numbered 2023/5-21

Participants

The population of the study consists of visually impaired football players with congenital and acquired minimum B2-B3 visual impairment playing indoor football in various cities of Turkey. The sample comprises 36 visually impaired athletes who were selected through a simple random sampling method and voluntarily participated in the research. The study is limited to athletes playing indoor football with congenital and acquired B2-B3 level of visual impairment. The participants were visually impaired athletes actively involved in futsal competitions in the B2-B3 football league in Turkey during the 2021-2022 season. Participants

responded to the questions through online forms. As the participants did not have total vision loss, they were able to answer the questions without assistance.

Table 1. Percentage and Frequency Distribution of the Participants

Variable	Age	N	%
Age	18-23 Years	12	33,3
	24-29 Years	13	36,1
	30 Years and Above	11	30,6
Years of Sports Participation	3-4 Years	8	22,2
	5-6 Years	15	41,7
	7 Years and Above	13	36,1
Time of visual impairment	Congenital	27	75,0
	Acquired	9	25,0
	Total	36	100,0

Table 1 presents the percentage and frequency distributions of the participants. Upon examination of the table, it can be observed that among the participants, 12 individuals (33,3%) fall within the age range of 18-23, 13 individuals (36,1%) fall within the age range of 24-29, and 11 individuals (30,6%) are aged 30 and above. Furthermore, the average age of the sample group is 26,72. In terms of the variable of years of sports participation, the sample group consists of 8 individuals (22,2%) who have been engaged in sports for 2-4 years, 15 individuals (41,7%) who have been engaged in sports for 5-6 years, and 13 individuals (36,1%) who have been engaged in sports for 7 years and above. Regarding the time of visual impairment, 27 individuals (75,0%) have congenital visual impairment, and 9 individuals (25,0%) have acquired visual impairment.

Data Collection Tool

The research data was collected using a personal information form developed by the research team to gather descriptive information such as age, education level, years of sports participation, and time of visual impairment. Additionally, the "Sports Participation Motivation Scale for Disabled Individuals" developed by Demir et al. (2017) was utilized. This scale consists of 22 items and encompasses sub-dimensions of "intrinsic motivation" (1,2,3,4,5,6,7,8,9,10,11,12), "extrinsic motivation" (13,14,15,16,17) and "amotivation" (18,19,20,21,22). The values of the items representing the amotivation subscale were reversed during the scoring stage (1=5, 2=4, 3=3, 4=2, 5=1). As a result of the analysis, the KMO value was 0.92; Bartlett test value was found to be 4655.655 ($p<0.001$). The internal motivation subscale had a Cronbach's Alpha of 0,94, the external motivation subscale had 0,84, and the amotivation subscale had 0,88. The scale was designed using a five-point Likert scale, with scoring ranging from "Strongly Disagree (1,00-1,79)" to "Strongly Agree (4,20-5,00)." As the scale's scores range from 1 to 5, it is assumed that as the propositions approach 5, the participants' level of sports participation motivation is high, while as they approach 1, it is low.

Data Analysis

Descriptive statistical methods such as frequencies (n), percentages (%), mean (X), and standard deviation (SD) were used for the analysis of descriptive personal information. Prior to the analysis of the research questions, the kurtosis skewness values were checked and it was observed that the data were normally distributed (Büyüköztürk, 2014). One-Way ANOVA and Independent Samples t-test were applied to normally distributed data. Based on the scores obtained from the participants on the scale, KMO (0,73) and Cronbach's Alpha values were calculated. The internal motivation subscale had a Cronbach's Alpha of 0,92, the external motivation subscale had 0,74, and the amotivation subscale had 0,91.

FINDINGS

This section includes findings regarding the research results. The findings were interpreted with frequency, percentage, kurtosis, skewness, mean, standard deviation, potency and significance values.

Table 2. Score Distribution of the Scale of Participation in Sports

Variable	N	Mean	Sd	Skewness	Kurtosis
Intrinsic motivation	36	4,18	,83	-1,112	1,545
Extrinsic motivation	36	3,73	1,01	-,736	,232
Amotivation	36	4,03	1,16	-1,499	1,240

The table provides a summary of the participants' scores on the Sports Participation Motivation Scale. On average, the visually impaired football players in the study demonstrated a high level of intrinsic motivation, with a mean score of 4,18 and a relatively low standard deviation of 0,83. In contrast, their average score for extrinsic motivation was slightly lower, with a mean of 3,73 and a higher standard deviation of 1,01, indicating more variability in responses. The participants also displayed a high level of amotivation, with an average score of 4,03 and a standard deviation of 1,16. Overall, the total mean score for sports participation motivation was 4,05, suggesting a generally high motivation level among the participants with a relatively low standard deviation of 0,76.

Table 3. One-Way Analysis of Variance Results Regarding the Scores of the Participants in terms of Age Variable

Variable	Age	N	Mean	Sd	f	p/ES
Intrinsic motivation	18-23 Years	12	4,09	,52	,949	,39/0,05
	24-29 Years	13	4,03	1,24		
	30 Years and Above	11	4,47	,40		
Extrinsic motivation	18-23 Years	12	3,60	,81	,405	,67/0,02
	24-29 Years	13	3,93	1,10		
	30 Years and Above	11	3,63	1,14		
Amotivation	18-23 Years	12	4,35	,63	,676	,51/0,03
	24-29 Years	13	3,81	1,51		
	30 Years and Above	11	3,96	1,16		
Total	18-23 Years	12	4,03	,39	,205	,81/0,01
	24-29 Years	13	3,96	1,14		
	30 Years and Above	11	4,16	,54		

The table presents the results of a one-way analysis of variance (ANOVA) conducted to examine the scores of participants in relation to their age groups across three motivational factors: intrinsic motivation, extrinsic motivation, and amotivation, as well as the total scores. The mean scores for participants aged 18-23 years, 24-29 years, and 30 years and above were compared. For intrinsic motivation, there was no significant difference among the age groups ($F = 0.949$, $p = 0.39$). Similarly, in terms of extrinsic motivation, no significant difference was found among the age groups ($F = 0.405$, $p = 0.67$). Regarding amotivation, the age groups also did not differ significantly ($F = 0.676$, $p = 0.51$). The analysis of the total scores showed no significant difference based on age groups ($F = 0.205$, $p = 0.81$). Effect sizes (ES) were generally small, indicating minimal practical significance in the differences observed.

When the effect sizes are arranged according to the rows, respectively; The effect size (ES) is calculated as 0.39, indicating a moderate effect size for the analysis. The effect size (ES)

is calculated as 0.67, indicating a large effect size for the analysis. The effect size (ES) is calculated as 0.51, indicating a moderate effect size for the analysis. The effect size (ES) is calculated as 0.81, indicating a large effect size for the analysis.

Table 4. One-Way Analysis of Variance Results of the Scores of the Participants in terms of the Years of Sport Variable

Variable	Years of Sport	N	Mean	Sd	f	p/ES
Intrinsic motivation	3-4 Years	8	4,32	,42	,452	,64/0,02
	5-6 Years	15	4,27	,78		
	7 Years and Above	13	4,01	1,07		
Extrinsic motivation	3-4 Years	8	4,17	,81	1,239	,30/0,06
	5-6 Years	15	3,73	1,12		
	7 Years and Above	13	3,46	,97		
Amotivation	3-4 Years	8	4,32	,61	,334	,71/0,01
	5-6 Years	15	4,01	1,27		
	7 Years and Above	13	3,89	1,33		
Total	3-4 Years	8	4,28	,47	,802	,45/0,04
	5-6 Years	15	4,09	,76		
	7 Years and Above	13	3,86	,90		

The table presents the results of a one-way analysis of variance (ANOVA) examining the scores of participants based on their years of sport participation in the context of three motivational factors: intrinsic motivation, extrinsic motivation, amotivation, and the total scores. The analysis compared mean scores across three groups: participants with 3-4 years, 5-6 years, and 7 years and above of sport participation. For intrinsic motivation, there was no statistically significant difference in mean scores between the groups ($F = 0.452$, $p = 0.64$), indicating that years of sport participation did not significantly influence intrinsic motivation. Regarding extrinsic motivation, the analysis showed no significant difference in mean scores between the groups ($F = 1.239$, $p = 0.30$), suggesting that years of sport participation did not have a significant impact on extrinsic motivation. Similarly, for amotivation, the results revealed no significant difference in mean scores among the groups ($F = 0.334$, $p = 0.71$), implying that years of sport participation did not substantially affect amotivation levels. When considering the total scores, the analysis indicated no significant differences in mean scores across the three groups ($F = 0.802$, $p = 0.45$), suggesting that the total sports participation motivation scores were not significantly influenced by varying years of sport participation. When the effect sizes are arranged according to the rows, respectively; The effect size (ES) is calculated as 0.64, suggesting a large effect size. The effect size (ES) is calculated as 0.30, indicating a moderate effect size. The effect size (ES) is calculated as 0.71, suggesting a large effect size. The effect size (ES) is calculated as 0.45, indicating a moderate effect size.

Table 5. One-Way Analysis of Variance Results of the Scores of the Participants in terms of the Cause of Vision Loss Variable

	Time of visual Time	N	Mean	Sd	t	p/ES
Intrinsic motivation	Congenital	27	4,14	,78	-,552	,58/0,02
	Acquired	9	4,32	,99		
Extrinsic motivation	Congenital	27	3,85	,78	1,222	,23/0,39
	Acquired	9	3,37	1,53		
Amotivation	Congenital	27	4,28	,88	2,289	,02*/0,74
	Acquired	9	3,31	1,61		
Total	Congenital	27	4,10	,68	,777	,44/0,27
	Acquired	9	3,87	,99		

Table 5 presents the results of the dependent t-test analysis on the scores obtained from the scale according to the variable of the time of visual time of the participants. Upon examination of the table, no significant differences are observed in the total score of "sport participation motivation" and the subscales of "intrinsic motivation" and "extrinsic motivation" based on the variable of the time of visual impairment ($p>0,05$). However, a significant difference in favor of the group with congenital visual impairment is observed in the subscale of "amotivation" compared to the group with acquired visual impairment ($p<0,05$).

When the effect sizes are arranged according to the rows, respectively; The effect size (ES) is calculated as 0.58, suggesting a moderate effect size. The effect size (ES) is calculated as 0.23, indicating a small effect size. The effect size (ES) is calculated as 0.74, suggesting a large effect size. The effect size (ES) is calculated as 0.44, indicating a moderate effect size.

DISCUSSION & CONCLUSION

Upon examining the results regarding the scores obtained from the scale administered to visually impaired athletes, no significant differences were found in the scores obtained from the scale based on the variables of "age" and "years of sports participation". When examining the results in terms of the variable "time of visual impairment", a significant difference was observed only in the subscale of "amotivation" in favor of the group with congenital visual impairment. Additionally, when looking at the total scores obtained from the scale, it can be seen that their sports participation is high.

When examining the results of similar studies in the literature, there are studies indicating significant differences in the intrinsic and extrinsic motivation scores of visually impaired athletes based on age variable in different sports disciplines. Yılmaz et al. (2019) expressed that motivation towards success increases in younger age groups of visually impaired individuals. Although this situation bears similarity to our study from the perspective of the visually impaired group, it differs in terms of the age variable. Tekkurşun, Demir & İlhan (2019) found in their study that visually impaired athletes in judo discipline had higher levels of intrinsic and extrinsic motivation compared to other disciplines based on age variable, and this difference was statistically significant. These findings differ from our study results. However, similar to those studies, it has been observed that there were no significant differences in terms of extrinsic motivation and amotivation dimensions based on age variable (Tekkurşun, Demir & İlhan, 2019). This supports our study results. According to research findings indicating that sports participation motivation changes with age, in non-disabled individuals, it is stated that motivation decreases with age (Weiss, Chaumeton, 1992; Çeker et al., 2013). This result does not align with our study findings when looking at the mean scores. On the other hand, it is also argued that sports positively influence motivation in individuals with disabilities, despite increasing age (Tekkurşun Demir & İlhan, 2019).

When considering the sports age, it can be observed that visually impaired football players within the scope of our study did not show significant differences for the three variables. However, some studies have shown that as sports age increases, intrinsic motivation increases and amotivation decreases positively (Tekkurşun, Demir & İlhan, 2019). Moreover, it is also noted in the literature that there are studies with similar findings to our research, indicating that as sports age increases, intrinsic motivation increases and amotivation decreases (Yılmaz, 2019; Ural et al., 2008; Can et al., 2009). Different results in similar studies might have arisen due to the unique characteristics of the study group, which consisted of visually impaired futsal players. It is possible that the findings regarding age as a variable do not align with those in other sports disciplines since there is limited research available specifically for B2-B3 visually impaired futsal players. Therefore, the lack of comparable studies in this particular field could account for these dissimilar outcomes.

Visually impaired football players with congenital and acquired visual impairment did not show significant differences in terms of intrinsic and extrinsic motivation variables, but there was a significant difference in favor of congenital visually impaired players in terms of amotivation. Some studies have also indicated that the time of impairment does not lead to significant differences in the intrinsic and extrinsic motivation of visually impaired athletes (Yılmaz, 2019). The condition of being congenitally visually impaired may negatively affect individuals' motivation, which may be an expected outcome. When examining the literature, it is noted that the impact of congenital and acquired visual impairment on the amotivation variable in visually impaired individuals, using a similar scale, cannot be precisely compared. In studies on this topic, the duration of the impairment is not taken into account, and therefore, we believe that the result in our study is a valuable finding. Additionally, the significant differences in amotivation scores among congenitally visually impaired futsal players suggest the necessity for a different approach and planning for individuals with congenital impairments.

There was also no significant difference observed in any of the subscales based on years of sports participation. This suggests that visually impaired football players do not differ significantly in terms of internal and external motivation based on the number of years they have been involved in sports. However, an interesting point to note is that the group with the lowest number of years in sports participation had higher levels of both internal and external motivation, as well as amotivation. This could suggest that as participants' years in sports increase, their motivation to participate in sports may be negatively affected. Therefore, the reasons behind these results can be further examined through in-depth research.

The sport participation motivation of visually impaired athletes can be influenced by various factors. Locke & Latham's goal theory explains how goals can impact individuals' motivation. According to this theory, goal setting can enhance individuals' motivation and direct their performance (Poczwardowski et al., 2002). The sport motivation of visually impaired athletes can be influenced by factors such as personal goals, social connections, competitiveness, and support systems. Understanding these factors better is important to enrich the sport experiences of visually impaired athletes and maximize their potential. Various factors like health, social involvement, personal growth, and competitive drive influence the motivation for sports participation among individuals with visual impairments. This discussion will help us understand the motivation of individuals with visual impairments to engage in sports and evaluate the impact of sports on their well-being (Shin, & Kim, 2016).

Many studies have focused on the health motivation of individuals with visual impairments. For example, a study conducted by Lieberman et al. (2006) demonstrated that the motivation of visually impaired participants to engage in sports stems from the health benefits. It has been observed that their health-related fitness in physical activity is higher.

Social inclusion plays a significant role in the motivation of individuals with visual impairments to engage in sports. A study conducted by Şenel and Güler (2015) demonstrated that sports provide visually impaired individuals with opportunities to establish social connections and integrate into society. Joining sports teams, participating in sports events, and regularly attending training sessions encourage interactions with others and facilitate the formation of new friendships for individuals with visual impairments.

Individual development is also an important factor that influences the motivation of individuals with visual impairments to engage in sports. Various studies have shown that sports enhance self-confidence, strengthen the sense of independence, and provide opportunities to push personal boundaries. For instance, a study conducted by Lojacono et al. (2017) revealed that the motivation of individuals with visual impairments to participate in sports is associated with personal development and self-efficacy perception.

Competitive spirit is also a factor that shapes the motivation of individuals with visual impairments to engage in sports. Several sports for visually impaired individuals provide opportunities for competition at national and international levels. By aiming for success in a competitive environment, individuals with visual impairments can improve their sports skills

and challenge themselves. Numerous studies and sports events cater to nurturing the competitive spirit of visually impaired individuals and enhancing their motivation to participate in sports (Kurková et al., 2020).

Eventually, the motivation of individuals with visual impairments to engage in sports is influenced by various factors such as health, social participation, personal development, and competitive spirit, and it can vary based on different demographic characteristics. In the context of this research, it can be observed that football players with visual impairments at the B2-B3 level did not show significant differences in terms of variables, while their overall motivation for sports participation was found to be high with an average total score of 4.05. The significant differences found in terms of the variable of demotivation need to be tested with similar studies. The literature indicates that there are some limitations in this regard.

Recommendation

Understanding their motivation for sports participation is important in order to provide suitable sports programs and supportive environments for visually impaired individuals. However, the limited sample size of the study makes it challenging to generalize the findings in this field. Therefore, similar studies need to be conducted with homogeneous groups, and the results should be compared and tested. This way, support can be provided for the gains that visually impaired athletes can achieve through participation in sports.

Limitations

The study is limited to individuals with visual impairments at levels B2 and B3. While this limitation adds to the uniqueness of the study, it also brings along challenges in reaching this disadvantaged group.

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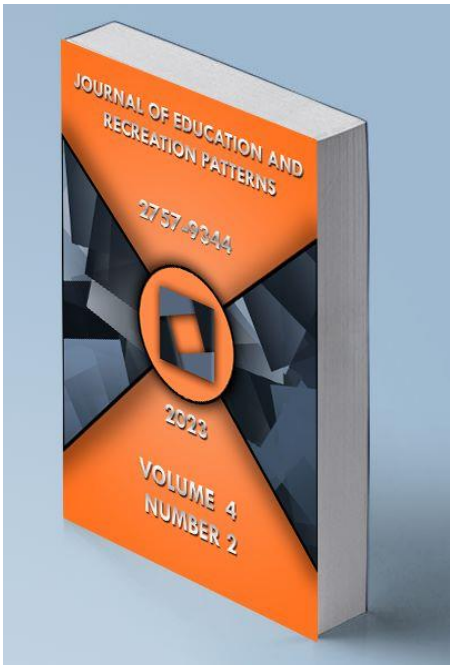
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Examination of Attitude Levels of University Students Towards Youth Centers

Yılmaz AKSOY[1], Hacı Ali ÇAKICI[2]

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[1] Yılmaz AKSOY, Ordu University, Faculty of Sports Science, Department of Sports Management, yilmazaksoy5552@gmail.com, https://orcid.org/0000-0001-9036-1835

[2] Hacı Ali ÇAKICI, Ordu University, Faculty of Sports Science, Department of Sports Management, cakicihaciali@gmail.com, https://orcid.org/0000-0001-9439-1118

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Examination of Attitude Levels of University Students Towards Youth Centers

Yılmaz Aksoy[1], Hacı Ali Çakıcı[2]

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ABSTRACT
The aim of the present study is to examine the attitudes of university students towards youth centers. This study was conducted by using descriptive survey model. Population of the study consists of university students who are members of Youth Centers within the body of Ministry of Youth and Sports of the Republic of Turkey, while the sample consists of 141 participants who are members of Youth Centers within the body of Ministry of Youth and Sports of the Republic of Turkey. "Personal Information Form" and "The Scale of Attitude Towards Activities of Youth Centers" were used in the study. Student t-test, one-way analysis of variance and Tukey multiple comparison tests were used in data analysis. No significant difference was found in the variables of gender, educational status, family income and having a youth center member in the family. Significant difference was found in The Scale of Attitude Towards Activities of Youth Centers sub-dimension scores and total score in the variables of age, membership duration, frequency of visiting and number of siblings. In addition, significant difference was found in volunteering sub-dimension scores and total scores of The Scale of Attitude Towards Activities of Youth Centers in the variable of the state of doing sports. Therefore, it is thought that it is important to have activities to enable new members to participate in the activities. These activities could include contests with prizes, domestic and international trips, and scholarship opportunities. It can also be recommended to organize activities by considering the education lives of university students so that they can participate in the activities of youth centers more frequently.

Keywords: Attitude, University Student, Youth Centre

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INTRODUCTION

It can be stated that globalization, the impact of which is recently felt more in the world, as well as industrialization and technological developments, have some negative effects on the society and on the youth in general. It can be said that there is a need for beneficial institutions in terms of young people's making use of their leisure time, especially with the effect of technological developments. In the technology-driven society, it can be argued that platforms like social media can lead to negative consequences for young people. With the rapid advancement of technology, young people often spend a significant amount of their time on social media. Consequently, technological developments can have adverse effects on the thinking and value systems of young individuals (Şener & Yiğit, 2021). This is because problems may occur in leisure time and exercising with technology making human life easier. This situation creates negative effects on individuals psychologically, physically and socially (Pepe & Özkan, 2018). In terms of eliminating these negative effects, as mentioned above, it is important for young people to be in environments where they can be more beneficial. Institutions established to serve young people lead to socialization of young people and the emergence or development of some of their talents. It can be said that the existence of these institutions and organizations has become a necessity for young people. Young people coming together and carrying out activities and programs will pave the way for social integration and coexistence. Thus, it can be said that it will be a better situation for both the youth and the society.

The meaning of the word "youth" is explained as the most active period of human life, the search for a certain identity and the process of maintaining that identity (Akın, 2014). The concept of youth is as important as the approaches to youth. Individuals working in different fields of expertise may express their perspectives on youth differently. For example, for lawyers, it may be defined within the framework of legally determined age ranges, for educators, it may involve students at various levels, and for biologists, it may be considered as the period starting from adolescence and ending during adolescence in humans. In this regard, various conclusions can be drawn. It is important to examine the interests, needs, and conditions of young people in terms of their economic, political, and social aspects without confining youth ages to a specific age range (Aktaş, 2023). The definition of youth is explained in two different ways in our country. Firstly, it is the beneficial utilization of the knowledge and skills possessed during the youth period. Secondly, it is individuals who need to be protected and cared for due to the weak or nonexistent youth consciousness, which may lead to inclinations towards bad habits (Yentürk et al. 2008). According to individuals, the youth period can be described as the time when personality and character are formed and shaped for society. This period, which falls between childhood and adulthood, is a psycho-biological developmental process that will affect one's entire life. People in these periods easily experience influences and guidance (Armağan, 2004). The youth process represents a specific stage in individuals' lives as a whole. It is the period of development, mental maturation, and preparation for life that falls between childhood and adulthood (Yörükoğlu, 1999). Countries prepare laws and organize certain projects and studies that aim to make the young people individuals with a certain identity who are useful to the society. As mentioned before, the existence of institutions where young people can spend their free time and reveal some of their talents is very important. It is thought that the organization of social, artistic, cultural and sports activities by institutions that young people may prefer will also eliminate the negative energy on young people. In general, states support the formation of some institutions so that young people will be educated better and be more beneficial to society.

At this point, it can be said that the Youth Centres established under the Provincial Directorates of Youth and Sports are very active in our country. Youth centers are institutions affiliated with the Provincial Directorates of Youth and Sports, which enable young people to

utilize their leisure time in the fields of culture, arts, social activities, and sports according to their interests, desires, and skills, aiming to contribute to their participation in society as healthy and conscious citizens. These centers carry out work, activities, and events aimed at protecting young people from bad habits and dangers (Celayir, 2022). When the objectives and activities of youth centres, which are described as organizations that offer young people the opportunity to spend their free time with sports, social and cultural activities, are examined, they can be shown as an institution where young people can improve in a wide variety of ways and use their free time in a beneficial way (Aycan, 2005). It is known that university students usually receive service from youth centres. It is important to determine the thoughts and attitudes of university students about youth centres in order to reveal and increase the service quality of these centres. At this point, when the literature in the field is examined, the limited number of studies related to youth centers is notable. In this regard, the results of the current research are valuable as a guide for future studies. However, it should be noted that one limitation of the study is that it focuses on university students who are present in the youth center. This aspect also reflects the uniqueness of the study. Thus, the aim of the study is to examine the attitudes of university students towards youth centers.

METHOD

Research Model

Descriptive survey model was used in this study. Survey model is a type of research that aims to convey and describe the existing situation as it is (Karasar, 2011). The research was approved by the 06/10/2022 dated and 2022/179 numbered decision of Ordu University Social and Human Sciences Research Ethics Committee.

Population and Sample

Population of the study consists of university students who are members of Youth Centres under the Ministry of Youth and Sports of the Republic of Turkey. Sample of the study consists of 141 participants selected among university students who are members of Youth Centres. The research data were collected online during the summer and fall seasons. The method of random sampling signifies the number of each unit in the defined population being selected independently and equally (Ural & Kılıç, 2005). There are various practical rules for determining the sample size, one of which is based on Tavşancıl's (2014) recommendation that in studies involving scales, the sample size should be at least 5 times the number of items on the scale (Attitude Scale towards Youth Centre Activities has 18 items, so the minimum sample size is 18*5=90).

Table 1. Descriptive Statistics of University Students who are Members of the Youth Centre

Variables		n	%
Gender	Male	70	49.6
	Female	71	50.4
Age	18-20	86	61.0
	21-23	45	31.9
	≥24	10	7.1
Education Level	Associate degree	64	45.4
	Undergraduate	77	54.6
Membership duration	1-6 months	61	43.3
	7-12 months	26	18.4
	13-24 months	19	13.5
	≥25 months	35	24.8
Frequency of visiting	Every day	14	9.9

	A few days a week	41	29.1
	A few days a month	86	61.0
Number of siblings	None	10	7.1
	1-2	68	48.2
	≥3	63	44.7
The status of doing sports	Yes	90	63.8
	No	51	36.2
Family income status	≤5000 TL	47	33.3
	5001-10.000	72	51.1
	≥10.001 TL	22	15.6
Having a member of a youth centre in the family	Yes	53	37.6
	No	88	62.4

When Table 1 is examined, it was found that 70 (49.6%) of the participants were male and 71 (50.4%) were female; 86 (61.0%) were between 18 and 20 years of age, 45 (31.9%) were between 21 and 23 years of age and 10 (7.1%) were 24 and older; 64 (45.4%) had associate degree, 77 (54.6%) had undergraduate degree; 61 (43.3%) had a membership duration between 1 and 6 months, 26 (18.4%) had a membership duration between 7 and 12 months, 19 (13.5%) had a membership duration between 13 and 24 months, 35 (24.8%) had a membership duration of 25 months and longer; 14 (9.9%) visited youth centre every day, 41 (29.1%) visited a few days a week and 86 (61.0%) visited a few days a month; 10 (7.1%) did not have any siblings, 68 (48.2%) had 1-2 siblings, 63 (44.7%) had 3 and more siblings; 90 (63.8%) did sports and 51 (36.2%) did not do sports; 47 (33.3%) had a family income level of 5000 TL and less, 72 (51.1%) had a family income level between 5001 – 10000 TL and 22 (15.6%) had a family income level of 10.001 TL and more; 53 (37.6%) had a family member who was a member of youth centre and 88 (62.4%) did not have a family member who was a member of youth center (Table 1).

Data Collection Tools

"Personal Information Form" and "Attitude Scale towards Youth Centre Activities" were used in the study. Personal information form includes variables such as gender, age, education level, membership duration, frequency of visiting youth centre, number of siblings, status of doing sports, family income status and having a member of a youth center in the family.

Attitude Scale towards Youth Centre Activities was developed by Ataç et al. (2018). The scale is a 5-point Likert type and has 18 items. Attitude scale towards youth centre activities consists of 2 sub-dimensions as participation and volunteering. When Cronbach's alpha coefficients are examined, participation sub-dimension was found to be 0.93, volunteering sub-dimension was found to be 0.85, and total scale alpha value was found to be 0.93.

Data Analysis

In the research, first of all, university students who were members of youth centre were informed about the study. There was no specific time limit during the collection of research data. In the study, Cronbach alpha coefficients of the responses given for the items in the scale were calculated. Participation sub-dimension was found to be 0.97, volunteering sub-dimension was found to be 0.93, and overall reliability coefficient of the attitude scale towards youth centre activities was found to be 0.97. Kolmogorov-Smirnov and Shapiro-Wilk tests were applied for normality distribution analysis of the study. According to the results of the analysis, Student's t test was used for the variables of gender, education level, doing sports and having a member of a youth centre in the family; One-Way Analysis of Variance and Bonferroni multiple comparison test were used in the variables of age, membership duration, frequency of visiting,

number of siblings and family income status. In the research, Bonferroni correction has been applied. The Bonferroni correction is determined by the formula p/k, which represents the significance level divided by the number of groups (Yüksel, 2004). SPSS 22.0 V. statistical package program was used in all statistical calculations. Research findings were given as n (%), mean and standard deviation values, and the findings were considered significant at $p<0.05$ level.

FINDINGS

Table 2. Attitude Levels of Youth Centre Member University Students towards Youth Centres in Terms of Gender

	Gender	n	Mean	SD	t	p
Participation	Male	70	56.34	11.18	-0.802	0.424
	Female	71	57.87	11.46		
Volunteering	Male	70	15.88	3.55	-0.808	0.421
	Female	71	16.38	3.71		
Attitude Scale towards Youth Centre Activities	Male	70	72.22	14.52	-0.816	0.416
	Female	71	74.25	14.92		

When Table 2 is examined, no significant difference was found in youth center member university students' attitudes in terms of the gender variable ($p>0.05$). According to the analysis results, it is observed that the gender variable has no effect on the attitude level towards the youth center (Table 2).

Table 3. Attitude Levels of Youth Centre Member University Students towards Youth Centres in Terms of Gender

	Age	n	Mean	sd	f	p	Significant Difference
Participation	18-20 [a]	86	58.62	8.26	15.413	<0.001**	a>c b>c
	21-23 [b]	45	58.08	10.69			
	≥24 [c]	10	39.70	20.56			
Volunteering	18-20 [a]	86	16.79	2.66	17.052	<0.001**	a>c b>c
	21-23 [b]	45	16.15	3.63			
	≥24 [c]	10	10.40	5.73			
Attitude Scale towards Youth Centre Activities	18-20 [a]	86	75.41	10.72	16.363	<0.001**	a>c b>c
	21-23 [b]	45	74.24	13.94			
	≥24 [c]	10	50.10	26.16			

*Bonferroni correction was applied for Post Hoc Analyses: $p<0.0016$. **Statistical difference between groups.

When Table 3 is examined, a significant difference was found in total scores of participations and volunteering sub-dimensions and attitude scale towards youth centre activities in terms of the age variable ($p<0.05$). When the results of the analysis were examined, it was found that the mean score of the students in the 18-20 age group was higher than the students in the other age category. The Bonferroni multiple comparison test revealed a difference between the age range of 24 and above and the age ranges of 18-20 and 21-23 (Table 3).

Table 4. Attitude Levels of Youth Centre Member University Students towards Youth Centres in Terms of Education Level

	Education level	n	Mean	Sd.	t	p
Participation	Associate degree	64	56.89	10.59	-0.212	0.832
	Undergraduate	77	57.29	11.94		
Volunteering	Associate degree	64	16.29	3.45	0.482	0.631

	Undergraduate	77	16.00	3.78		
Attitude Scale towards Youth Centre Activities	Associate degree	64	73.18	13.92	-0.045	0.965
	Undergraduate	77	73.29	15.42		

When Table 4 is examined, no difference was found in attitude levels of youth centre member university students in terms of variable of education level ($p>0.05$). According to the analysis results, it is observed that the education level variable has no effect on the attitude level towards the youth centre (Table 4).

Table 5. Attitude Levels of Youth Centre Member University Students towards Youth Centres in Terms of Membership Duration

	Membership duration	**n**	**Mean**	**Sd.**	**f**	**p**	**Significant Difference**
Participation	1-6 months [a]	61	57.62	6.96	5.449	0.001**	a>c b>c c<d
	7-12 months [b]	26	57.26	13.81			
	13-24 months [c]	19	48.47	18.35			
	≥25 months [d]	35	60.80	8.15			
Volunteering	1-6 months [a]	61	16.26	2.62	4.688	0.004**	a>c b>c c<d
	7-12 months [b]	26	16.46	4.15			
	13-24 months [c]	19	13.47	5.25			
	≥25 months [d]	35	17.11	3.12			
Attitude Scale towards Youth Centre Activities	1-6 months [a]	61	73.88	9.21	5.429	0.001**	a>c b>c c<d
	7-12 months [b]	26	73.73	17.89			
	13-24 months [c]	19	61.94	23.53			
	≥25 months [d]	35	77.91	10.86			

*Bonferroni correction was applied for Post Hoc Analyses: $p<0.0125$. **Statistical difference between groups.

When Table 5 is examined, significant difference was found in participation and volunteering sub-dimensions and attitude scale towards youth centre activities total score in terms of the variable of membership duration ($p<0.05$). When the analysis results were examined, it was found that students who had a membership duration of 25 months and above had higher mean scores than the other students. The Bonferroni multiple comparison test revealed a difference between the 13-24 months interval and the 1-6 months interval, the 7-12 months interval, and the 25 months and above interval (Table 5).

Table 6. Attitude Levels of Youth Centre Member University Students towards Youth Centres in Terms of The Frequency of Visiting

	Frequency of visiting	**n**	**Mean**	**Sd.**	**f**	**p**	**Significant Difference**
Participation	Every day [a]	14	48.35	23.24	5.066	0.008**	a<b a<c
	A few days a week [b]	41	58.82	10.36			
	A few days a month [c]	86	57.72	7.95			
Volunteering	Every day [a]	14	13.42	6.91	5.443	0.005**	a<b a<c
	A few days a week [b]	41	17.02	3.26			
	A few days a month [c]	86	16.15	2.79			
Attitude Scale towards Youth Centre Activities	Every day [a]	14	61.78	30.06	5.273	0.006**	a<b a<c
	A few days a week [b]	41	75.85	13.53			
	A few days a month [c]	86	73.87	10.33			

*Bonferroni correction was applied for Post Hoc Analyses: $p<0.0016$. **Statistical difference between groups.

When Table 6 is examined, significant difference was found in participation and volunteering sub-dimensions and attitude scale towards youth centre activities total score in terms of the variable of frequency of visiting ($p<0.05$). When the analysis results were examined, it was found that students who visited youth centre a few days a week had higher mean scores than the other participants. The Bonferroni multiple comparison test revealed a difference between the "every day" category and the "once a week" and "once a month" categories (Table 6).

Table 7. Attitude Levels of Youth Centre Member University Students towards Youth Centres in Terms of The Number of Siblings

	Number of siblings	n	Mean	Sd.	f	p	Significant Difference
Participation	None [a]	10	40.80	20.46	13.552	<0.001**	a<b a<c
	1-2 [b]	68	57.61	9.45			
	≥3 [c]	63	59.15	9.17			
Volunteering	None [a]	10	11.40	6.11	11.641	<0.001**	a<b a<c
	1-2 [b]	68	16.07	3.12			
	≥3 [c]	63	16.95	3.08			
Attitude Scale towards Youth Centre Activities	None [a]	10	52.20	26.51	13.506	<0.001**	a<b a<c
	1-2 [b]	68	73.69	12.28			
	≥3 [c]	63	76.11	11.98			

*Bonferroni correction was applied for Post Hoc Analyses: $p<0.0016$. **Statistical difference between groups.

When Table 7 is examined, significant difference was found in participation and volunteering sub-dimensions and attitude scale towards youth centre activities total score in terms of the variable of number of siblings ($p<0.05$). When the analysis results were examined, it was found that students who had three and more siblings had higher mean scores than the other participants. The Bonferroni multiple comparison test revealed a difference between the "having no siblings" category and the "1-2" and "3 and above" categories (Table 7).

Table 8. Attitude Levels of Youth Centre Member University Students towards Youth Centres in Terms of The State of Doing Sports

	State of doing sports	n	Mean	Sd.	t	p
Participation	Yes	90	58.42	10.64	-1.840	0.068
	No	51	54.80	12.17		
Volunteering	Yes	90	16.61	3.42	-2.094	0.038
	No	51	15.29	3.86		
Attitude Scale towards Youth Centre Activities	Yes	90	75.03	13.85	-1.933	0.050
	No	51	70.09	15.76		

When Table 8 is examined, significant difference was found in volunteering sub-dimension and attitude scale towards youth centre activities total score in terms of the variable of doing sports ($p<0.05$). When the analysis results were examined, it was found that students who did sports had higher scores. According to the analysis results, it is observed that the state of doing sports variable has no effect on the attitude level towards the youth centre (Table 8).

Table 9. Attitude Levels of Youth Centre Member University Students towards Youth Centres in Terms of Family Income Level

	Family income level	n	Mean	Sd.	f	p	Significant Difference
Participation	≤5000 TL [a]	47	60.08	8.34	2.523	0.084**	-
	5001-10.000 TL [b]	72	55.80	12.90			
	≥10.001 TL [c]	22	55.04	10.38			
Volunteering	≤5000 TL [a]	47	16.68	3.31	0.939	0.394**	-
	5001-10.000 TL [b]	72	15.97	3.93			
	≥10.001 TL [c]	22	15.50	3.23			
Attitude Scale towards Youth Centre Activities	≤5000 TL [a]	47	76.76	11.44	2.107	0.125**	-
	5001-10.000 TL [b]	72	71.77	16.60			
	≥10.001 TL [c]	22	70.54	13.45			

*Bonferroni correction was applied for Post Hoc Analyses: p<0.0016. **Statistical difference between groups.

When Table 9 is examined, no significant difference was found in attitude levels of youth centre member university students in terms of the variable of family income level (p>0.05). According to the analysis results, it is observed that the family income level variable has no effect on the attitude level towards the youth center. Due to the absence of any significant differences in the obtained findings, the Bonferroni multiple comparison test was not applied (Table 9).

Table 10. Attitude Levels of Youth Centre Member University Students towards Youth Centres in Terms of Having A Youth Centre Member in The Family

	The state of having a youth centre member in the family	N	Mean	SD	t	P
Participation	Yes	53	55.26	15.27	-1.513	0.195
	No	88	58.22	7.95		
Volunteering	Yes	53	15.64	4.55	-1.254	0.262
	No	88	16.43	2.92		
Attitude Scale towards Youth Centre Activities	Yes	53	70.90	19.63	-1.473	0.203
	No	88	74.65	10.61		

When Table 10 is examined, no significant difference was found in attitude levels of youth centre member university students in terms of the variable of having a youth centre member in the family (p>0.05). According to the analysis results, it is observed that the The state of having a youth centre member in the family variable has no effect on the attitude level towards the youth centre (Table 10).

DISCUSSION & CONCLUSION

The present study was conducted to examine youth centre member university students' attitude levels towards youth centres. While no significant difference was observed in the variables of gender, education level, family income level and having a youth centre member in the family, a significant difference was found in some sub-dimensions and scale total scores in terms of the variables of age, membership duration, frequency of visiting, number of siblings and state of doing sports.

In terms of the gender variable, no significant difference was found in the sub-dimensions and total scores of the attitude scale towards youth centre activities. The result obtained may

be due to the fact that male and female participants are engaged in similar activities. When the literature is examined, the results of Ataç (2018)'s study are in parallel with the results of the current study. In the study conducted by Yavuz (2017), the quality of service in youth centers was examined. According to the research, no difference was observed based on the gender variable. In Katar's (2022) study, which focused on activities in youth centers, a significant difference was found in sports activities. The analysis results indicated that men had higher average scores compared to women. In another study conducted by İlkutlu (2019), perceptions of service quality in youth centers in the Mediterranean Region showed more favorable results among women compared to men. Demirci (2019) also examined the service quality of youth centers in their study. The results revealed a significant difference in the sub-dimension of physical environment quality. Another research conducted by Yılmaz (2019) investigated attitudes toward youth centers. In this study, a significant difference was found in the physiological dimension. In terms of the age variable, a significant difference was found in total scale score and scores of participations and volunteering sub-dimensions of the attitude scale towards youth centre activities. It was found that the students between the ages of 18 and 20 had higher mean scores than the students in other age categories. It can be said that this result is due to high curiosity and excitement levels of young participants. While the results of the present study are not in parallel with Ataç (2018)'s study, they are in parallel with the results of Yıldız & Kırtepe (2020). Böke et al. (2019) examined the self-efficacy levels of individuals in the youth center. However, no significant difference was found based on the age variable. In terms of education level, no significant difference was found in the sub-dimensions and total scores of the attitude scale towards youth centre activities. It can be stated that education level has no effect on university students' attitudes towards youth centre activities. The results of Ataç (2018) and Yıldız and Kırtepe (2020)'s studies are in parallel with the results of the present study. In the study by Karabulut & Pulur (2011), the problem-solving skills of young members in youth centers were examined. When analyzed based on the variable of education level, it was observed that individuals with associate degrees (2-year education) had higher mean scores. In terms of membership duration, significant difference was found in the participation and volunteering sub-dimensions and total scores of the attitude scale towards youth centre activities. Results show that students with a membership of 24 months and longer had higher mean scores than the others. This result can be due to satisfaction and habituation states of students who have longer duration of membership. Ataç (2018)'s study found no significant difference in terms of membership status. In their study, Sönmezoğlu et al. (2004) stated that individuals' mental states improved as their membership duration increased. In terms of the variable of frequency of visiting, significant difference was found in the participation and volunteering sub-dimensions and total scores of the attitude scale towards youth centre activities. Analyses showed that the participants who visited youth centre a few days a week had higher mean scores than the other participants. It can be said that university students cannot participate in the activities of youth centres continuously due to their responsibilities related to their education. The results of Yıldız & Kırtepe (2020)'s study and the results of this study are not parallel. In terms of the variable of number of siblings, a significant difference was found in the sub-dimensions of participation and volunteering and the total score of the attitude scale towards youth centre activities. It was found that the participants who had three or more siblings had higher scores than the other participants. This result may be due to the fact that students who have higher number of siblings may be more socialized. When the literature is reviewed, it can be seen that the results of Ataç (2018)'s study and the present study are not parallel. In terms of the variable of family income level, no significant difference was found in sub-dimensions and total scores of the attitude scale towards youth centre activities. While the results of Yıldız & Kırtepe (2020) are not similar to the results of the present study, the results of Ataç (2018)'s study support the results of the present study. In terms of the state of doing sports, significant difference was found in volunteering sub-dimension and total scores of the attitude scale towards youth centre activities. It can be seen that students who do sports have

higher scores. This may be due to the fact that students who do sports have higher levels of responsibility. No significant difference was found in volunteering sub-dimension and total scores of the attitude scale towards youth centre activities in terms of the variable of having a youth centre member in the family. This result shows that having a youth centre member in the family does not affect attitudes of students towards youth centre activities. When the literature is reviewed, no studies were found on the states of doing sports and having a youth centre member in the family and levels of attitude towards youth centre activities.

Limitations & Recommendations

The study has some limitations. Only one measurement tool, namely the Attitude Scale towards Youth Centre Activities, was used in the study. Additionally, it was supplemented with a Personal Information Form. Furthermore, data collection was carried out solely based on university students who were members of the youth centre.

Examining attitudes towards youth centre activities will reveal the activity quality of youth centres. It can be said that youth centres, where especially university students visit often, are a major factor in the students' spending their leisure time and revealing some of their talents with its activities and organizations. According to the results of the study, it is thought that it will be important to have activities for the participation of new members of youth centres to youth centre activities. In addition, it can be suggested for university students to organize activities by considering their educational life in order to participate more frequently in youth centre activities. In addition to these, it will be important to shape youth centres according to the cultural structure of their locations, organize activities that will excite them, ensure that the staff at youth centres are equipped to solve the problems of young individuals, take measures against harmful habits, organize seminars to help improve the problem-solving skills of young individuals at youth centres, and facilitate communication between youth centre staff and families.

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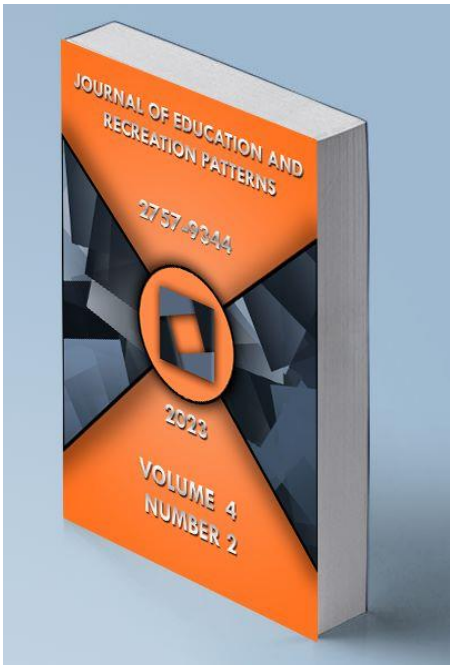
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Boreout at the Office: The Role of Leisure Boredom in Predicting Job Burnout and Social Media Addiction

Feyza Meryem KARA[1], Halil SAROL[2], Bülent GÜRBÜZ[3], Rıfat Kerem GÜRKAN[4]

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[1] Feyza Meryem KARA, Kırıkkale University, feyzameryemkara@gmail.com, https://orcid.org/0000-0001-9886-4947

[2] Halil SAROL, Gazi University, hsarol@gmail.com, https://orcid.org/0000-0002-1678-3244

[3] Bülent GÜRBÜZ, Ankara University, bulentgurbuz@gmail.com, https://orcid.org/0000-0003-2424-2111

[4] Rıfat Kerem GÜRKAN, Kırıkkale University, rkgurkan@kku.edu.tr, https://orcid.org/0000-0003-2802-9350

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Boreout at the Office: The Role of Leisure Boredom in Predicting Job Burnout and Social Media Addiction

Feyza Meryem Kara[1], Halil Sarol[2], Bülent Gürbüz[3], Rıfat Kerem Gükan[4]

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ABSTRACT

In this study, we aimed to examine the levels of leisure boredom, job burnout and social media addiction according to some variables, and the predictive power of the leisure boredom on job burnout and social media addiction was determined. In this quantitative study, the relational screening model was used. Convenience sampling method was preferred in determining the study group. 224 women (54.7%) and 185 men (45.2%) participated in the study. The results indicated that women had higher levels of job burnout than men. Furthermore, individuals who regularly participated in physical activity had lower levels of job burnout and leisure boredom. In addition, the study determined that participants' virtual tolerance and virtual communication levels increased with an increase in their daily social media use frequency. The results revealed that leisure boredom was a significant predictor of participants' job burnout and social media addiction. It can be inferred that as participants' leisure boredom increased, their job burnout and social media addiction increased.

Keywords: Job Burnout, Leisure Boredom, Social Media Addiction.

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INTRODUCTION

The inherent conflicts between individuals' expectations and perceptions of experience have long been the subject of research (Wang, 2019; Weissinger et al., 1992). When individuals are less intrinsically motivated, they may find leisure activities meaningless or less satisfying. This may cause individuals to become more bored in their free time (Wang, Xia, & Yu, 2022). Individuals who have a lot of time but few activity options for engagement may also experience perceived leisure boredom (Yuwono & Virlia, 2022). People are more likely to engage in fun activities that enable instant gratification and that are time-consuming to relieve the leisure boredom (Wu-Ouyang, 2022). At this point, given that emotions and behaviors are interrelated, the factors that affect or are experienced in work life come to the fore.

Currently, problems such as feeling demoralized and stressed in the work environment or a gradual decrease in motivation to go to work point to job burnout syndrome (Maslach et al., 2001). Job burnout syndrome is briefly defined as "a syndrome of emotional exhaustion, depersonalization, and feelings of a reduced personal accomplishment seen in those who are in hectic relationships with people due to their job" (Jackson & Maslach, 1982). The concept of job burnout is included in studies related to disciplines such as organizational psychology, management psychology, and social psychology (Maslach et al., 2001). Studies on the use of smart devices in the social psychology domain, which is one of these disciplines, have recently come to the fore (Derks & Bakker, 2014). According to research, most workplace activities are performed by employes, including social media communication, checking friends location updates, and match scores (Pitt & Bennett, 2008; Stănculescu & Griffiths, 2022). (Pitt & Bennett, 2008; Stănculescu & Griffiths, 2022). In this regard, Rhee and Kim (2016) stated that working individuals spend even their break time looking at applications on their smartphones (e.g., browsing social media) and have difficulties starting work at the end of the break. Today, research has begun to focus on the relationship between social media and professional emotions, thereby highlighting the leisure boredom. The study focused on the relationship among leisure boredom, job burnout, and social media addiction, as no study has focused on this relationship in the relevant literature.

Leisure Boredom

The concept of leisure, which includes freely chosen activities other than compulsory tasks and needs, is a significant research topic as it is related to individuals' perceptions of boredom and participation in social activities (Gürbüz & Henderson, 2013; Kara et al., 2014). The dissatisfaction that an individual experiences when he/she cannot find an activity to do alone or to be interested in during leisure causes boredom (Shaw et al., 1996). In this context, Iso-Ahola and Weissinger (1990) defined perceived leisure boredom as "the subjective perception of low or insufficient stimulus or motivation for the current leisure experiences." Leisure boredom has several social determinants, and this concept is also associated with modernity. In today's modern world, technology can make our lives easier, but it can also increase our perception of boredom. Studies have indicated that individuals who experience leisure boredom engage in a set of harmful behaviors (Iso-Ahola & Crowley, 1991; Weissinger, 1995).

In the last three decades, researchers have attempted to associate leisure boredom with different emotional and social problems (Wang, 2019; Weissinger, Caldwell & Bandalos, 1992). Studies have determined that the perception of boredom emerges with a combination of psychological factors (Iso-Ahola & Crowley, 1991; Wang, 2019). Results have indicated that a lack of incentives in the workplace, the uninteresting nature of the work, or lack of work for individuals can result in boredom perception (Schaufeli & Salanova, 2014). However, in addition to boredom, the problem of social media use has come to the fore (Han et al., 2020). In addition, excessive use of social media at work and its negative effects on work performance

have been identified (Junco, 2012). An analysis of the literature has indicated a limited number of studies (Kara, Gürbüz, Öncü, 2019) on the reflections of leisure boredom on work life in Türkiye. Leisure boredom may be related to problems such as job burnout and social media addiction.

Job Burnout

As industrialization has become more widespread, research on the concept of burnout has increased in developed countries (Feng, 2022; Weber & Jaekel-Reinhard, 2000). According to Maslach and Jackson (1981), burnout is a result of chronic stress (in the workplace) that is not successfully addressed. Job burnout manifests due to the sense of inadequacy that an individual feels toward the responsibilities and tasks that he/she needs to perform in his/her daily life and is the behavior of the person distancing himself/herself from current responsibilities (Maslach & Leiter, 2016). However, research has focused on the concept of burnout as a multidimensional (stress, mental distancing reaction and negative beliefs) (Schaufeli & Salanova, 2014).

Since the introduction of the concept of burnout, it has been examined in different professional fields. Researchers have attempted to reveal the effects of burnout on the individual's life (Lubbadeh, 2020; Zhong et al., 2009). It has been discovered that occupations such as education, medical, and nursing are the ones most likely to experience job burnout (Cha et al., 2000). Recent studies have sensitively investigatigated the concept of burnout and quality of life, work–family conflict, work engagement, stress, anxiety and workplace loneliness, depression, insomnia, and Internet addiction during the COVID-19 pandemic period (Kloutsiniotis et al., 2022; Sun et al., 2022).

Job Burnout

With the rapid development of information and telecommunication technology in recent years, there has been a revolution in the way people communicate with each other, and social media platforms have become indispensable. Excessive use of social media platforms is called addiction (Liu & Ma, 2020). In this context, social media addiction is defined as the use of social media that causes significant disruption in an individual’s life and affects daily life tasks and behaviors if individuals cannot control them (Ryan et al., 2014).

Addiction to social media use has many harmful effects on individuals’ lives (O'Reilly et al., 2018). Researchers have stated that social media addiction causes individuals to have a more reserved and lonelier attitude, negatively affects sleep quality, decreases academic performance, and increases depressive behaviors (Haand & Shuwang, 2020; Satıcı et al., 2022; Xanidis & Brignell, 2016).

Relationship Among Leisure Boredom, Job Burnout, and Social Media Addiction

According to Schaufeli and Salanova (2014), boredom is caused by the feeling of under-arousal, burnout is caused by over-arousal, and all variables are interrelated. Therefore, these variables are considered to be cyclical, and employes may be prone to boredom because they work in boring (monotonous) jobs or because of their own nature. In this context, researchers have believed that increased job burnout may increase burnout in daily life (Hakanen & Bakker, 2017). Although leisure participation and work life appear as different fields, it is stated that the conflict between work life and leisure participation negatively affects individuals (Lin et al., 2014). Tepavčević et al. (2019), who stated that lifestyle is often determined by the way of spending leisure, concluded that the conflicts that occur in individuals’ work life and leisure participation increase job burnout in individuals. Mansour and Tremblay (2016) stated that leisure participation and work–life incompatibility increase job burnout in individuals and that individuals quit their jobs in the following process.

However, some researchers have begun to focus on the relationship between occupational moods and social media (Han et al., 2020). Studies have indicated that excessive use of social media negatively affects work and study, reducing face-to-face interactions and developing a sense of burnout (Andreassen, 2015; Junco, 2012). Excessive usage of social media at work diminishes cooperation with teammates, causes alienation and burnout, and consequently has an adverse effect on worker productivity (Junco, 2012).

In addition, social media is viewed as an important leisure activity, and its use is becoming widespread (Albrechtslund & Albrechtslund, 2014). In this context, Pater et al. (2017) stated that along with providing convenience in the lives of individuals, the use of social media causes many problems. Studies have indicated that leisure boredom plays an important role in cell phone, Internet, and game addiction (Leung, 2008; Lin, & Wu, 2009; Pater et al., 2017; Zhou & Leung, 2012). Studies have also emphasized that as leisure boredom increases, social media addiction increases (Ayhan et al., 2021; Liang et al., 2022).

In this context, one can say that social media will provide more opportunities to overcome the perception of boredom, but excessive social media use may also create dissatisfaction over time. In sum, it is thought that the perception of boredom may trigger addiction as "optimal arousal" is achieved. Researchers have predicted that job burnout may increase with the triggering of social media addiction (Andreassen, 2015; Junco, 2012; Schaufeli & Salanova, 2014; Zheng & Ling, 2021). According to literature, in this research its aimed to examine the levels of leisure boredom, job burnout and social media addiction according to some variables and the predictive power of the leisure boredom on job burnout and social media addiction was determined. Considering the information presented above, the authors have developed the following hypotheses:

H1: There were significant differences in leisure boredom, job burnout and social media addiction about gender.

H2: There were significant differences in leisure boredom, job burnout, and social media addiction concerning physical activity participation.

H3: There were significant differences in leisure boredom, job burnout and, social media addiction with regard to social media use frequency.

H4: Leisure boredom is positively related to job burnout.

H5: Leisure boredom is positively associated with social media addiction.

H6: Leisure boredom predicts job burnout and social media addiction.

METHOD

The aim of this study is to examine the levels of leisure boredom, job burnout and social media addiction according to some variables and the predictive power of the leisure boredom on job burnout and social media addiction was determined. In this quantitative study, the relational screening model was used. Convenience sampling method was preferred in determining the study group.

Population and Sample of the Study

The study reached 482 individuals working in different job groups in Ankara, the capital of Turkey, through convenience sampling. Convenience sampling is a common form of sampling used in research with a wide number of participants. The convenience sampling is popular because it is not costly, it is not as time-consuming as other sampling strategies and is

simple. When used to create a potential hypothesis or operation target, the convenience sampling method is very useful (Stratton, 2021). After removing erroneous and problematic data, the analysis continued with the data of 409 individuals. Furthermore, 224 women (54.7%) and 185 men (45.2%) participated in the study; 203 (49.6%) of the participants worked in the private sector, and 206 (50.3%) worked in the public sector. While 131 (32.0%) of the participants were single and 278 (67.9%) were married, 201 (49.1%) regularly participated in physical activities and (49.1%) did not regularly participate in physical activities was 208 (50.8%).

Data Collection Tools & Process

The data collection tool used in the study comprised 2 different parts. The first part included the sociodemographic form created by the researchers. The second part included "The Burnout Measure-Short Version", "The Social Media Addiction Scale-Adult Form", and "The Leisure Boredom Scale". The questionnaire also included sociodemographic questions about individuals' gender, age, physical activity participation, and frequency of social media use.

The Leisure Boredom Scale (LBS): A Turkish validity and reliability study of the scale developed by Iso-Ahola and Weissinger (1990) to assess individuals' perceptions of leisure boredom was conducted by Kara et al. (2014). The scale comprised two sub-dimensions: boredom (5 items) and satisfaction (5 items). Participants evaluated the statements in the scale on a 5-point Likert-type scale. According to the results of the analysis conducted within the scope of this study, the internal consistency coefficient of the scale was .76 for the boredom sub-dimension and .75 for the satisfaction sub-dimension.

The Burnout Measure – Short Version (BMS): The scale developed by Malach-Pines (2005) to determine the job burnout levels of individuals was adapted to Turkish by Capri (2013). The scale was unidimensional and comprised 10 items. The BMS is a 7-point Likert-type scale, and a high score indicates a high level of burnout. In this study, the internal consistency coefficient of the scale was .90.

The Social Media Addiction Scale-Adult Form (SMAS-AF): The researchers used the MAS-AF) developed by Şahin and Yağcı (2017) to measure participants' social media addiction. The scale comprised 20 questions and 2 sub-dimensions (virtual tolerance and communication). SMAS-AF was a 5-point Likert-type scale. Within the scope of this study, the scale internal consistency coefficient was .75 for the virtual tolerance sub-dimension and .83 for the virtual communication sub-dimension.

The data were collected via web-survey with the guidelines in "The Checklist for Reporting Results of Internet E-Surveys" prepared by Eysenbach (2004). Via email lists and social media sites like Facebook and Instagram, the web-survey was shared. The individuals were first given a brief explanation of the reason for the data collecting and a commitment of anonymity. The participants submitted the scale form in an average of 15 to 20 min.

Data Analysis

The data analysis performed using the SPSS 26.0 program. Skewness, kurtosis, and histogram graphics were used to verify if the data had a normal distribution. The analysis indicated that the data's skewness and kurtosis values ranged between -1 and +1, indicating that they were distributed normally (George & Mallery, 2010). Independent samples t-test, MANOVA, ANOVA, Pearson correlation, and regression analysis were employed because the data had a normal distribution.

FINDINGS

In this section, the levels of leisure boredom, job burnout and social media addiction relationship is explained according to some different variables.

Table 1. MANOVA and t-Test Results According to Gender

	Male (224)		Female (185)		F	p
LBS	**M**	**Sd.**	**M**	**Sd.**		
Boredom	1.96	.68	1.97	.66	.050	.82
Satisfaction	3.84	.59	3.74	70	2.37	.12
BMS	2.76	1.03	3.12	1.04	12.13	.01
SMAS-AF						
Virtual tolerance	2.30	.47	2.28	.49	.17	.68
Virtual communication	2.18	.61	2.29	.66	3.10	.07

*p<0.05, **p<0.01, ***p<0.001

MANOVA revealed no statistically significant difference in leisure boredom and social media addiction with respect to gender [F (5.403) = 5.121, p = 0.001] [Pillai's Trace = 0.06, p = 0.001]. However, independent samples t-test analysis results revealed significant differences in the mean scores of "The Burnout Measure" (t (430) = 0.637; p < 0.05) in favor of female participants (Table 1).

Table 2. MANOVA and t-Test Results Of According to Physical Activity Participation

	Yes (201)		No (208)		F	p
	M	**Sd.**	**M**	**Sd.**		
LBS						
Boredom	1.81	.58	2.12	.71	22.36	.00
Satisfaction	3.93	.64	3.67	.63	16.69	.00
BMS	2.76	.99	3.15	1.07	-3.80	.00
SMAS-AF						
Virtual tolerance	2.30	.46	2.29	.49	.03	.85
Virtual communication	2.28	.62	2.18	.65	2.23	.13

*p<0.05, **p<0.01, ***p<0.001

The results of MANOVA revealed a statistically significant difference in leisure boredom based on participants ' participation in physical activity [F (5.403) = 8.331, p = 0.001] [Pillai's Trace = 0.00; p = 0.001]. Participation in physical activity statistically significantly affected boredom (F (1,407) = 8.484; p < .005; η2 =.9) and satisfaction (F (1,407) = .130; p < .005; η2 = .9,7) subscales. In the mean scores of the sub-dimension "boredom," the mean scores of those who did not participate in physical activity were found to be higher than the mean scores of those who participated in physical activity. However, when the mean scores of the "dissatisfaction" sub-dimension were examined, it was determined that the mean scores of those who participated in regular physical activity were higher than those of those who did not participate in physical activity. Independent samples t-test revealed significant differences in mean scores of the job burnout (t (407) = -3.80; p < 0.05) in favor of participants who did not participate in regular physical activity (Table 2).

Table 3. MANOVA Results of According to Social Media Use Frequency

	Less than 1 h		1-3 hours		4-6 hours		More than 6 h		F	P
	M	Sd.	M	Sd.	M	Sd.	M	Sd.		
LBS										
Boredom	1.94	.67	1.95	.65	2.05	.70	2.03	.95	.41	.74
Satisfaction	3.68	.78	3.84	.62	3.69	.60	3.87	.69	.68	.18
BMS	2.90	1.13	2.89	1.01	3.22	1.03	3.40	1.27	2.76	.05
SMAS-AF										
Virtual tolerance	2.01	.39	2.26	.44	2.57	.47	2.74	.63	4.05	.00
Virtual com.	1.86	.60	2.23	.61	2.47	.59	2.73	.80	4.48	.00

*p<0.05, **p<0.01, ***p<0.001

MANOVA analysis indicated a statistically significant difference in social media addiction about participants' frequency of social media use [Pillai's Trace: 0.000; [F (15.120) = 4.483, p=0.001]. The frequency of social media use statistically significantly affected virtual tolerance (F (3.4053) = 1.623; p < .005; η2 =.12) and virtual communication (F (3.405) = 1.884; p < .005; η2 = .8), with participants (more than 6 hours) presenting higher social media addiction scores than participants in all other groups (Table 3).

Table 4. Correlation Test Results for LBS, BMS, and SMAS-AF

	Boredom	Satisfaction	Burnout	Virtual tol.	Virtual com.
Boredom	1				
Satisfaction	-440**	1			
Burnout	.305**	-106*	1		
Virtual tol.	.216**	.024	.298**	1	
Virtual com.	.140**	.035	.201**	.691**	1

The results of the correlation analysis conducted to assess the relationship among leisure boredom, burnout, and social media addiction indicated a positive correlation between boredom and burnout (r = .30; p 0.05), between virtual tolerance and burnout (r = .21; p 0.05), and between virtual communication and burnout (r = .14; p = 0.05). However, a negative correlation was observed between job satisfaction and burnout (r = -.10; p 0.01) (Table 4).

Table 5. Regression Analysis of the Effects of LBS

	Boredom	Satisfaction
	B	**β**
BMS	.32*	.03
R=0.30; R^2=0.09; Adjusted R^2=0.08; $F_{(2.406)}$=21.017; p<0.01		
SMAS-AF		
Virtual Tolerance	.28*	.14
R=0.24; R^2=0.06; Adjusted R^2=0.06; $F_{(2,406)}$=14.003; p<0.01		
Virtual Communication	.19*	.12
R=0.17; R^2=0.03; Adjusted R^2=0.02; $F_{(2.450)}$=6.559 p<0.01		

*p<0.05, **p<0.01, ***p<0.001

Regression analysis was conducted to examine the predictive power of adults ' leisure boredom on job burnout and social media addictions. The findings obtained indicated that the "boredom" sub-dimension was a predictor of job burnout (R = 0.30; R2=0.09; R2=0.08;

F(2.406) = 21.017; p < 0.01), "virtual tolerance" sub-dimension (R = 0.24; R2=0.06; F(2.406) = 14.003; p < 0.01), and "virtual communication" sub-dimension (R = 0.17;R2=0.03; R2=0.02; F(2.450) = 6.559 p < 0.01). Analysis indicated that "boredom" sub-dimension was significant with job burnout (β = 0.32; p < 0.01), "virtual tolerance" sub-dimension (β = 0.28; p < 0.01), or the "virtual communication" sub-dimension (β = 0.19; p < 0.01). In addition, "satisfaction" sub-dimension was not a predictor in the regression analysis model. "Satisfaction" was not a significant predictor of job burnout (β = −0.03; p > 0.01), "virtual tolerance" sub-dimension (β = 0.14; p > 0.01) and "virtual communication" sub-dimensions (β = 0.03; p > 0.01) (Table 5).

DISCUSSION

This study aimed to examine the levels of leisure boredom, job burnout, and social media addiction according to some variables and determine the predictive power of the leisure boredom on job burnout and social media addiction. The findings were interpreted according to the analysis results obtained from the study.

In the results obtained, according to the mean scores of "BMS," female participants experienced more burnout than male participants. The negative factors they were exposed to in their professional life (e.g., excessive workload, etc.) were more effective in this situation compared with those for male participants. Bielby and Baron (1986) reported that employers positively discriminate between jobs assigned to male employes and those assigned to female employees. Many studies have indicated that women are more stressed than men in the work environment and that this situation negatively affects female employes (Burke, 2002; Jick & Mitz, 1985). Purvanova and Muros (2010) examined 183 studies in their meta-analysis on job burnout and stated that according to the literature, women are more likely to experience burnout than men. Within the scope of the findings obtained from the research, it is thought that the roles that women undertake outside of work life (e.g., housework, childcare, etc.) are also effective in the high level of burnout (Eagly & Wood, 2012). Awareness should be created to reduce the problems faced by women in work life. It is very important to carry out in-depth research on work, social environments and cultural effects that are effective in feeling women's job burnout more than male employees. One can say that burnout will decrease with the reduction or equal sharing of responsibilities undertaken in social life.

According to the findings of the study, when the mean scores of "LBS" related to participation in physical activity were analyzed, the researchers concluded that individuals who did not participate in physical activity had higher mean boredom scores. Individuals who participated in physical activity had higher mean scores of dissatisfaction and lower mean scores of boredom. Physical activity is considered one of the most important leisure activities in terms of its positive effects on individuals (Henderson & Ainsworth, 2002). It is effective for individuals to lead an active life, feel good about themselves, and move away from a monotonous lifestyle (Brooks & Magnusson, 2007). It is stated that individuals with a monotonous and routine lifestyle have a higher rate of boredom than others (Wang, 2019). Our research shows similarities with the research that found that individuals who participated in physical activity were more successful in coping with their leisure boredom (Kara, 2019). Participation in physical activity is effective in the physical, social and psychological well-being of individuals. Physical activity should become continuous for all individuals. In this way, a more active lifestyle occurs. It is thought that individuals would leave the monotonous activities with an active lifestyle.

Another finding of the research is that individuals who do not participate in physical activity have higher mean scores of job burnout than those who participate in physical activity. Toker and Biron (2012) stated that physical activity reduces job burnout and stress, whereas

employes who do not participate in physical activity experience these feelings more intensely. Naczenski et al. (2017) examined 170 studies investigating the relationship between physical activity and burnout. The results obtained were similar to those of our study, and it was stated that individuals who participated in physical activity had low levels of burnout. It is thought that reducing the negative consequences of job burnout can improve the quality of life of working individuals and prevent organizational losses (Awa et al., 2010; Lubbadeh, 2020). In this context, participation in physical activity is critical to job burnout. Institutions/companies may reduce burnout by supporting the orientation of physical activity at the leisure time of employees. In this way, the increase in the efficiency of the work would be supported.

However, in line with the findings of our study, the researchers observed that the mean scores of virtual tolerance and virtual communication of individuals whose social media usage time increased also increased. It is thought that the increase in the duration of social media use and exposure to more content with increasing duration effectively increases virtual tolerance. According to Statista (2021), individuals have the opportunity to communicate with each other through applications, the number of which has reached billions today. Through these applications and their existing networks, individuals can stay in constant contact with each other and do so quite easily (Cheng et al., 2019; Westerman et al., 2014). In this context, individuals' use of social media increases, their virtual communication also increases.

Based on the findings obtained, the study concluded that the average scores of job burnout and social media addiction increased with an increase in individuals' boredom. Lin et al. (2014) stated that participation in leisure activities affects job burnout. Similarly, Tepavčević et al. (2019) indicated a significant relationship between individuals' leisure and job burnout. Additionally, in recent years, individuals have turned to passive activities in their free time, and social media use is one of these passive activities (Liu & Ma, 2020). Studies have stated that as the leisure boredom increases in individuals, social media and Internet addiction also increase. We reached a similar conclusion to the findings of our study (Ayhan et al., 2021; Kara & Gürbüz, 2022). It is stated that the changing leisure use styles of individuals with the development of technology in recent years are effective in this situation. When the literature is examined, the negative effects of job burnout and social media addiction are explained. Improving the forms of leisure time evaluation of individuals is considered important. It is thought that individuals can leave both work and various negative habits with a well-evaluated leisure time.

Conclusion

In conclusion, few studies have investigated the effects of perceived leisure boredom on job burnout and social media addiction. However, our study analyzed this effect on a sample of working women and men living in Turkey. This study concluded that female participants had higher levels of burnout than male participants. Participation in physical activity reduces the leisure boredom. Another result of the study was that participation in physical activity decreased job burnout. In addition, one can say that social media use increases social communication and social tolerance and that as individuals' leisure boredom increases, their job burnout and social media addiction will also increase.

Recommendation

In this study, some factors that affect leisure boredom, job burnout, and social media addiction were examined, and the results were limited with to these factors. Further studies with larger samples and diverse professions can be designed, even if the sample size is acceptable for statistical assumptions. In addition, in future studies, the relationship between different variables such as cyber loafing, and social loafing and cynicism in business life and the perception of leisure time can be discussed.

Limitations

This study focused on examining the levels of leisure boredom, job burnout and social media addiction according to some variables as well as determine the predictive power of the leisure boredom on job burnout and social media addiction. The research is limited to the participation of individuals from different job groups. Scales and questionnaires were used to collect the information obtained in the research. In-depth investigation of the obtained data with qualitative research methods of the perception of leisure time boredom within the scope of different samples and subjects is recommended for the future studies.

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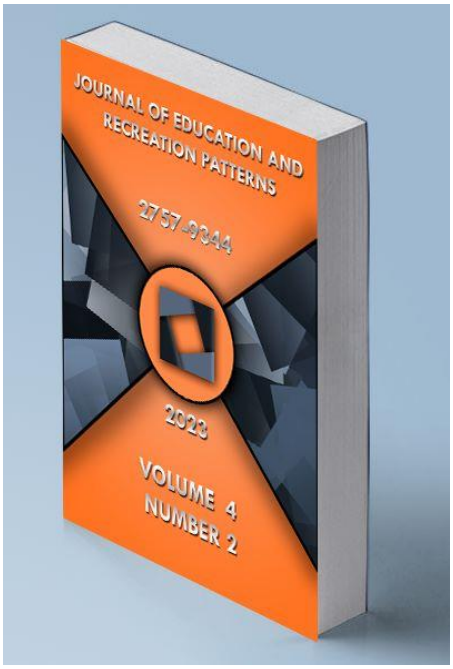
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The Relationship Between Leisure Crafting, Job Finding Anxiety and Life Satisfaction

Ömer Faruk YAZICI[1], Mustafa Barış SOMOĞLU[2], Mehmet ÖZTAŞ[3], Bahar GÜLER[4]

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[1]Ömer Faruk YAZICI, Tokat Gaziosmanpaşa University, Faculty of Sport Sciences, omerfaruk.yazici@gop.edu.tr, https://orcid.org/0000-0003-0598-3862
[2]Mustafa Barış SOMOĞLU, Gümüşhane University, School of Physical Education and Sports, barissomoglu@gmail.com, https://orcid.org/0000-0001-5811-384X
[3]Mehmet ÖZTAŞ, Tokat Gaziosmanpaşa University, Faculty of Sport Sciences, mehmet.oztas@gop.edu.tr, https://orcid.org/0000-0003-4689-6490
[4]Bahar GÜLER, Tokat Gaziosmanpaşa University, Faculty of Sport Sciences, bahar.guler@gop.edu.tr, https://orcid.org/0000-0003-0961-9195

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The Relationship Between Leisure Crafting, Job Finding Anxiety and Life Satisfaction

Ömer Faruk Yazıcı[1], Mustafa Barış Somoğlu[2], Mehmet Öztaş[3], Bahar Güler[4]

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ABSTRACT
The aim of this study was to determine the leisure crafting, job finding anxiety and life satisfaction levels of the students studying in the faculty of sport sciences according to some demographic variables and to determine the relationship between the variables. The study employed the relational survey model. The research group consisted of 458 ($Mean_{age}$.= 21,53±2,06) people who were determined via simple sampling method and who were studying at the Faculty of Sport Sciences. The study used "Leisure Crafting Scale (LCS)", "Sport Sciences Students' Job Finding Anxiety Scale (JFAS)" and "Life Satisfaction Scale (LSS)". t-test and ANOVA tests were applied to assess the levels of LCS, JFAS and SSS according to various demographic characteristics of the participants. Furthermore, the research model that was developed in order to investigate the relationship between the scales was assessed using the Structural Equation Model (SEM) test. The results of the research showed that there was a no significant difference according to the “gender” variable in the scores of LCS, JFAS and LSS in the t-test results, but showed a significant difference according to the "participation in the development seminar" variable. With respect to the ANOVA results, it was determined that there was a significant difference in the scores of LCS, JFAS and LSS according to the variables of “income level" and "type of leisure time utilization". Additionally, the hypotheses developed within the confines of the study model were confirmed based on the findings of the SEM analysis. Accordingly, it was observed that the variance rate in which leisure crafting accounted for life satisfaction was 45% (R2 = ,45, p = ,001), which was -25% when it came to accounting for job finding anxiety (R2 = ,-25, p = ,001). As a result, it can be concluded that leisure crafting, job finding anxiety and life satisfaction levels vary depending on a variety of demographic parameters, and life satisfaction levels of students are affected by leisure crafting and job finding anxiety.

Keywords: Anxiety, Leisure Crafting, Satisfaction, Student

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INTRODUCTION

Time is a very valuable, unique resource that is shared equally among all people but cannot be utilized in the same way. This priceless resource cannot be used like currency, kept, lent to another person, used as a commodity, and cannot in any way be replaced. (Akgül & Karaküçük, 2015). One may argue that time, which is so valuable, is really just life. Making efficient use of the time at hand is crucial. Karaküçük (2008) defines leisure time as a period of time that the individual has the right to use freely for recreation, resting, having fun, or personal development in line with his or her inclinations and wishes, excluding mandatory employment. Leisure time arises after well-planned and utilized time.

Particularly in 2019, higher education was interrupted and subsequently completed through distant learning, students were removed from the education environment, and that they had more free time. This was owing to the global epidemic and the earthquake of the century that occurred in our country. For this reason, university students should pay special attention to how they use their leisure time. Students' actions during this process have an impact on other areas of their lives, either directly or indirectly. A considerable majority of young people, it has been found in several surveys with university students, do not know how to make use of their free time or spend it in idle pursuits. (Demir, 2003). The statement made by Karaküçük in 2008 that "leisure time is like a double-edged sword" might be used to illustrate this predicament. When it is utilized properly, it promotes societal and individual growth; when it is misused, it leads to issues like unhealthy habits, disorganization, discontent, boredom, and depression. In a nutshell, one could say that it has a detrimental impact on the person's overall level of happiness.

Finding a job is without a doubt the biggest challenge facing college students. According to ILO (2022), unemployment is a significant social issue that has a detrimental impact on both economic and social life and is growing daily as a result of globalization. Every person requires a work that is respectable of human dignity and provides income, whether or not it is connected to the education they have earned (Çetinceli & Tüzün, 2022). The number of unemployed people in Turkey aged 15 and over increased by 65,000 in February 2023 compared to the previous month, reaching 3 million 514 thousand, while the unemployment rate increased by 0.2 points to 10.0%, according to labor force statistics compiled by the Turkish Statistical Institute (TURKSTAT). In addition, the unemployment rate for men was 8.7% and for women it was 12.6%. (TURKSTAT, 2023). For young individuals who are about to embark on their lives, the prospect of not being able to find employment and remaining unemployed after graduation creates enormous anxiety and sadness. Concerns at the beginning of the journey quickly develop into worries about job and financial security as one approaches graduation (Çetinceli & Tüzün, 2022). Young people who are unable to achieve economic independence and power are compelled to remain dependent on their families and lose hope for the future (Kart & Erdost, 2008).

Leisure Crafting

Being skilled and ingenious is a sign of skillfulness. On the other side, the term "leisure crafting" refers to a proactive effort that a person may choose to undertake in order to accomplish his or her leisure-time objectives. It also describes proactive efforts to realize objectives connected to interpersonal relationships, education, and personal growth (Sürücü & Ertan, 2022). According to Berg, Wrzesniewski & Dutton (2010), it is the actualization of people's leisure time in a way that appeals to their desires and value judgments. Leisure crafting was described as a non-monotonous, proactive, intentional, and serious endeavor by Fritsch et al., (2005) and Stebbins (2007). According to Sonnentag and Fritz (2007), through achieving personal learning through leisure crafting, people will grow through difficulties that boost their

good feelings. Leisure crafting, according to Snir & Harpaz (2002), comprises the growth of experience, friendships, and interpersonal connections.

Job Finding Anxiety

Anxiety is a concept that has a significant impact on people's daily lives and is typically seen as an emotional state based on objectivity and uncertainty (Manav, 2011). Unemployment anxiety is defined as the dread and anticipation of not being able to find a job, not being able to have a job because of the fear and anxiety of not having an income that the individual can sustain his or her life by joining business life (Özder et al., 2018; Aksoy & Çakıcı, 2023). The position that young people will hold in their life and in society is determined by the jobs that they will hold. The uncertainties that develop, though, worry them (Taşgın et al., 2017). This situation may cause the individual to lose his/her dignity over time by making the individual passive, revealing feelings such as resentment, pessimism, and helplessness that prepare the ground for depression (Dursun & Aytaç, 2009).

Life Satisfaction

According to Diener (2006), life satisfaction is the judgment of one's own life as a whole through cognitive processes. Subjective happiness and well-being are recognized as elements of life satisfaction (Dost, 2010). When people compare their existing lives to their desired lifestyles, they arrive at their level of life satisfaction (Özer, 2004). The majority of people's main life aim, life happiness, is directly correlated with how they view their own lives (Gündoğar et al., 2007). According to the literature, there are three key aspects that determine people's levels of life satisfaction (Diener, 1984). First off, according to Yetim (1991), life happiness is founded on several external factors, such as people's subjective well-being. Second, the variables influencing the affirmation of people's assessments of their lives are looked at (Kuppens et al., 2008). Finally, it is stated that life happiness is influenced by the predominance of happy emotions over negative emotions in interpersonal interactions (Bradburn, 1969).

The Relationship Between Leisure Crafting, Job Finding Anxiety and Life Satisfaction

The current study reveals the connections between leisure crafting, job anxiety, and life satisfaction, building on Ryan & Deci's (2000) self-determination theory and Diener et al.'s (2002) human needs theory. This theory holds that persons have an underlying need for three fundamental psychological requirements, including needs for autonomy, competence, and relationships. When a person feels autonomous, it means that they believe they have control over their actions and are capable of acting on their own behalf. The need for action against one's environment and a sense of ability in dealing with one's environment are basic human needs that are referred to as "competence." Individuals' need for relationships, or a sense of belonging is connected to our innate need to have positive relationships with others (Ryan & Deci, 2000). As a result, meeting one's requirements results in a higher level of overall life satisfaction, whereas unmet needs have the opposite effect. When research on leisure time is examined today, it becomes clear that their goal is to improve quality of life (Covey et al., 2004). Furthermore, given that the characteristics of work time, school time, and leisure time are distinct from one another, recognizing the relevance of leisure time use makes it necessary to explore leisure time resourcefulness. On the other hand, research suggests that joblessness has a detrimental psychological impact on happiness and quality of life. The concept of life satisfaction, which encompasses a variety of areas including the person's private life, relationships with his or her immediate environment, expectations for the future, and goals (Şahin, 2008; Vara, 1999), is seen as being affected by one of the most fundamental concepts: job seeking anxiety. A review of existing literature reveals numerous studies focused on job anxiety and life satisfaction. However, there is a notable gap in research concerning leisure crafting. Additionally, no studies have yet undertaken a comprehensive analysis that combines

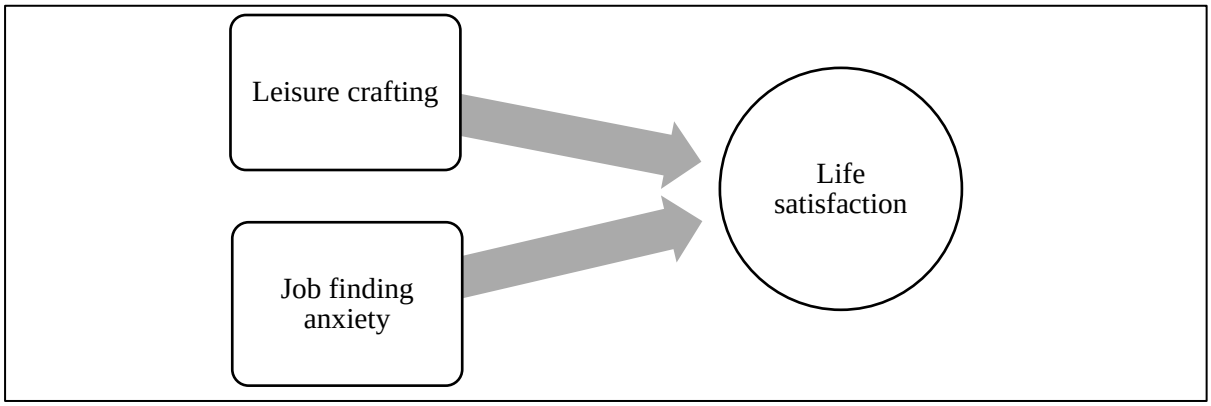
all three of these critical concepts. Therefore, the innovative approach of this study not only fills an existing void but also significantly contributes to the academic discourse.

As a result, more and more graduates are receiving their degrees every day, and the problem of unemployment in our nation is exacerbated by the growing number of young people. Because of the disasters that have struck our nation recently, factors like the length of time distance learning has been practiced as a result of these events are associated with negative outcomes like despair, a decline in life satisfaction, and unhappiness, which makes university students more anxious. In light of this, the purpose of this study was to ascertain the students' levels of leisure crafting and concern over unemployment, as well as the associations between these variables and life satisfaction. Furthermore, this study aims to elucidate the interrelationships among students' leisure crafting, job anxiety, and life satisfaction, taking into account various demographic and lifestyle variables such as class year, income level, modes of leisure time utilization, and engagement in personal development activities. The next sections offer the study's hypothesis and conceptual model in light of this theoretical framework.

H1: Anxiety about finding a job negatively affects life satisfaction.

H2: Leisure crafting positively affects life satisfaction.

Figure 1. Conceptual Diagram of the Model



METHOD

Research Model

The relational survey methodology was employed in this descriptive study to test an original theoretical model that looked at the connections between skillfulness in leisure time, job anxiety, and life satisfaction. (Karasar, 2012).

Population and Sample

The study's population comprises 792 students enrolled at a state university in Turkey for the 2022-2023 academic year. According to survey research methodology guidelines set forth by Dillman & Salant (1994), a sample size ranging from 350 to 500 is generally considered adequate for a larger population of 5,000 or more individuals. Considering this, the study utilizes a sample of 458 students, with an average age of 21.53±2.06. The sample is gender-distributed as follows: 203 students (44.3%) are female, with a mean age of 21.44±2.02, and 255 students (55.7%) are male, with a mean age of 21.61±2.06. The sample was selected using the "convenience sampling" method. Detailed information about the participants is presented in Table 1.

Table 1. Demographic Data of The Research Sample

Variables		n	%
Grade	1	115	25.1
	2	99	21.6
	3	129	28.2
	4	115	25.1
Income level	My income is less than my expenses	192	41.9
	My income is equal to my expenses	200	43.7
	My income is more than my expenses	66	14.4
How do you spend your free time?	Out with my mates	174	38.0
	Sports facility	141	30.8
	At home with TV/Computer	112	24.5
	Other (exhibition, fair, library, etc.)	31	6.8
Have you attended personal development seminars (communication/motivation/problem solving/coping with stress etc.)?	Yes	202	44.1
	No	256	55.9

Data Collection Tools & Process

Personal Information Form: A bespoke personal information form, designed by the researcher, was administered to gather pertinent details about the participating students. This form encompasses queries related to gender, age, academic grade level, income status, modes of leisure time utilization, and attendance in personal development seminars.

Life Satisfaction Scale (LSS): The five-item "Life Satisfaction Scale" was created by Diener et al., (1985) and translated into Turkish by Yetim (1991). Answers range from (1) strongly Disagree to (7) Strongly Agree on a 7-point Likert scale. The scale utilized for this study has a scoring range with a maximum achievable score of 35 and a minimum score of 7. Notably, the scale does not contain any items requiring reverse coding. Yetim (1991) reported a corrected split-half reliability value of 0.75, and a Kuder-Richardson-20 (KR-20) value of 0.79.

Sport Sciences Students' Job Finding Anxiety Scale (JFAS): The scale has one dimension and eight items, and Aslan & Uraş (2021) validated its validity and reliability. Scores range from 1 (never true) to 5 (always true). The scale, whose validity and reliability was validated, yielded an internal consistency coefficient of 0.958. An increase in the overall score shows that people are becoming more anxious. The scale has no items that require reverse coding. The scale has a one-dimensional structure, and an individual's anxiety level rises as the total score approaches 40 points.

Leisure Crafting Scale (LCS): The scale was designed by Petrou & Bakker (2016), and Sürücü & Ertan (2022) validated its validity and reliability. It has one dimension and nine items. The responses to the statements on the Likert scale with a 5-point range are (1) Not at all - (5) Very much. The highest score that can be obtained from the scale is 45 and the lowest score is 9. There are no scale elements that require reverse coding. The calculated internal consistency coefficient was 0.92.

The research employed a questionnaire method for gathering data. Surveys were administered via "Google forms". The students received a thorough explanation of the guidelines to follow before completing the scales on a voluntary basis. Tokat Gaziosmanpaşa

University's Social and Human Sciences Ethics Committee gave its approval to the study (24.04.2023/287923), which was carried out in compliance with the criteria of the Helsinki Declaration.

Data Analysis

Data analyses were conducted using IBM AMOS V25 (Chicago, USA) and SPSS 24. SPSS Inc., (Chicago, USA). 470 individuals provided data for the study; however, 458 individuals were finally included after removing the responses of those who provided incomplete or inaccurate answers to the questionnaires and those who consistently coded at the same level. Firstly, it was decided whether the data met the normality assumption by looking at the Skewness and Kurtosis values (Büyüköztürk, 2013) (Table 2). In addition, Cronbach's Alpha internal consistency coefficients of the measurement tools were calculated. In this context, descriptive statistics, t-test for independent groups, one-way analysis of variance (ANOVA) and Tukey HSD multiple comparison tests were used to determine intergroup differences. In the study, structural equation modelling (SEM) was used to determine the relationship between the scales and a two-stage approach was adopted. Firstly, the measurement models of the model were evaluated and then the structural model was tested (Table 7). Life satisfaction, job finding anxiety, and leisure crafting were identified as latent factors in the data analysis, while each scale item was identified as an observable variable. As a result, the measurement model was created using a total of 22 observable variables and 3 latent variables (Figure 2).

Table 2. Scale Score Distributions (LCS-JFA-LS)

Scales	Item	Mean	Sd.	Min.	Max.	Skewness	Kurtosis	Cronbach Alpha
Leisure Crafting	9	3.54	0.84	1	5	-0.21	0.18	0.91
Job Finding Anxiety	8	3.90	0.85	1	5	-0.77	0.33	0.89
Life Satisfaction	5	3.95	1.30	1	7	-0.12	0.52	0.83

n=458

Analysis of the scores from LCS, JFA, and LS revealed that mean of LC was (3.54±.84), JFA was (3.90±.85), and LS was (3.95±1.30). The data were also regular, as seen by the results for skewness and kurtosis (Table 2).

FINDINGS

In this section, the findings derived from the research are presented, along with the statistical analysis of these results, which are organized in tabular format.

Table 3. T-test Results of LCS, JFA, and LS Scores According to Gender

Scales	Gender	n	Mean	Sd.	df.	t	p
Leisure Crafting	Female	203	3.50	0.82	456	0.96	0.34
	Male	255	3.58	0.86			
Job Finding Anxiety	Female	203	3.87	0.85	456	0.57	0.57
	Male	255	3.92	0.87			
Life Satisfaction	Female	203	3.99	1.28	456	0.51	0.61
	Male	255	3.92	1.33			

According to Table 3. there are no differences in the LC, JFA and LS scores between the groups depending on the variable “gender” (p>0.05).

Table 4. ANOVA Test Results of LCS, JFA, and LS Scores According to Income

Scales	Income	n	Mean	Sd.	F	p	Differ.
Leisure Crafting	[a]My income is less than my expenditures	192	3.39	0.87	5.93	**0.000**	c>b>a
	[b]My income is equal to my expenditures	200	3.64	0.81			
	[c]My income is higher than my expenditures	66	3.72	0.78			
Job Finding Anxiety	[a]My income is less than my expenses	192	4.09	0.76	12.50	**0.000**	a>b>c
	[b]My income is equal to my expenditures	200	3.84	0.88			
	[c]My income is higher than my expenditures	66	3.51	0.93			
Life Satisfaction	[a]My income is less than my expenses	192	3.41	1.24	41.08	**0.000**	c>b>a
	[b]My income is equal to my expenditures	200	4.17	1.17			
	[c] My income is higher than my expenditures	66	4.86	1.22			

Table 4 shows that depending on the "income" variable, there is a significant difference between the groups in terms of LC [F (2-455) = 5.93, p<0.001], JFA [F (2-455) = 12.50, p<0.001], and LS [F (2-455) = 41.08, p<0.001]. The Tukey HSD test results reveal that these differences are significant in favor of those whose income is greater than expenditure in terms of leisure crafting and life satisfaction, and significant in favor of those whose income is lower than expenditure in terms of job finding anxiety.

Tablo 5. ANOVA Test Results of LC, JFA, and LS Scores According to Utilizing Leisure Time

Scales	Utilizing leisure time	n	Mean	Sd.	F	p	Differ.
Leisure Crafting	[a]Outside with my friends	174	3.56	0.77	16.30	**0.000**	b>a>c d>c
	[b]At a Sports facility	141	3.83	0.83			
	[c]With TV/Computer at home	112	3.13	0.86			
	[d]Exhibition, fair, library, etc.)	31	3.72	0.63			
Job Finding Anxiety	[a]With friends outside	174	3.93	0.78	1.35	0.257	-
	[b]At a sports facility	141	3.80	0.90			
	[c]With TV/Computer at home	112	3.91	0.92			
	[d]Exhibition, fair, library, etc.)	31	4.11	0.85			
Life Satisfaction	[a]With friends outside	174	4.08	1.28	10.00	**0.000**	b>d>a>c
	[b]At a Sports facility	141	4.21	1.27			
	[c]With TV/Computer at home	112	3.39	1.30			
	[d]Exhibition, fair, library, etc.)	31	4.12	1.10			

According to Table 5. there is a significant difference in the LC and LS scores between the groups depending on the variable "type of leisure time utilization" LC [F (3-454) = 16.30, p<0.001] and LS [F (3-454) = 10.00, p<0.001] When the mean values were analyzed in light of the Tukey HSD test findings, the sports facility group had a higher average.

Table 6. t-Test Results of LC, JFA and LS Scores According to Participation in a Personal Development Seminar

Scales	Personal development seminar	N	Mean	Sd.	df.	t	p
Leisure Crafting	Yes	202	3.72	0.80	456	4.02	**0.000**
	No	256	3.41	0.85			
Job Finding Anxiety	Yes	202	3.80	0.91	456	2.21	**0.028**
	No	256	3.98	0.81			
Life Satisfaction	Yes	202	4.15	1.29	456	2.95	**0.003**
	No	256	3.79	1.30			

When Table 6 is examined, it becomes apparent that the participants' LC [t (456) = 4.02; p<0.001]. JFA [t (456) = -2.21; p<0.05] and LS [t (456) =2.95; p<0.005] scores differ significantly depending on whether they attended a personal development seminar. When the mean values are looked at, the difference is in favor of people who answered "yes" for life satisfaction and leisure crafting and in favor of people who answered "no" for job seeking anxiety.

Table 7. Testing of the LC, JFA and LS Measurement Model

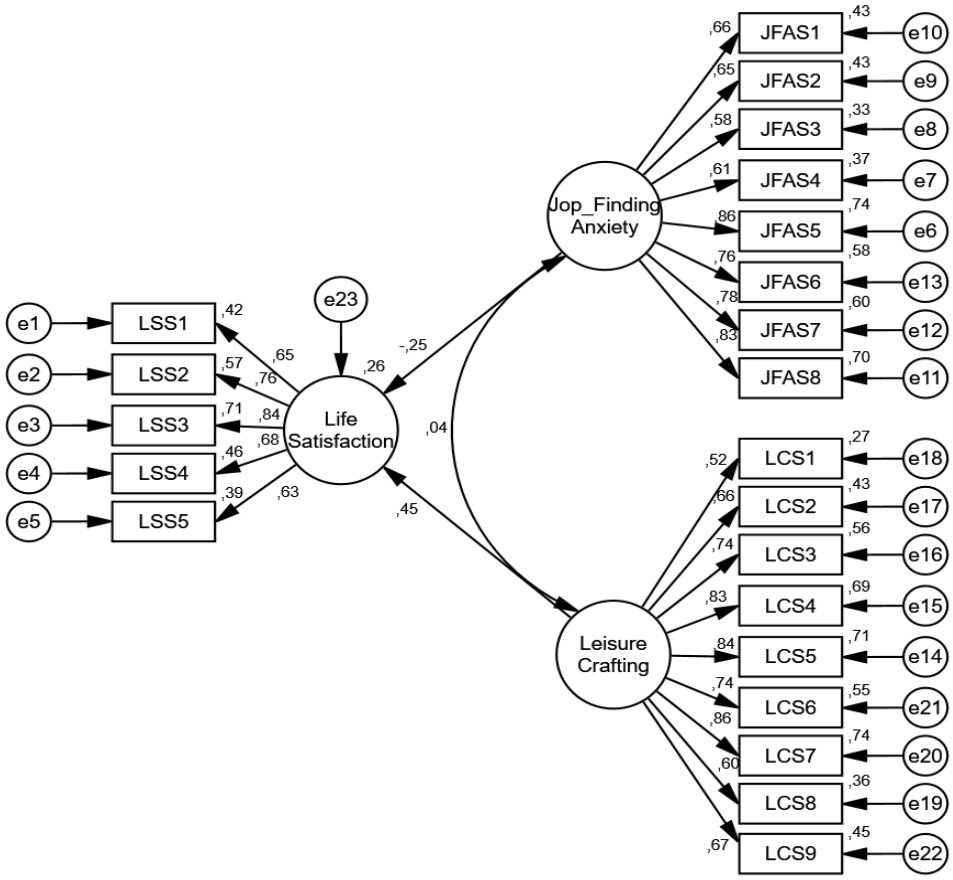
Measurement Model			β^1	β^2	S.E.	C.R.	P
LS5	<---	LS	0.627	1.000			
LS4	<---	LS	0.681	0.922	0.078	11.853	**<0.001**
LS3	<---	LS	0.844	1.265	0.093	13.619	**<0.001**
LS2	<---	LS	0.757	1.076	0.084	12.790	**<0.001**
LS1	<---	LS	0.646	0.896	0.079	11.390	**<0.001**
JFA5	<---	JFA	0.860	1.000			
JFA4	<---	JFA	0.607	0.752	0.054	14.035	**<0.001**
JFA3	<---	JFA	0.578	0.639	0.048	13.217	**<0.001**
JFA2	<---	JFA	0.652	0.715	0.046	15.440	**<0.001**
JFA1	<---	JFA	0.658	0.797	0.051	15.629	**<0.001**
JFA6	<---	JFA	0.759	0.909	0.048	19.111	**<0.001**
JFA7	<---	JFA	0.776	0.859	0.043	19.764	**<0.001**
JFA8	<---	JFA	0.835	0.938	0.042	22.150	**<0.001**
LCS5	<---	LCS	0.844	1.000			
LCS4	<---	LCS	0.832	0.976	0.045	21.893	**<0.001**
LCS3	<---	LCS	0.745	0.893	0.048	18.499	**<0.001**
LCS2	<---	LCS	0.656	0.826	0.053	15.532	**<0.001**
LCS1	<---	LCS	0.522	0.579	0.050	11.685	**<0.001**
LCS6	<---	LCS	0.739	0.884	0.048	18.291	**<0.001**
LCS7	<---	LCS	0.862	1.051	0.045	23.183	**<0.001**
LCS8	<---	LCS	0.599	0.669	0.048	13.810	**<0.001**
LCS9	<---	LCS	0.671	0.774	0.048	16.000	**<0.001**
SEM							
LS	<---	JFA	**-0.250**	**-0.335**	0.069	- 4.880	**<0.001**
LS	<---	LCS	**0.453**	**0.863**	0.123	7.044	**<0.001**

LS: Life satisfaction. **JFA:** Job finding anxiety. **LC:** Leisure craftin. **β^1:** Standardized path coefficients. **β^2:** Non-standardized path coefficients

Firstly, the model fit criteria were reviewed as a result of the analyses conducted to test the research model, and it was found that the fit values fell within the desired ranges (Hu & Bentler, 1999; Schermelleh-Engel, Moosbrugger & Müller, 2003). All route coefficients were statistically significant, and the measurement model's fit index values were (CMIN=363.872. DF=206. CMIN/DF=1.766. RMSEA=0.041. CFI=0.968. GFI=0.933). Table 7 displays the outcomes of the standardized and non-standardized analyses of the derived path coefficients.

The results from the structural equation model are shown in Figure 1.

Figure 2. Structural Equation Model between Leisure Crafting, Job Finding Anxiety and Life Satisfaction



CMIN=363,872; DF=206; p=,000; CMIN/DF=1,766, RMSEA=,041; GFI=,933;CFI=,968

Essentially, two assumptions were examined in the structural model. H1: Job finding anxiety has a negative impact on life satisfaction. H2: Leisure crafting has a favorable impact on life satisfaction. According to SEM, the relationship between life satisfaction and job anxiety was determined to be statistically significant (β1=-0.250, p=0.001). As a result, hypothesis H1 was verified. Additionally, the relationship between life satisfaction and leisure crafting was statistically significant (β1=0.453, p=0.001). This finding demonstrates that hypothesis H2 is also supported. In other words, life satisfaction is significantly predicted by both job finding anxiety and leisure crafting.

DISCUSSION

The objective of this research was to assess the levels of leisure crafting, job finding anxiety, and life satisfaction among students enrolled in the faculty of sport sciences. Furthermore, the study aimed to examine potential variations in these levels based on factors such as gender, income status, type of leisure time utilization, and participation in personal development seminars. Structural equation modeling was utilized to determine the relationship between these variables. In this section, the research findings are presented alongside relevant studies from the existing literature.

In line with the primary objectives of this study, the mean scores of the participants on the scales were examined. The findings revealed that the participants had moderate levels of leisure crafting, relatively high levels of job finding anxiety, and moderate levels of life satisfaction. Considering these mean values, it can be observed that participants demonstrated above-average leisure crafting, moderate life satisfaction, and a high level of anxiety regarding job prospects. These findings align with previous research in the literature, which also indicated that young individuals experience high levels of job finding anxiety (Çetinceli & Tüzün, 2022; Tayfun & Korkmaz, 2016; Yetişensoy & Şahin, 2020) and moderate levels of life satisfaction (Gündoğar et al., 2007; Turaç & Bayın-Donar, 2017). These consistent findings support the current study's results. It is believed that the perception of employment challenges, students' difficulty in utilizing their free time effectively, and insufficient emphasis on personal development for employment opportunities may contribute to these concerns.

No significant differences were found in the levels of leisure crafting, job finding anxiety, and life satisfaction among the participants based on gender ($p>0.05$). These findings are supported by previous studies in the literature that examined job finding anxiety (Asan, 2023; Aydın et al., 2013; Sarıkol & Hoşver, 2023; Tümerdem, 2007) and life satisfaction (Çetinceli & Tüzün, 2022; Kermen, Tosun & Doğan, 2016). However, Şenel and Karakuş (2022) conducted a study specifically with physical education and sports college students and found that female students had significantly higher levels of anxiety regarding job prospects. It is worth noting that there is a limited amount of research on leisure crafting in the literature, but there are studies on time management. Nelson and Nelson (2003) concluded that female students tend to be more efficient in time management, which can impact their academic achievement and overall success compared to male students. In conclusion, although one might assume that men would experience higher levels of job finding anxiety, it can be said that women experience similar levels of anxiety and this can negatively affect their overall life satisfaction.

The present study found that individuals with higher income than expenses demonstrated higher levels of leisure crafting and life satisfaction, while those with lower income than expenses experienced greater job finding anxiety. These findings are in line with previous research indicating that life satisfaction is influenced by factors such as financial status (Rask et al., 2002). Diener and Biswas-Diener (2002) have also reported in their research that life satisfaction, or subjective well-being, tends to increase as income rises across different societies. The studies conducted by Tayfun and Korkmaz (2016) and Sarıkol and Ustaoğlu-Hoşver (2023) have revealed that university students with low income exhibit higher levels of anxiety regarding job finding. These findings are consistent with the present study. Higher income may facilitate easier access to leisure activities, enabling individuals to engage in new and unique experiences, thus enhancing their leisure crafting skills. Additionally, individuals with higher income may have greater accessibility to personal development opportunities, such as courses, which can improve their prospects for employment. It is believed that the ease of accessing such opportunities due to income status and the fulfillment of needs can also

contribute to higher levels of life satisfaction. Therefore, it is reasonable to assert that income plays a crucial role in meeting individual needs.

Individuals spend their free time in different ways. Considering that a student who started the 1st grade in 2019 was affected by both the pandemic and the earthquake, the thought that there might be a change in the way they spend their free time has been the reason for choosing this factor for this research. Prior to the pandemic, people tended to spend more time outdoors in open areas. However, the subsequent circumstances compelled them to remain indoors more frequently. Additionally, the recent earthquake has resulted in alterations to leisure time patterns due to factors such as distance learning initiatives and the destruction of recreational spaces. These changes have had an influence on people's adaptability in finding leisure opportunities and their overall life satisfaction. The findings of the present study affirm these expectations, indicating that individuals who utilized sports facilities or had access to them exhibited higher average scores in terms of leisure crafting compared to those who spent their leisure time socializing with friends outdoors or at home with TV/computer. Engaging in leisure activities at a sports facility offers various advantages, such as enhancing one's skills through active participation, facilitating learning experiences, aiding in the establishment of personal goals, and promoting leisure crafting by fostering novel and inspiring encounters with others. The excessive time spent at home with TV/computer is believed to pose a significant barrier to acquiring new experiences and skills, as it can become mundane and monotonous over time. Consistent with this notion, the current study found that individuals who engaged in leisure activities at sports facilities and participated in exhibitions, fairs, libraries, and similar events reported higher mean scores in terms of life satisfaction compared to those who spent their leisure time socializing with friends outdoors or at home with TV/computer. Today's youth, often referred to as the "internet generation," have incorporated the internet and its various components as essential aspects of their daily routines. While this digital landscape enhances virtual relationships among young individuals, it weakens their real-world connections and gradually disconnects them from reality. Consequently, they face the risk of social exclusion and isolation over time (Karaca, 2007). Consequently, both leisure crafting and life satisfaction are likely to be adversely affected by this situation.

Participating in personal development seminars, especially in sports sciences, covering various areas like communication skills, motivation, problem-solving, stress management, coaching, and refereeing, can meet individuals' needs. The study revealed that those who attended these seminars reported high scores in leisure crafting and life satisfaction, whereas non-participants experienced heightened job finding anxiety. Yılmaz and Caz (2022) found that sport sciences faculty students who did not participate in career-related training, seminars, and panels had higher job finding anxiety, consistent with the current study's findings. Participating in personal development seminars serves as a means of leisure crafting, fostering individuals' engagement in stimulating activities beyond their work. This engagement helps them cultivate curiosity, enhance skills, and pursue self-improvement. Moreover, by enhancing knowledge, skills, and crafting an effective resume, individuals can reduce job search anxiety and increase their employability. Proactively addressing personal needs and deficiencies through self-development contributes to heightened leisure crafting, reduced job search anxiety, and overall life satisfaction.

The study revealed significant relationships between leisure crafting, job finding anxiety, and life satisfaction, confirming the main hypotheses. The path coefficient between job finding anxiety and life satisfaction indicated that as job finding anxiety increases, life satisfaction decreases. Conversely, the path coefficient between leisure crafting and life satisfaction demonstrated that as leisure crafting increases, so does life satisfaction. These findings support the notion that higher job finding anxiety negatively affects life satisfaction, while greater leisure crafting positively contributes to life satisfaction. Moreover, it is worth

noting that leisure crafting (45%) and the anxiety associated with job searching (-25%) emerge as significant indicators of life satisfaction. These findings align with similar studies conducted both domestically (Çetinceli & Tüzün, 2022; Kermen, Tosun & Doğan, 2016; Turaç & Bayın-Donar, 2017) and internationally (Alioat & El Keshky, 2020; Booker & Sacker, 2012), which highlight the detrimental effects of job-related anxiety on overall life satisfaction. Individuals who personally grapple with the anxiety of finding employment also experience the influence of various environmental factors. Consequently, it is believed that young individuals who suffer from depression, pessimism, and diminished self-confidence will encounter a negative impact on their life satisfaction.

CONCLUSION & RECOMMENDATIONS

This present study is confined to a Turkish sample, which presents a limitation in terms of its applicability to broader, cross-cultural contexts. Future research could employ a cross-cultural approach to examine these issues from a more global perspective. Additionally, as the study focuses solely on university students, there may be a need for subsequent research to explore these concepts across different age demographics. The study also relies exclusively on quantitative methods; incorporating alternative research methodologies could offer additional insights and a more nuanced understanding of the subject matter.

This study aimed to investigate the correlation between leisure skills, job finding anxiety, and life satisfaction among students who have been out of education due to adverse events in our country, resulting in increased free time. Overall, it was found that students exhibited high levels of anxiety regarding job prospects, while their levels of leisure crafting and life satisfaction were moderate. Interestingly, gender did not appear to have an impact on the levels of leisure crafting, job finding anxiety, and life satisfaction among the students. However, these levels did vary based on income levels and participation in development seminars.

The study findings indicate that individuals with insufficient income to cover their expenses tend to have lower levels of leisure crafting and life satisfaction. Conversely, those with income exceeding their expenses experience higher life satisfaction. Participation in development seminars was associated with greater leisure crafting and life satisfaction, while non-participation was linked to increased anxiety about finding a job. Additionally, students who engaged in leisure activities at sports facilities demonstrated higher levels of leisure crafting and life satisfaction. It is important to note that leisure crafting positively impacts life satisfaction, whereas job finding anxiety negatively affects it.

In conclusion, with the growing number of graduates, the issue of unemployment among the youth population in our country continues to be a challenge. To address this, it is advisable for students to engage in hobbies and actively participate in personal development programs that enhance their sense of value and contribute to their personal growth. It is also crucial for students to receive proper guidance in schools regarding these matters. Furthermore, future research can explore additional statistical methods and variables, providing a fresh perspective on the topic. This can lead to a deeper understanding of the issue and offer valuable insights for potential solutions.

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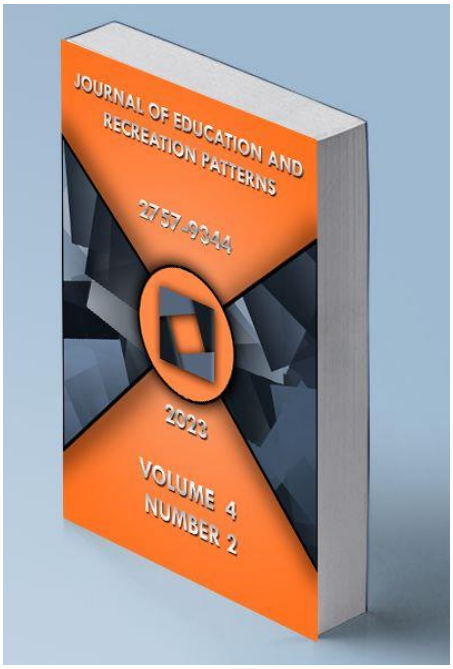
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Relationship Between Brand Awareness Levels, Brand Loyalty Behaviors, Brand Function Perceptions, Factors Influencing Brand Loyalty, and Preferred Criteria in Product Purchasing Among Secondary School Students Engaged in Sports

Tuncay SARIİPEK[1]

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[1] Tuncay SARIİPEK, Selçuk University, Faculty of Sports Sciences, tsariipek@hotmail.com,
https://orcid.org/0000-0002-4790-4379

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Relationship Between Brand Awareness Levels, Brand Loyalty Behaviors, Brand Function Perceptions, Factors Influencing Brand Loyalty, and Preferred Criteria in Product Purchasing Among Secondary School Students Engaged in Sports

Tuncay SARIİPEK[1]

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ABSTRACT

This research was conducted to determine whether there is a significant relationship between brand awareness levels, brand loyalty behaviors, brand function perceptions, factors affecting brand loyalty and preference criteria in product purchase in a sample of secondary school students engaged in sports. In the research, a relational survey method was employed. The study group consisted of a total of 250 students [n(male=185), n(female=65)] who were enrolled in high schools affiliated with the Konya Provincial Directorate of National Education during the first half of the 2019-2020 academic year and represented different sports branches (such as football, volleyball, basketball, handball, folk dancing, taekwondo, kickboxing, badminton, fitness, wrestling, fencing) at their schools or participated in competitions. The average age of the students participating in the research is 16.48±1.16. Brand Awareness Scale consisting of 5 statements and a single dimension, Brand Loyalty Scale consisting of 6 statements and a single dimension, Brand Functions Scale consisting of 14 statements and 3 sub-dimensions, Factors Affecting Brand Loyalty Scale consisting of 13 statements and 4 sub-dimensions and Preference Criteria in Product Purchase Scale consisting of 23 statements and 4 sub-dimensions were used as data collection tools. Relational survey model and convenience sampling method were used in the study. As a result of the research, it was determined that there are positive, medium and low-level significant relationships between the brand awareness levels, brand loyalty behaviors, brand function perceptions, factors affecting brand loyalty and preference criteria in product purchase of secondary school students engaged in sports.

Keywords: Brand Awareness, Brand Function, Brand Loyalty, Secondary School Students, Sports Marketing

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INTRODUCTION

The concept of "brand" as an important factor in consumers' purchasing behavior is becoming increasingly prominent today. For businesses, it is of strategic importance to address the target audience correctly in order to place the life of the brand in the memory of the consumer in the long term and to convey the targeted message correctly, as well as to strengthen the brand image and ensure brand addiction. In this context, businesses whose target audience consists of young people need to know young people very well. What is the importance of brands for young people and to what extent? What functions does the brand undertake for young people? What are the factors that push young people towards certain brand functions? How can brand loyalty be ensured among young people? Finding answers to such questions is of great importance for the future of businesses in terms of placing the brand in a positive position in the eyes of young people at an early age (Acuff, 2010).

The technological breakthrough made in the last hundred years, easy access to the product offered to consumers by technological developments, etc. positive development has led to the formation of a large number of brands and some indecision in the decision-making or purchasing of consumers at the point of brand preference or the formation of large gaps in brand preference. In particular, the fact that the young population around the world sees the brand as an identity card, perceives it as a status tool in society, tends to use this brand in their social relations has pushed many companies to use these channels that have emerged with technology and are widely used by young people in order to influence this young population in order to take place in this large market and to hold on to it, that is, to obtain new customers and to keep the customers they have, and the brand awareness (identity, social status, socialization tool, etc.) created by young people coincides with their own brands.) overlaps with their own brands and emphasizes that the benefits of their own brands to young people can be much more, offering these brands opportunities to make commercial profit, while causing brand awareness in young people and children to form in a much more permanent way.

Sports has a very complex structure with social depth as well as physical performance elements (Barsbuğa, 2021). In addition to providing many physical, mental and social benefits to individuals, the increase in its popularity with various mass media and the great increases in the number of sports spectators in parallel with this have caused many brands to turn to the sports sector. Sports, which is accepted as an alternative in leisure time evaluation, has spread to large masses in parallel with the development of technology, and as a result, it has become a service sector with prominent economic qualities (Barsbuğa et al., 2018). The global sports market, which is the second largest item in the recreation sector after the entertainment sector, reached approximately USD 485 billion in 2018, and according to the compound annual growth rate (CAGR), it has grown by 4.8% since 2014 and is expected to grow at a rate of 5.9% until 2022, reaching approximately USD 614.1 billion (Finch et al., 2022). Professional sports account for approximately 250 billion dollars of the sports market turnover (Allcock, 2017,). On a global basis, North America has the largest share of the sports industry pie with 30.5%. North America is followed by Western Europe, Asia-Pacific and other nations. On a CAGR basis, Asia-Pacific and Middle East countries showed the fastest growth with 9.04% and 6.2% respectively. These countries are followed by North and South America with a CAGR of 6.0% and 5.30%, respectively (Finch et al., 2022).The ease of sports in reaching the masses and the large market that has emerged in parallel with this, as seen above, clearly shows how important it is for brands to use sports to increase their market share by using various mass media to reach their target audiences.

In this context, it is important to know the Brand Awareness Levels, Brand Loyalty Behaviors, Brand Function Perceptions, Factors Affecting Brand Loyalty and Preference Criteria in Product Purchase that encourage children and young people to do sports in this

period when the differences between those who do sports and those who do not do sports are clearly revealed with various scientific data in order to raise healthy generations and to carry out the developed sports policies properly.

Brand Awareness

In the age we are in, due to many reasons such as easy access to the product, fast consumption, product variety and abundance, rapid change of tastes and expectations according to the situation, brand awareness or branding; It reveals the biggest difference by distinguishing a company from other companies and revealing the difference between its products and other same products and ensuring that it can be marketed accordingly. Brand is defined as making a promise, the combination of all perceptions about any service or product, everything perceived by the five senses. While the brand differentiates the product from others, it also facilitates the consumer's purchasing decision (Özdemir & Öncül, 2016). Brand awareness is defined as the desire or inclination to purchase or desire brands that are heavily advertised, more expensive, and well-known (Ghazali & Zaharah 2010). In other words, consumers with strong brand awareness are inclined to acquire expensive, well-known brands that are heavily marketed. These consumers use brands to reflect their fashion consciousness, express their personality traits, and reduce the risk of purchase (Liao & Wang, 2009). As mentioned above, brand product usage is especially used as a tool for creating an image and identity, especially among children and young people, depending on the development of brand awareness. Consumers with brand awareness tend to use branded products to convey their ideal self-image and associate themselves with a higher social class (Bian & Moutinho, 2011). Brand names, especially in sports products, play an important role in influencing consumer preferences (Dickson & Pollack, 2000).

Brand Loyalty

In the brand market, where there is a very intense competition, consumer satisfaction is extremely important for the future of the brand. The fact that the consumer buys or expresses that he/she will buy the product he/she has used again, that is, creating a loyalty to the brand, is one of the most important indicators of the continuity of the brand in commercial terms. Brand loyalty is a commitment to continually prefer or repurchase a brand in the future, despite situational influences and marketing efforts that have the potential to cause switching behavior (Oliver et al., 1997). In the literature, it is emphasized that it is five to seven times more costly to acquire new customers than to retain existing customers and the importance of brand loyalty in the success of the business is widely mentioned (Galbreath & Rogers 1999).

From this perspective, securing the future of a brand is closely related to its ability to build brand loyalty. With the advancement of technology, the number of informed consumers has been steadily increasing, and these informed consumers are now shifting towards products that fully satisfy their needs and desires. Faced with increased competition, businesses are making efforts not only to acquire new customers but also to retain existing ones by creating brand loyalty (Sekmen & Aslan, 2021).

Brand Function Perceptions

Brand functions play a crucial role in maintaining the value of a brand and increasing its market share among potential customers in the brand's target audience during marketing activities. The reactions that customers show or will show during a brand's marketing activities are important for evaluating brand functions, and they hold significance for companies. Researchers like Aaker (1996) and Ebeling (1996) have categorized brand functions from the perspective of consumers as follows:

-Guidance/Recognition Function
-Habit and Convenience Function

-Risk Reduction Function
-Decision-Making Ease Function
-Identification Function
-Prestige/Self-Presentation Function

The Factors Affecting That Brand Loyalty

Businesses will survive only as long as they can satisfy their customers. Ensuring customer satisfaction is a prerequisite for customer loyalty (Oliver et al., 1997). Based on these definitions, companies trying to produce in today's intensely competitive environment are obliged to attract the attention of the target audience in order to survive by achieving commercial success. In order to create and maintain brand loyalty in this challenging environment, it is extremely important that the products produced not only meet functional and psychological needs but also add additional values for both individuals and communities. With the extra values that this company will add, it puts it in a more attractive and preferable position in the perception of its target audience than other companies. Based on this, the factors affecting the customer's brand loyalty;

- Brand Image
- Brand Trust
- Customer Satisfaction
- Perceived Value
- Replacement Cost
- Perceived Quality and Expectation Level (Şimşek & Noyan, 2009) in the form of a list.

When looking at the literature and case studies related to all these factors, it becomes evident that companies that carefully consider and effectively implement these functions tend to build brand loyalty among their customers and are more efficient in acquiring new customers compared to other firms.

Preference Criteria for Product Purchase

Consumer behavior is a process that encompasses activities before, during, and after a purchase (Demir & Armağan, 2013). During this process, consumers are tasked with making decisions on various aspects, including what goods and services to buy, what the purchase criteria will be, from whom, how, where, and when to make the purchase (Ulama & Koç, 2019). Among these decisions, the question of what the purchase criteria will be holds critical importance.

- Cultural Criteria
- Personal Criteria
- Social Criteria
- It is possible to list them as Psychological Criteria

METHOD

In the research, a relational survey method was used. Survey models are research approaches that aim to describe a past or present situation as it exists. The event, individual or object that is the subject of the research is tried to be defined in its own conditions and as it is. No effort is made to change or influence them in any way. Relational survey models are research models that aim to determine the existence and/or degree of change between two or more variables (Karasar 2008).

Population and Sample

Convenience sampling is a non-random sampling method in which the sample to be selected from the main mass is determined by the judgment of the researcher. In convenience sampling, data are collected from the main mass in the easiest, fastest and most economical way (Malhotra, 2004; Aaker et al., 2007; Zikmund, 1997). Student athletes who represented their schools in different branches (team and individual sports) and participated in competitions by participating in extracurricular inter-school sports activities in the first half of the 2019-2020 academic year were selected for the study. In this context, the sample of the study consisted of a total of 250 students [n(male=185), n(female=65)] who studied in high schools affiliated to Konya Provincial Directorate of National Education in the first half of the 2019-2020 academic year and represented their schools in different branches (football, volleyball, basketball, handball, folk dances, taekwondo, kick boxing, badminton, fitness, wrestling, fencing). The average age of the students participating in the study was 16.48±1.16. n=150 of the students in the sample of the study are active in team sports and n=100 in individual sports. The income level of the students' families was 2393.12 TL.

Data Collection Tools

As data collection tools in the research, Brand Awareness Scale, Brand Loyalty Scale, Brand Functions Scale, Factors Affecting Brand Loyalty Scale, and Preference Criteria for Product Purchase Scale were used, which were translated into Turkish by Erdoğdu (2012) by making use of many studies in the literature and whose validity and reliability studies were conducted after language validity was ensured.

Brand Awareness Scale: is a scale, which is a five-point Likert type ("1=strongly disagree", "5=strongly agree"), and composed of 5 statements (for example, "I usually buy brands from famous companies", "well-known brands are best for me") and one dimension, and it was developed to determine the brand awareness of secondary school students in general without considering any product group.

Brand Loyalty Scale: is a scale, which is a five-point Likert type ("1=strongly disagree", "5=strongly agree"), and composed of 6 statements (For example, "all kinds of sneakers I own are from the same brand", "when my sneakers get old, I will buy the same brand of sneakers") and one dimension, and it was developed to determine the brand loyalty behaviors of secondary school students in sports shoes.

Brand Functions Scale: is a scale, which is a five-point Likert type ("1=strongly disagree", "5=strongly agree"), and composed of 14 statements [For example, *"become cooler among my friends thanks to the "brand-name products" I use(image function)", "I think "brand" indicates which company produced the product(marking/classic function)", "I am usually interested in the same kinds of sports as my friends who use the same "brands"(social function)"*] and 3 sub-dimensions [Image function(7th,8th,9th,10th,11th,14th Items), marking/classic function(1st,2nd,3rd,4th,6th Items), social function(5th,12th,13th Items)], and it was developed to determine the perceived brand functions of secondary school students without considering any product group.

Factors Affecting Brand Loyalty Scale: is a scale, which is a five-point Likert type ("1=strongly disagree", "5=strongly agree"), and composed of 13 statements [For example, *"I'm so used to my current sneakers, I'm too lazy to try another brand(brand habit)", "if a new sneaker brand comes out, I will try that brand(diversity/innovation approach)", "I believe my current sneaker brand is the right choice(emotional commitment to the brand)", "I only buy the sneakers I like at the time of sale(sensitivity to price cuts and promotions)"*] and 4 sub-dimensions [Brand habit(3rd,8th,9th,11th Items), diversity/innovation approach(2nd,4th,5th Items), emotional commitment to the brand(1st,10th,13th

Items), sensitivity to price cuts and promotions(6th,7th,12th Items)], and it was developed to determine the factors affecting the brand loyalty of secondary school students in sports shoes.

Preference Criteria for Product Purchase Scale: is a scale, which is a five-point Likert type ("1=strongly disagree", "5=strongly agree"), and composed of 23 statements [For example, *"It must be suitable for my foot health(Functionality Criterion)", "It must be a well-known brand(well-known brand/high image criterion)", "It must be fashionable among young people(innovative/fashionable criterion)", "it must be a shoe that my friends will also like(social circle/friend criterion)"*] and 4 sub-dimensions [Functionality Criterion(3rd,4th,5th,6th,7th,10th,23rd Items), well-known brand/high image criterion(1st,2nd,12th,13th,17th,20th,21st,22nd Items), innovative/fashionable criterion(14th,15th,16th,18th,19th Items), social circle/friend criterion(8th,9th,11th Items)], and it was developed to determine the preference criteria of secondary school students in the purchase of sports shoes (Erdoğdu, 2012).

Analysis of the Data

The research data were analyzed with SPSS 23.0 program. Normality distributions were tested with Kolmogorov-Smirnov and Shapiro-Wilk tests. In interpreting the correlation coefficient, a correlation coefficient between 0.70-1.00 was accepted as a high-level relationship, between 0.70-0.30 as a medium level relationship and between 0.30-0.00 as a low-level relationship (Büyüköztürk, 2007).

Since the data obtained in the study showed normal distribution, Pearson product-moment correlation (r) coefficient technique was used to determine the relationship between the mean scores obtained from the related scales by the secondary school students who were engaged in sports in line with the purpose of the study. In all statistical calculations made in the study, the basic significance level was accepted as 0.05.

FINDINGS

In this section, the findings obtained as a result of the analysis of the data obtained from the scales of the sporting secondary school students participating in the study and explanations for the findings are given.

Table 1. Pearson Correlation Coefficient Results for the Relationship Between Brand Awareness Levels, Brand Loyalty Behaviors, Brand Function Perceptions, Factors Affecting Brand Loyalty, and Product Purchase Preference Criteria of High School Students Engaged in Sports

		Brand Loyalty Scale	Brand Functions Scale			Factors Affecting Brand Loyalty Scale				Scale of Preference Criteria for Product Purchase			
			İF	SCF	SF	MH	DIS	ECB	SPPD	FC	RBHIC	IFC	SEFC
Brand	r	**0,623****	**0,360****	**0,638****	**0,335****	**0,355****	**0,283****	**0,515****	**0,195****	**0,420****	**0,575****	**0,525****	**0,419****
Aware	P	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,002	0,000	0,000	0,000	0,000
ness	n	250	250	250	250	250	250	250	250	250	250	250	250

***P<significant at 0.05 level **P< significant at 0.01 level**

IF=Image Function, **IKF**=Signaling/Classical Function, **SF**=Social Function, **MH**=Mark Habituation, **DIS=**Diversity/Innovation Seeking, **ECB**=Emotional Commitment to the Brand, **SPPD**=Sensitivity to Price Discounts and Promotions, **FC=**Functionality Criterion, **RBHIC=**Renowned Brand/High Image Criterion, **IFC**=Innovative/Fashionable Criterion, **SEFC**=Social Environment/Friends Criterion

As seen in Table 1, it is determined that there is a moderately significant positive relationship between brand awareness levels and brand loyalty behaviors of secondary school students engaged in sports ($r = 0.623$; $P < 0.01$). Table 1 shows that there is a moderately positive relationship ($r = 0.623$, $p < 0.01$) between brand awareness levels and brand loyalty behaviors among high school students engaged in sports. This finding indicates that as brand awareness increases, brand loyalty behaviors tend to increase. In other words, this significant

positive relationship indicates that as individuals become more familiar with a particular brand, they are more likely to exhibit loyalty behaviors towards that brand.

Again, it has been determined that there is a positive and moderately significant relationship between the brand awareness levels of secondary school students who are engaged in sports and the dimensions of brand function perceptions such as image function (r=0.360; P<0.01), marking/classical function (r=0.638; P<0.01) and social function (r=0.335; P<0.01). This significant positive relationship indicates that when students become more familiar with a sports-related brand, they increase their loyalty behavior towards that brand. This can manifest itself in a variety of ways, such as consistently choosing products associated with that brand, recommending the brand to other people, or showing a preference for that brand even in the presence of competing options. In marketing terms, building and enhancing brand awareness can positively influence customer loyalty in the context of the sport under study.

It has been determined that there is a significant positive relationship between the brand consciousness levels of secondary school students who are engaged in sports in general and brand loyalty (r=0,355; P<0,01) and brand habit (r=0,355; P<0,01) and emotional attachment to the brand (r=0,515; P<0,01); and a low level positive relationship between the search for diversity/innovation (r=0,283; P<0,01) and sensitivity to price discounts and promotions (r=0,195; P<0,01). These significant positive relationships help to understand brand awareness and brand loyalty. In particular, the positive impact of factors such as brand habituation and emotional attachment on brand loyalty is emphasized. At the same time, the search for variety/innovation and sensitivity to price reductions/promotions can also influence brand loyalty. This information can help brands create more effective marketing strategies among young consumers.

It has been determined that there is a positive and moderately significant relationship between the brand awareness levels of secondary school students who are engaged in sports and the dimensions of preference criteria for product purchase such as functionality criterion (r=0,420; P<0,01), well-known brand/high image criterion (r=0,575; P<0,01), innovative/fashionable criterion (r=0,525; P<0,01) and social environment/friends criterion (r=0,419; P<0,01). These findings show the effect of brand awareness on the preference criteria that affect students' product preferences. In particular, it is seen that criteria such as well-known brand/high image and innovation/fashionability gain more importance with increasing brand awareness. Social environment and friends' preferences are also important factors affecting brand awareness. This information emphasizes the importance of taking into account the brand awareness and preference criteria of young consumers when creating brand management and marketing strategies.

Table 2. Pearson Correlation Coefficient Results for the Relationship Between Brand Loyalty Behavior, Brand Function Perceptions, Factors Affecting Brand Loyalty, and Preference Criteria for Product Purchases Among High School Students Engaged in Sports

		Brand Functions Scale			Factors Affecting Brand Loyalty Scale				Scale of Preference Criteria for Product Purchase			
		İF	SCF	SF	MH	DIS	ECB	SPDP	FC	RBHIC	IFC	SEC
Brand Loyalty	r	**0,306****	**0,597****	**0,262****	**0,395****	**0,283****	**0,443****	**0,235****	**0,348****	**0,451****	**0,413****	**0,413****
	P	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	n	250	250	250	250	250	250	250	250	250	250	250

•P<significant at 0.05 level••P< significant at 0.01 level

IF=Image Function, **SCF**=Signaling/Classical Function, **SF**=Social Function, **MH**=Mark Habituation, **DIS**=Diversity/Innovation Seeking, **ECB**=Emotional Commitment to the Brand, **SPDP**=Sensitivity to Price Discounts and Promotions, **FC=**Functionality Criterion, **RBHIC**=Renowned Brand/High Image Criterion, **IFC**=Innovative/Fashionable Criterion, **SEC**=Social Environment/Friends Criterion

As seen in Table 2, among high school students engaged in sports, there is a positive moderate-level relationship between brand loyalty behavior and brand function perceptions in terms of image function (r=0.306; P<0.01) and a positive high-level relationship in terms of branding/classic function (r=0.597; P<0.01). However, there is a low-level significant positive relationship between brand loyalty behavior and social function (r=0.262; P<0.01). Again, among high school students engaged in sports, there is a positive moderate-level relationship between brand loyalty behavior and dimensions influencing brand loyalty, specifically habituation to the brand (r=0.395; P<0.01) and emotional attachment to the brand (r=0.443; P<0.01). Additionally, there is a low-level significant positive relationship between brand loyalty behavior and the dimensions of diversity/innovation-seeking (r=0.283; P<0.01) and sensitivity to price discounts and promotions (r=0.235; P<0.01). Among high school students engaged in sports, there is a significant positive moderate-level relationship between brand loyalty behavior and dimensions of preference criteria for product purchases, specifically the functionality criterion (r=0.348; P<0.01), the recognized brand/high image criterion (r=0.451; P<0.01), the innovative/fashionability criterion (r=0.413; P<0.01), and the social environment/friends criterion (r=0.413; P<0.01).

Table 3. Pearson's Correlation Coefficient Results for the Relationship between Brand Function Perceptions of Secondary School Students Engaged in Sports and Factors Affecting Brand Loyalty and Preference Criteria in Product Purchase

			Factors Affecting Brand Loyalty Scale				Scale of Preference Criteria for Product Purchase			
			MH	DIS	ECB	SPDP	FC	RBHIC	IFC	SEFC
Brand Functions Scale	Image Function	r	**0,350****	**0,362****	-0,014	**0,145***	-0,076	**0,354****	**0,307****	**0,259****
		P	0,000	0,000	0,831	0,022	0,231	0,000	0,000	0,000
		n	250	250	250	250	250	250	250	250
	Marking Classic Function	r	**0,340****	**0,291****	**0,596****	**0,214****	**0,583****	**0,516****	**0,472****	**0,431****
		P	0,000	,000	,000	,001	0,000	0,000	0,000	0,000
		n	250	250	250	250	250	250	250	250
	Socia Function	r	**0,386****	**0,361****	0,061	**0,213****	-0,033	**0,314****	**0,274****	**0,212****
		P	0,000	,000	0,340	0,001	0,607	0,000	0,000	0,001
		n	250	250	250	250	250	250	250	250

***P<significant at 0.05 level ****P< significant at 0.01 level**

MH=Mark Habituation, **DIS**=Diversity/Innovation Seeking, **ECB**=Emotional Commitment to the Brand, **SPDP**=Sensitivity to Price Discounts and Promotions, **FC**=Functionality Criterion, **RBHIC**=Renowned Brand/High Image Criterion,**IFC**=Innovative/Fashionable Criterion, **SEFC**=Social Environment/Friends Criterion

As can be seen in Table 3, it was determined that there is a significant positive relationship between the image function, one of the dimensions of brand function perceptions of secondary school students who do sports, and brand habit (r=0,350; P<0,01) and diversity/innovation seeking (r=0,362; P<0,01), which are among the dimensions affecting brand loyalty; and a low level positive relationship between sensitivity to price discounts and promotions (r=0,145; P<0,01). Again, it has been determined that there is a significant positive relationship between the image function, one of the dimensions of brand function perceptions of secondary school students who do sports, and the well-known brand/high image criterion (r=0,354; P<0,01), innovative/fashionable criterion (r=0,307; P<0,01), and social environment/friends criterion (r=0,259; P<0,01), one of the dimensions of preference criteria in product purchase. It has been determined that there is a significant positive relationship between the marking/classical function, which is one of the dimensions of brand function perceptions of secondary school students who do sports, and brand habit (r=0,340; P<0,01) and emotional attachment to the brand (r=0,596; P<0,01), which are among the dimensions affecting brand loyalty; and a low level positive relationship between the search for diversity/innovation (r=0,291; P<0,01) and sensitivity to price discounts and promotions (r=0,214; P<0,01). Again, it has been determined that there is a positive and moderately significant relationship between the marking/classical function, which is one of the dimensions

of brand function perceptions of secondary school students who do sports, and the functionality criterion (r=0,583; P<0,01), well-known brand/high image criterion (r=0,516; P<0,01), innovative/fashionability criterion (r=0,472; P<0,01) and social environment/friends criterion (r=0,431; P<0,01) among the dimensions of preference criteria in product purchase.

Table 4. Pearson's Correlation Coefficient Results for the Relationship between the Factors Affecting the Brand Loyalty of Secondary School Students Engaged in Sports and the Preference Criteria for Product Purchase.

			Scale of Preference Criteria for Product Purchase			
			Functionality Criterion	Well-known Brand/High Image Criteria	Innovative/Modernity Criteria	Social Environment/Friends Criteria
Factors Affecting Brand Loyalty Scale	Brand habituation	r	**0,225****	**0,397****	**0,374****	**0,331****
		P	0,000	0,000	0,000	0,000
		n	250	250	250	250
	Seeking Diversity/Innovation	r	**0,265****	**0,419****	**0,358****	**0,430****
		P	0,000	0,000	0,000	0,000
		n	250	250	250	250
	Emotional Commitment to the Brand	r	**0,652****	**0,483****	**0,433****	**0,441****
		P	0,000	0,000	0,000	0,000
		n	250	250	250	250
	Sensitivity to Price Discounts and Promotions	r	**0,283****	**0,304****	**0,245****	**0,336****
		P	0,000	0,000	0,000	0,000
		n	250	250	250	250

As seen in Table 4, there is a positively moderate level relationship between brand loyalty, one of the dimensions influencing brand loyalty of high school students engaged in sports, and the recognized brand/high image criterion (r=0.397; P<0.01), the innovative/fashionable criterion (r=0.374; P<0.01), and the social environment/friends criterion (r=0.331; P<0.01) among product preference criteria for product purchase. However, there is a positively low-level significant relationship with the functionality criterion (r=0.225; P<0.01).

Once again, it has been determined that among the dimensions influencing brand loyalty of high school students engaged in sports, there is a positively moderate level relationship between diversity/innovation pursuit and recognized brand/high image criterion (r=0.419; P<0.01), the innovative/fashionable criterion (r=0.358; P<0.01), and the social environment/friends criterion (r=0.430; P<0.01) among product preference criteria for product purchase. However, there is a positively low-level significant relationship with the functionality criterion (r=0.265; P<0.01).

It has been determined that among the dimensions influencing brand loyalty of high school students engaged in sports, there is a positively moderate level significant relationship between emotional attachment to the brand and functionality criterion (r=0.652; P<0.01), recognized brand/high image criterion (r=0.483; P<0.01), innovative/fashionable criterion (r=0.433; P<0.01), and the social environment/friends criterion (r=0.441; P<0.01) among product preference criteria for product purchase.

It has been determined that among the dimensions influencing brand loyalty of high school students engaged in sports, there is a positively moderate level significant relationship between sensitivity to price discounts and promotions and the recognized brand/high image criterion (r=0.304; P<0.01) and the social environment/friend's criterion (r=0.336; P<0.01) among product preference criteria for product purchase. However, there is a positively low-level significant relationship with the functionality criterion (r=0.283; P<0.01) and the innovative/fashionable criterion (r=0.245; P<0.01)

DISCUSSION & CONCLUSION

The rapid increase in the use of mass media and social media, both in our country and worldwide, has led to the emergence of various trends. Especially among middle and high school age groups, brand awareness and brand usage have become widespread. This has made children and young people in this age group an important target audience for various brands and commercial companies that want to establish their own brands. The substantial potential for profit and return on investment in this emerging market has caused the role of children and young people in commercial spending to increase day by day. As a result, brand competition has reached significant proportions.

In parallel with this, changes in the family structure, changes in the education system and the perspective of the child have encouraged children to shop according to their own preferences from an early age. Commercial shopping that starts at an early age reveals that brand awareness is formed in children from a very young age. In addition, this brand consciousness developed in children has become supported by families, as the child equipped with a brand is seen as a sign of prestige and social status for them. Studies have revealed that children have a say in the expenditures of families at a rate of over 43%; moreover, there is a development in this direction not only in food, beverages and products for children, but also in other products that the family will consume or use together (Laurent & Kapferer, 1985).

As seen in Table 1, it has been determined that there is a positively moderate significant relationship between the levels of brand consciousness displayed by high school students who engage in sports and their brand loyalty behaviors in general. In other words, it is possible to say that as students' levels of brand consciousness increase, their brand loyalty behaviors will also increase. The studies in the related literature emphasize that having brand awareness in secondary education level students will make significant contributions to the formation of brand loyalty. Elements such as the image, quality, perceived value, customer satisfaction and replacement cost offered by the brand to children and young people are seen as extremely critical stages that determine how long and loyalty will be permanent to the brand awareness formed. In summary, the result of the research has revealed the importance of brands or brands, which have an extremely important place in terms of the role of children and young people in mental development, identity formation and socialization today, to exhibit approaches that will respond to the physical, spiritual and social expectations of children and young people, especially at the secondary education level. Again, it has been determined that there is a positive and moderately significant relationship between the brand awareness levels of secondary school students who do sports and their perceptions of brand functions (image function, marking/classical function and social function). In other words, it is possible to say that with the increase in students' brand awareness levels, their perceptions of brand functions will also increase.

Brand functions play a significant role for companies because they greatly influence consumers' responses to marketing activities related to a brand. For example, consumers' perception of brands, their preferences, purchase behaviors, and their responses to promotional activities are all influenced by how they perceive and interpret the functions of a brand (Rio et al., 2001). It has been determined that there are positive and significant relationships between the overall brand awareness levels exhibited by high school students engaged in sports and the factors influencing brand loyalty (brand habit, variety/novelty seeking, emotional attachment to the brand, price discounts, and sensitivity to promotions). In other words, it is possible to say that as the level of brand awareness among students increases, the degree to which factors affecting brand loyalty also influence them will increase. The other result in Table 1 is that there is a positive and moderately significant relationship between the brand awareness levels of secondary school students who do sports in general and the preference criteria (functionality criterion, well-known brand/high image criterion, innovative/fashionability criterion and social

environment/friends criterion) in product purchase. In other words, it is possible to say that as students' brand awareness levels increase, their preference criteria in product purchase will also increase.

Between the ages of 11 and 17, teenagers exhibit a high degree of selectivity and switching between brands, and the chosen brands hold significant and privileged positions in the eyes of these teenagers. This period is when teenagers develop specific identities related to brands. During this stage, young people determine which brands are popular and which ones enhance or diminish their social status within their peer groups ((Moven & Minor, 1998). In this frame of mind, certain criteria play a crucial role in determining the level of brand awareness among these young individuals. In a market with a plethora of brands, one of the most significant factors that can expedite the decision-making process for purchasing a product is brand habit. Instead of evaluating each brand individually, brand habit is instrumental in shortening the decision-making process for consumers. The physical, emotional, and social benefits offered by a brand previously used by a consumer can positively influence the level of brand awareness that this brand will create in the consumer. Furthermore, to speak of genuine brand loyalty, we need to discuss strong brand attachment. Brand attachment signifies emotional and psychological commitment to a brand within a product (Beatty et al., 1988). Brand loyalty is more commonly observed in products that consumers perceive as highly important for symbolizing their own identities, values, and needs (Mowen & Minor, 1998). The emotional attachment to a brand can be attributed to factors such as past experiences with the brand (how, where, and through whom they were introduced to the brand), the contribution it makes to their daily lives, its role in their social circles, its logo, and more. These factors can be seen as reasons for the emotional attachment to the brand and can significantly influence the level of brand awareness. One of the undoubtedly most significant expectations consumers have from the products offered by brands is functionality. Functionality, which plays a crucial role in the formation of brand awareness, will contribute to customer retention and the development of brand loyalty based on the satisfaction derived from the brand's performance and the functionality it provides. At this stage, the performance of the brand holds great importance. Consumers tend to favor brands that effectively meet their needs and desires (Hanaysha, 2016). Building on this, it can be said that young customers who have positive experiences with the functionality of the brand's products are likely to develop a healthier and more enduring level of brand awareness and a positive brand image.

As seen in Table 2, it was determined that there is a positive and moderately significant relationship between brand loyalty behaviors and brand function perceptions (image function, marking/classical function and social function) of secondary school students engaged in sports. When the literature related to the field is reviewed, the image function, which is one of the dimensions of brand function perceptions, which is extremely important for children and young people, has an important place in determining the status of the brand used as a means of showing or displaying itself during the creation of the image and in social relations. In this context, it is revealed that the image function has a very important place in increasing brand loyalty. It has been observed that there are positive and significant relationships between the brand loyalty behaviors of high school students who engage in sports and the factors influencing brand loyalty (brand habit, variety/novelty seeking, emotional attachment to the brand, price discounts, and sensitivity to promotions). One of the most challenging sub-dimensions in building consumer loyalty to a brand and, consequently, the foundation of brand loyalty, is brand habituation. In an ever-expanding and increasingly competitive market, it is crucial for customers to prefer a brand they are familiar with, know, and have had past experiences with, in other words, are habituated to when considering brand loyalty. Recognizing that, for brands, it is generally less costly to retain existing customers than to acquire new ones, our study's findings align with the literature, underscoring the importance of customer preference for familiar and habituated brands in the context of brand loyalty. Another result in Table 2 is that

there is a positive and moderately significant relationship between the brand loyalty behaviors of secondary school students who do sports and the preference criteria (functionality criterion, well-known brand/high image criterion, innovative/fashionability criterion and social environment/friends criterion) in product purchase. In this context, according to the results in Table 2, it is possible to say that with the increase in the level of brand loyalty behavior of secondary school students who do sports, their perception of brand functions, their level of being affected by the factors affecting brand loyalty and their preference criteria in product purchase will also increase.

As seen in Table 3, there are positive and significant relationships between the dimensions of brand function perceptions among high school students engaged in sports and the dimensions influencing brand loyalty. Specifically, there are positive relationships between the image function and the habituation to the brand, variety/novelty-seeking, and price discounts and sensitivity to promotions dimensions. Additionally, there are positive relationships between the preference criteria dimensions in product purchases, such as recognized brand/high image criteria, innovative/fashionable criteria, and social circle/friend criteria. There are positive and significant relationships observed between the dimensions of brand function perceptions, specifically the signaling/classic function, among high school students engaged in sports and the factors influencing brand loyalty (brand habituation, variety/novelty seeking, emotional attachment to the brand, price discounts, and sensitivity to promotions). Additionally, positive relationships exist between the preference criteria dimensions in product purchases (functionality criteria, recognized brand/high image criteria, innovative/fashionable criteria, and social circle/friend criteria). It has been determined that among the dimensions of brand function perceptions of high school students engaged in sports, there are positive and significant relationships between the social function and the dimensions influencing brand loyalty, namely brand habituation, variety/novelty seeking, price discounts, and sensitivity to promotions. Furthermore, there are positive relationships between the preference criteria dimensions in product purchases, such as recognized brand/high image criteria, innovative/fashionable criteria, and social circle/friend criteria. Based on the results presented in Table 3, it is possible to assert that as the levels of brand function perceptions increase among high school students engaged in sports, their levels of influence by the factors affecting brand loyalty and their preference criteria in product purchases will also increase.

As seen in Table 4, it has been determined that there are positive and significant relationships between the factors influencing brand loyalty (brand habituation, variety/novelty seeking, emotional attachment to the brand, price discounts, and sensitivity to promotions) and the preference criteria in product purchases (functionality criteria, recognized brand/high image criteria, innovative/fashionable criteria, and social circle/friend criteria) among high school students engaged in sports. The abundance of products and brands, the increasing diversity of raw materials due to advancing technology, and developments in design and manufacturing sectors have led to a wide variety of products available to consumers. Additionally, the diversity in products offered to consumers is influenced by the trends and movements that gain acceptance and popularity within the social circles and social media platforms. This conformity to various trends that are embraced and favored by friends and peers in one's social environment plays a crucial role in shaping the brand preferences of young people and subsequently developing brand loyalty. The emotional attachment to a brand is influenced more by the experiences children and young people have with the brand, the physical, emotional, and social benefits the brand offers to consumers, the desired image they want to create, the added value provided by the brand, the preference for innovative, fashionable brands that are highly popular among young people, and the desire to belong to or remain within a social circle facilitated by the use of branded products. These factors have a significant impact on brand loyalty among young people, more so than the corporate identity of the brand itself. One of the most significant influences of our contemporary world's lifestyle, technology, education, mass communication

tools, various social media applications, on children and young people is the prevalence of brand usage and the resulting image perception that endures until the next innovation or emerging trend. Individuals in this age group often believe that the brand image (brand value) associated with the products they purchase and use provides them with a high degree of added value in shaping the image they want to create. Additionally, these brands continuously reinvent their products, adapting them to the times and current fashion trends, which positively contributes to brand loyalty among these individuals. In this context, it is possible to interpret the results in Table 4 as that the preference criteria in product purchase will increase with the increase in the level of secondary school students who are engaged in sports being affected by the factors affecting brand loyalty.

Recommendations

A more in-depth understanding of the relationships can be achieved through a comprehensive study that includes qualitative data in addition to quantitative analysis. The use of focus groups or interviews can provide a deeper understanding of what students think about brand awareness and brand loyalty, how they determine their preferences, and the impact brands have on them.

The research should include students from different geographical regions and cultural groups. This can help us understand the geographical and cultural variations of factors that influence brand awareness and loyalty.

Brand awareness and brand loyalty behaviors can change over time. The research should track how students' views and behaviors in these areas evolve over time and provide a long-term perspective for understanding these changes.

Businesses should specifically develop digital marketing strategies to influence and attract young people. Tools such as social media platforms, digital advertising and influencer marketing can be used to attract the attention of young people.

Young people should be encouraged to engage with brands and provide feedback. Brands should track and respond to their feedback on social media, so that young people can build a stronger bond with the brand.

Young people are familiar with technology, so offering digital experiences can make the brand more appealing. For example, creating mobile apps, games or virtual reality experiences can engage young people.

Young people are hungry for information. Businesses can increase youth brand awareness by providing educational content about their products or services. Educational blog posts, video content or training courses can be created.

Collaborating with other brands that young people appreciate or partnering with influencers can attract the attention of young people.

Consideration can be given to young people's feedback and care can be taken to improve products or services according to young people's wishes and needs.

Limitations

The results of the research will depend on the criteria used during sample selection. The fact that the sample of this study consists of a specific region, a specific age group, and exclusively represents middle/high school students engaged in sports, may limit the generalizability of the results.

The research is based on relational data and cannot confirm causal relationships. In other words, it is not possible to draw definitive conclusions about the causes of the impact of brand awareness on brand loyalty or vice versa.

In the research, it may be challenging to have complete control over all potential variables. The impact of other factors (such as economic conditions, family influence, media exposure) on brand awareness and brand loyalty could be overlooked.

Since the research was conducted during a specific period, it may not capture changes over time or seasonal effects.

It should be noted that the measurement instruments used in the research may not have captured all important variables, and as a result, some factors may have been overlooked.

Considering these suggestions and limitations, designing future research with more comprehensive, diverse, and long-term data could enhance our understanding of brand awareness and brand loyalty topics and lead to broader applications.

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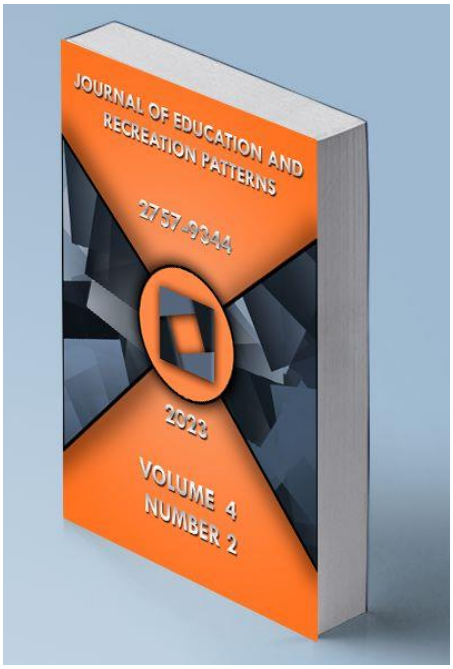
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Examination of Mental Training and Digital Game Playing Habits of Athletes

Savaş AYHAN[1], Ercan TİZAR[2], Ramazan ERDOĞAN[3]

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[1] Savaş Ayhan, Doctor Lecturer, Dicle University School of Physical Education and Sports, savasayhan2011@gmail.com, https://orcid.org/0000-0003-4238-1844

[2] Ercan Tizar, PhD, Dicle University School of Physical Education and Sports, ercantizar@gmail.com, https://orcid.org/0000-0002-3961-7417

[3] Ramazan Erdoğan, Assistant Professor, Bitlis Eren University School of Physical Education and Sports, ramaznerdogan@hotmail.com, https://orcid.org/0000-0001-5337-942X

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Examination of Mental Training and Digital Game Playing Habits of Athletes

Savaş Ayhan[1], Ercan Tizar[2], Ramazan Erdoğan[3]

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ABSTRACT
This research was conducted to examine the mental training and digital game playing behaviors of athletes in terms of various demographic variables. 280 volunteer athletes (174 men and 106 women) from Diyarbakır (140) and Elazığ (140) engaged in individual and team sports branches as members of the research group. The study used the "Personal Information Form" as a data collection instrument, the "Mental Training Inventory in Sports (MTIS)" to assess athletes' mental training levels, and the "Digital Gaming Attitude Scale (DGAS)" to assess their attitudes toward playing digital games. There was a significant difference between the type of sport performed, the status of playing digital games, the digitally playing the sport branch, the income status, the year of doing sports, the sportive degree, the weekly training time and the weekly digital game playing (p0.05). Male athletes outperformed female athletes on the Mental Training Inventory, whereas amateur athletes outperformed professional athletes. Female athletes outnumber male athletes in the research group; team sports athletes outnumber individual athletes; professional athletes outnumber amateur level athletes; athletes who play digital games outnumber those who do not; athletes with a high-income level do not play digital games; and athletes with a sports background of 12 years or more do not play digital games. The total scale score average appeared to be larger. As a consequence, it was discovered that there is a positive and highly significant association between athletes' mental training and digital game playing attitudes.

Keywords: Digital Gaming Habits, Individual Sports, Mental Training, Team Sports

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INTRODUCTION

Sport is expressed as an expression that allows individuals to maintain their physical health, promotes social growth, and influences people's mental development. While persons who participate in sports to improve their athletic performance are physiologically influenced, they should also be psychologically prepared for competitions and training (Karaca & Gündüz, 2021). Various coaches and specialists in the field have stated that an athlete's psychological preparation accounts for 50% of winning versus an opponent with the same physical characteristics (Weinberg & Gould, 2015). As a result of this knowledge, the individual's mental and psychological condition in the sporting environment influences his athletic performance. Performance is defined by athletes' "physiological, biomechanical, and psychological" indicators during exercise or training (Altıntaş & Akalan, 2008). All of these aspects have increased the importance of trainings to be used in the development of their motor characteristics and mental studies, which have a favorable impact on their psychological performance as coaches and players.

Mental training applications, in addition to trainings used to build motor abilities, can help athletes improve their athletic performance. In addition to all of these elements, it is necessary to guarantee that the athletes' psychological issues are managed without impairing their performance (Erdogan & Gülşen, 2020). Mental training is a technique that is based on the idea that psychological factors promote physical performance. Athletes' high degree of physiological and psychological effects in contests and training will also have a negative impact on their athletic performance (Hill et al., 2010; Mesagno et al., 2012). Mental training is used to improve athletic performance, provide stronger mental skills by suppressing worry and fear (Anderson & Anshel, 2002; Lane et al., 2011). Athletes use talking to themselves, mental rejuvenation, and other strategies to lessen bad situations, enhance focus, and strengthen relaxation routines as mental training components (Karaca & Gündüz, 2021). According to researchers, mental training is the process of mentally animating athletes' movements with intense attention without a genuine application, recovering information stored with earlier studies, and establishing meaningful integrity with this information. They stated that mental training is a mentally animated simulation in this regard (Öner & Cankurtaran, 2020; Moran, 2002). In this regard, technological innovations, particularly simulations and digital games for the athletic industry, are critical in the performance of mental training athletes.

When technology was not as evolved as it is now; people used to play games in parks, streets, and coffee shops. They now play video games at home, work, even in coffee shops. They began to play virtual games in numerous facets of their lives. Rather than playing on local playgrounds, cultures nowadays choose to play games with digital gadgets in a virtual world and in front of a screen (Kaya, 2013). Today, this condition is increasing public interest in digital gaming. Because "digital and traditional game" are structurally and conceptually similar, the notions of traditional and digital game should be clearly articulated while examining the concept of digital game. The location of the games, game genres, gadgets, and number of players are the most crucial features that distinguish traditional and digital game concepts. A digital game is defined as a system with rules and purposes that is played by interacting with computer programs using devices such as a "mouse, screen, joystick, and keyboard" (Hazar, 2016). According to studies, digital games have both detrimental and good effects on users. They reported that children in the developmental period are more quickly affected in terms of "cognitive, affective, social, and psychomotor" development during these periods, as well as having a direct effect on children's developing areas (Şahin & Tugrul, 2012). According to this understanding, athletes' choice of digital games for the sports in which they actively participate can increase their performance.

It is apparent that athletes' mental training and digital game playing habits are crucial to achieving competitive success in this regard. This research was conducted to examine the mental training and digital game playing behaviors of athletes in terms of various demographic variables.

METHOD

Research Design

The purpose of this study was: gender, province variance, sports, type variance, sportive degree, digital gaming status, status of playing the sports, branch of the athletes in digital, age, income, doing sports year, training duration, Since it was desired to determine whether digital gaming duration differs according to variables, a descriptive survey model, one of the quantitative research designs, was used in the research.

Population and Sample of the Research

The research group consisted of 280 (174 men, 106 women) volunteer athletes who are actively participating in individual and team sports in Diyarbakır (140) and Elazığ (140). The research data collection instrument is divided into two sections: a "Personal Information Form" in the first section and scales to determine "Attitudes towards Mental Training and Playing Digital Games" in the second section. The Bitlis Eren University Non-Interventional Ethics Committee (21/14-12-13-14) approved the ethics committee.

Data Collection Tools

Mental Training Inventory in Sports (MTIS): Questionnaire form grading, score limits; Grading: Totally Disagree: 1.00–1.79; Disagree: 1.80–2.59; Undecided: 2.60–3.39; Agree: 3.40–4.19; Totally Agree: 4.20–5.00**,** Score limits: 0–29 Very inadequate; 30–49 Inadequate**;** 50–69 Medium**;** 70–89-Good**;** It was rated as “90–100 Very Good”.

The validity and reliability study of the Mental Training Inventory in Sports was carried out by the researchers, and the KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) value was determined as .899, Bartlett Test 3247.940 and (Cronbach Alpha) α= 0.91 (Yarayan & İlhan, 2018).

Digital Gaming Attitude Scale (DGAS): Questionnaire form grading, score limits; Grading: Strongly Disagree: 1.00–1.79; Disagree: 1.80–2.59; Undecided: 2.60–3.39; Agree: 3.40–4.19; Strongly Agree: 4.20–5.00, Score limits: 0–29 Very inadequate; 30–49 Inadequate; 50–69 Medium; 70–89-Good; It was rated as “90–100 Very Good”.

The researchers conducted a validity and reliability assessment of the Digital Gaming Attitude Scale, and the KMO (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) value was determined to be ,894, Bartlett Test 2101.908, and (Cronbach Alpha) α= 0.82 (Demir & Bozkurt, 2019).

Analysis of the Data

The data was analyzed using the SPSS statistical software. Athletes' demographic information, mental training level, and attitudes toward playing digital games were all described using descriptive statistics. The independent t and one-way ANOVA tests were performed to compare groups after confirming that the data had a normal distribution. Correlation analysis was used to identify the direction of the link between the variables, and regression analysis was used to determine the influence of mental training on digital game playing attitude. The significance level was set at $p < 0.05$.

Table 1. Skewness and Kurtosis Values for the Scales

Scales	Mean±sd	Skewness	Kurtosis
Mental Basic Skills	15,54±3,81	-,557	-,751
Mental Performance Skills	23,34±5,19	-,317	-,846
Interpersonal Skills	16,69±3,23	-,227	-,1500
Monologue (Internal)	11,17±2,77	,237	-,1548
Mental Impersonation	11,60±2,98	-,415	-,851
Mental Training Total	78,23±15,93	-,186	-,821
Cognitive	17,44±4,42	,098	-1,044
Affective	16,69±4,66	,287	-,964
Behavioral	26,62±8,73	-,263	-,475
Digital Gaming Total	60,59±14,51	,103	-,532

It was determined that the skewness and kurtosis values of both scales were in the range of -2>….<+2, and it was concluded that the data was suitable for normal distribution (George & Mallery, 2010).

FINDINGS

The data collected on the questions to be addressed in accordance with the overall goal of the research, the findings gained, and the conclusions drawn based on these findings are reported in this section.

Table 2. Demographic Information of Athletes

Variables		Frequency	Percentage (%)
Gender	Male	174	62,1
	Female	106	37,9
Age	18-21 years	166	59,3
	22-27 years	67	23,9
	28 years and over	47	16,8
Perceived Economical Status	Low	65	23,2
	Average	133	47,5
	Good	82	29,3
Sport Type	Team Sports	119	42,5
	Individual Sports	161	57,5
Doing Sports Year	1-5 years	53	18,9
	6-11 years	168	60
	12 years and over	59	21,1
Sportive Grade	Professional	94	33,6
	Amateur	186	66,4
Weekly Training Hour	1-5 hours	63	22,5
	6-11 hours	55	19,6
	12-17 hours	129	46,1
	18 hours and over	33	11,8
Do you play digital game?	Yes	165	58,9
	No	115	41,1
Weekly Digital Gaming Period	1-4 hours	163	58,2
	5-9 hours	68	24,3
	10 hours and over	49	17,5
Do you play the sports branch you have done in the digital environment?	Yes	161	57,5
	No	119	42,5

When Table 2 is reviewed, it is seen that 62.1% of the athletes are male, 37.9% are female, 59.3% are 18-21 years old, 23.9% are 22-27 years old, 16.8% are They were 28 years old and over, 47.5% had a medium income, 29.3% had a good income level, 23.2% had a low income level, 57.5% were involved in individual team sports, and 66%, It was observed that 4 of them continued their sportive branch at the amateur level. 60% of the athletes do sports for 6-11 years, 18.9% for 1-5 years, 21.1% for 12 years or more, 46.1% for 12-17 hours, 22.5% It was determined that 1-5 hours of trainees, 19.6% of them did 6-11 hours of training, and 11.8% of them trained for 18 hours or more weekly. 58.9% of the research group played digital games, 58.2% played 1-4 hours, 24.3% played 5-9 hours, 17.5% played 10 hours or more weekly, and It has been observed that 57.5% of them play their sports branch in digital environment.

Table 3. t Test Analyses Based on Athletes' Gender Variance

	Gender	$\overline{X}$	**Sd.**	**t**	**p**
Mental Basic Skills	Male	15,35	3,90	-,117	0,90
	Female	15,40	3,68		
Mental Performance Skills	Male	23,12	5,28	-,127	0,89
	Female	23,20	5,05		
Interpersonal Skills	Male	16,69	3,23	,773	0,44
	Female	16,38	3,23		
Monologue (Internal)	Male	11,18	2,81	-,135	0,89
	Female	11,23	2,73		
Mental Impersonation	Male	11,47	3,02	-,155	0,87
	Female	11,52	2,92		
Mental Training Total	Male	77,83	16,24	,035	0,97
	Female	77,76	15,47		
Cognitive	Male	17,17	4,42	-1,582	0,11
	Female	18,03	4,39		
Affective	Male	16,81	4,81	,162	0,87
	Female	16,71	4,43		
Behavioural	Male	26,54	8,76	,440	0,66
	Female	26,06	8,70		
Digital Gaming total	Male	60,52	14,23	-,163	0,87
	Female	60,82	15,02		

When Table 3 was assessed, it was determined that there was no statistical difference between the gender variable and Mental Training Scale Total, Digital Game Playing Attitude Scale Total, scale sub-dimension mean scores ($p>0.05$).

Table 4. t Test Analyses Based on Athletes' Province Variance

	Province	$\overline{X}$	**Sd.**	**t**	**p**
Mental Basic Skills	Diyarbakır	15,43	3,78	,282	0,77
	Elazığ	15,30	3,84		
Mental Performance Skills	Diyarbakır	23,16	5,16	,023	0,98
	Elazığ	23,15	5,23		
Interpersonal Skills	Diyarbakır	16,63	3,21	,295	0,76
	Elazığ	16,52	3,26		
Monologue (Internal)	Diyarbakır	11,25	2,78	,301	0,76
	Elazığ	11,15	2,78		

Mental Impersonation	Diyarbakır	11,55	2,98	,320	0,74
	Elazığ	11,43	2,98		
Mental Training Total	Diyarbakır	78,04	15,86	,247	0,80
	Elazığ	77,57	16,04		
Cognitive	Diyarbakır	17,63	4,41	,499	0,61
	Elazığ	17,37	4,44		
Affective	Diyarbakır	16,73	4,67	-,141	0,88
	Elazığ	16,81	4,67		
Behavioural	Diyarbakır	26,26	8,82	-,184	0,85
	Elazığ	26,45	8,66		
Digital Gaming total	Diyarbakır	60,63	14,50	-,004	0,99
	Elazığ	60,64	14,57		

When Table 4 was examined, it was determined that there was no statistical difference between the province variable and Mental Training Scale Total, Digital Game Playing Attitude Scale Total, scale sub-dimension mean scores ($p>0.05$).

Table 5. t Test Analyses Based on Athletes' Sports Type Variance

	Sports Type	$\overline{X}$	**Sd.**	**t**	**p**
Mental Basic Skills	Individual Sports	13,20	3,69	-9,376	0,00*
	Team Sports	16,97	3,03		
Mental Performance Skills	Individual Sports	21,11	5,18	-5,995	0,00*
	Team Sports	24,66	4,66		
Interpersonal Skills	Individual Sports	14,89	3,13	-8,330	0,00*
	Team Sports	17,81	2,71		
Monologue (Internal)	Individual Sports	10,40	2,48	-4,289	0,00*
	Team Sports	11,80	2,84		
Mental Impersonification	Individual Sports	9,88	2,94	-8,754	0,00*
	Team Sports	12,68	2,40		
Mental Training Total	Individual Sports	69,50	15,28	-8,375	0,00*
	Team Sports	83,94	13,45		
Cognitive	Individual Sports	15,88	4,15	-5,548	0,00*
	Team Sports	18,70	4,23		
Affective	Individual Sports	15,76	4,32	-3,164	0,00*
	Team Sports	17,52	4,78		
Behavioural	Individual Sports	25,72	8,29	-1,051	0,29
	Team Sports	26,83	9,03		
Digital Gaming Total	Individual Sports	57,36	15,23	-3,297	0,00*
	Team Sports	63,05	13,50		

p<0,05

According to Table 5, it was specified that there was a significant difference between the sport type variable of the participants and the mean scores of the Mental Training Scale Total and scale sub-dimensions ($p<0.05$). While it was determined that there was a statistical difference between the sport type variable of the research group and the total score of the Digital Game Attitude Scale, the cognitive and affective mean scores of the scale sub-dimensions ($p<0.05$), there was no statistically significant difference between the behavioral sub-dimension mean scores ($p>0.05$). It was determined that the average score of the athletes participating in team sports was higher on the mental training and digital game playing scale than individual athletes.

Table 6. t Test Analyses Based on Athletes' Sportive Degree

	Sportive Degree	$\overline{X}$	Sd.	t	p
Mental Basic Skills	Professional	15,23	3,95	-,428	0,66
	Amateur	15,44	3,74		
Mental Performance Skills	Professional	20,91	5,52	-5,390	0,00*
	Amateur	24,29	4,63		
Interpersonal Skills	Professional	15,60	3,53	-3,652	0,00*
	Amateur	17,06	2,96		
Monologue (Internal)	Professional	11,60	2,84	-1,715	0,08
	Amateur	11,00	2,73		
Mental Impersonification	Professional	10,85	3,47	-2,585	0,01*
	Amateur	11,81	2,65		
Mental Training Total	Professional	74,21	18,30	-2,714	0,00*
	Amateur	79,62	14,29		
Cognitive	Professional	19,31	5,00	-5,098	0,00*
	Amateur	16,58	3,79		
Affective	Professional	17,15	4,94	,980	0,32
	Amateur	16,58	4,52		
Behavioral	Professional	24,56	11,73	-2,470	0,01*
	Amateur	27,26	6,58		
Digital Gaming Total	Professional	61,04	19,43	,330	0,74
	Amateur	60,43	11,29		

p<0,05

When Table 6 is examined, a statistical difference was determined between the sportive degree of the research group and the Mental Training Scale Total, sub-dimensions, mental performance skills and interpersonal skills mean scores ($p<0.05$), while there was a statistical difference between the mental basic skills and the self-talk sub-dimension mean score It was determined that there was no difference in terms of ($p>0.05$). It was determined that there was a significant difference between the sportive degree of the research group and the cognitive and behavioral mean scores of the scale sub-dimensions ($p<0.05$), there was no significant difference between the Digital Game Playing Attitude Scale total and the scale sub-dimension's affective mean scores ($p>0.05$). It has been observed that amateur athletes have higher mental training scale score averages than professional athletes, and at the digital game playing level, professional athletes have higher score averages than amateur athletes.

Table 7. t Test Analyses Based on Athletes' Digital Gaming Status

	Digital Gaming Status	$\overline{X}$	Sd.	t	p
Mental Basic Skills	Yes	16,78	3,19	8,304	0,00*
	No	13,33	3,72		
Mental Performance Skills	Yes	24,96	4,97	7,693	0,00*
	No	20,55	4,33		
Interpersonal Skills	Yes	17,41	2,93	5,418	0,00*
	No	15,38	3,28		
Monologue (İnternal)	Yes	12,03	2,87	6,342	0,00*
	No	10,02	2,14		
Mental Impersonification	Yes	12,51	2,50	7,520	0,00*
	No	10,02	3,01		
Mental Training Total	Yes	83,71	14,47		

	No	69,33	14,03	8,285	0,00*
Cognitive	Yes	18,04	4,73		
	No	16,72	3,82	2,493	0,01*
Affective	Yes	18,36	4,80		
	No	14,49	3,33	7,461	0,00*
Behavioral	Yes	29,31	8,32		
	No	22,12	7,49	7,407	0,00*
Digital Gaming Total	Yes	65,72	14,37		
	No	53,33	11,27	7,731	0,00*

p<0,05

When Table 7 is examined, it is seen that there is a statistical difference between the digital game playing status and Mental Training Scale Total, Digital Game Playing Attitude Scale total and all sub-dimensions mean scores (p<0.05). It was determined that the average mental training and digital game playing scores of the athletes who played digital games in the research group were higher.

Table 8. t-Test Analyzes According to the Status of Playing the Sports Branch of the Athletes in Digital

	Status of Playing the Sports Branch of the Athletes in Digital	$\overline{X}$	**Sd.**	**t**	**p**
Mental Basic Skills	Yes	16,39	3,38		
	No	13,99	3,93	5,470	0,00*
Mental Performance Skills	Yes	24,31	5,17		
	No	21,58	4,81	4,495	0,00*
Interpersonal Skills	Yes	16,96	2,93		
	No	16,05	3,54	2,367	0,01*
Monologue (Internal)	Yes	11,61	2,69		
	No	10,65	2,80	2,894	0,00*
Mental Impersonification	Yes	12,22	2,47		
	No	10,50	3,32	4,965	0,00*
Mental Training Total	Yes	81,51	14,50		
	No	72,78	16,45	4,699	0,00*
Cognitive	Yes	19,21	3,88		
	No	15,19	4,05	8,401	0,00*
Affective	Yes	17,23	4,55		
	No	16,15	4,75	1,932	0,05
Behavioral	Yes	28,29	6,64		
	No	23,74	10,41	4,447	0,00*
Digital Gaming Total	Yes	64,73	13,77		
	No	55,09	13,67	5,812	0,00*

p<0,05

When Table 8 was evaluated, it was determined that there was a statistically significant difference between the status of playing the sport branch of the research group in digital and the Mental Training Scale Total and all sub-dimension score averages (p<0.05). While it was seen that there was a statistical difference between the status of playing the sport branch of the research group in digital and the Digital Game Playing Attitude Scale Total, cognitive and behavioral score averages from the scale sub-dimensions (p<0.05), there was no statistical

difference between the affective sub-dimension mean scores. (p>0.05). It was observed that the mental training and digital game playing scores of the athletes who played their sports branch digitally were higher.

Table 9. Variance Analyses Based on Athletes' Age Variance

	Age	$\overline{X}$	Sd.	F	p	Significant Difference
Mental Basic Skills	18-21 years (1)	15,59	3,58	,754	0,47	-
	22-27 years (2)	15,13	4,21			
	28 years and over (3)	14,91	4,02			
Mental Performance Skills	18-21 years (1)	23,26	4,91	,540	0,58	-
	22-27 years (2)	23,38	5,53			
	28 years and over (3)	22,44	5,68			
Interpersonal Skills	18-21 years (1)	16,72	3,19	,407	0,66	-
	22-27 years (2)	16,38	3,33			
	28 years and over (3)	16,34	3,27			
Monologue (Internal)	18-21 years (1)	11,14	2,78	,781	0,45	-
	22-27 years (2)	11,55	2,78			
	28 years and over (3)	10,93	2,76			
Mental Impersonification	18-21 years (1)	11,62	2,91	,701	0,49	-
	22-27 years (2)	11,47	3,13			
	28 years and over (3)	11,04	3,04			
Mental Training Total	18-21 years (1)	78,35	15,30	,517	0,59	-
	22-27 years (2)	77,94	16,94			
	28 years and over (3)	75,68	16,76			
Cognitive	18-21 years (1)	17,82	4,42	1,121	0,32	-
	22-27 years (2)	17,13	4,52			
	28 years and over (3)	16,89	4,25			
Affective	18-21 years (1)	16,53	4,67	1,321	0,26	-
	22-27 years (2)	17,58	4,63			
	28 years and over (3)	16,48	4,64			
Behavioral	18-21 years (1)	25,83	8,98	,754	0,47	-
	22-27 years (2)	27,26	8,92			
	28 years and over (3)	26,91	7,49			
Digital Gaming Total	18-21 years (1)	60,19	15,02	,378	0,68	-
	22-27 years (2)	61,98	14,03			
	28 years and over (3)	60,63	13,50			

When Table 9 is examined, it is seen that there is no statistical difference between the age variable and Mental Training Scale Total, Digital Game Playing Attitude Scale Total, sub-dimension means scores (p>0.05).

Table 10. Variance Analyses Based on Athletes' Income

	Income	$\overline{X}$	Sd	F	p	Significant Difference
Mental Basic Skills	Low (1)	15,63	3,57	,586	0,55	-
	Average (2)	15,47	3,52			
	Good (3)	15,00	4,41			
Mental Performance Skills	Low (1)	23,12	5,14	3,378	0,03*	3>2
	Average (2)	22,45	5,06			
	Good (3)	24,32	5,28			
Interpersonal Skills	Low (1)	17,06	3,26	4,374	0,01*	1>2,3
	Average (2)	16,87	3,37			
	Good (3)	15,70	2,83			
Monologue (Internal)	Low (1)	10,92	2,97	1,059	0,34	-
	Average (2)	11,12	2,97			
	Good (3)	11,56	2,24			
Mental Impersonification	Low (1)	11,61	3,00	1,110	0,33	-
	Average (2)	11,22	3,18			
	Good (3)	11,82	2,60			
Mental Training Total	Low (1)	78,35	16,09	,210	0,81	-
	Average (2)	77,15	16,13			
	Good (3)	78,42	15,61			
Cognitive	Low (1)	17,56	4,64	5,457	0,00*	3>2
	Average (2)	16,71	4,56			
	Good (3)	18,73	3,71			
Affective	Low (1)	15,75	4,67	21,254	0,00*	3>1,2
	Average (2)	15,64	4,58			
	Good (3)	19,41	3,68			
Behavioral	Low (1)	24,2	8,73	19,267	0,00*	3>1,2
	Average (2)	24,24	8,86			
	Good (3)	31,08	6,50			
Digital Gaming Total	Low (1)	58,04	15,29	23,905	0,00*	3>1,2
	Average (2)	56,60	13,21			
	Good (3)	60,63	12,22			

***p<0.05**

When Table 10 is evaluated, a statistical difference was determined between the income level of the athletes and the mean scores of mental performance skills and interpersonal skills from the sub-dimensions of the scale ($p<0.05$), while the mean scores of Mental Training Scale Total, mental basic skills, speaking with oneself and mental animation from the scale sub-dimensions It was determined that there was no statistical difference between them ($p>0.05$). It was observed that there was a statistical difference between the income level of the participants and the mean scores of the total and all scale sub-dimensions of the Digital Game Playing Attitude Scale ($p<0.05$). It was determined that the highest score in the mental basic skills, cognitive, affective, behavioral and digital game playing scale total scores was in the group with a high-income level, and in the interpersonal skills sub-dimension, it was found in the group with a low-income level.

Table 11. Variance Analyses Based on Athletes' Doing Sports Year

	Doing Sports Year	$\overline{X}$	Sd	F	p	Significant Difference
Mental Basic Skills	1-5 years (1)	16,73	1,76	8,841	0,00*	1>2,3
	6-11 years (2)	14,61	3,90			
	12 years and over (3)	16,28	4,35			
Mental Performance Skills	1-5 years (1)	23,62	2,98	6,767	0,00*	3>2
	6-11 years (2)	22,32	5,33			
	12 years and over (3)	25,10	5,78			
Interpersonal Skills	1-5 years (1)	19,60	1,02	39,454	0,00*	1>2,3
	6-11 years (2)	15,59	3,11			
	12 years and over (3)	16,66	3,20			
Monologue (Internal)	1-5 years (1)	9,47	2,34	23,453	0,00*	3>1,2
	6-11 years (2)	11,19	2,71			
	12 years and over (3)	12,81	2,35			
Mental Impersonification	1-5 years (1)	12,03	1,99	4,749	0,00*	3>2
	6-11 years (2)	11,05	3,15			
	12 years and over (3)	12,25	3,02			
Mental Training Total	1-5 years (1)	81,47	8,87	8,095	0,00*	3>1,2
	6-11 years (2)	74,78	16,35			
	12 years and over (3)	83,11	17,68			
Cognitive	1-5 years (1)	18,28	1,62	11,059	0,00*	3>1,2
	6-11 years (2)	16,57	4,54			
	12 years and over (3)	19,45	5,03			
Affective	1-5 years (1)	12,43	2,20	69,389	0,00*	3>1,2
	6-11 years (2)	16,67	4,15			
	12 years and over (3)	20,94	3,98			
Behavioral	1-5 years (1)	20,96	2,82	43,254	0,00*	3>1,2
	6-11 years (2)	25,41	9,05			
	12 years and over (3)	33,91	6,02			
Digital Gaming Total	1-5 years (1)	51,67	3,46	51,620	0,00*	3>1,2
	6-11 years (2)	58,66	13,99			
	12 years and over (3)	74,32	12,77			

p<0,05

According to Table 11, it was determined that there was a statistically significant difference between the years of doing sports and Mental Training Scale Total, Digital Game Playing Attitude Scale Total, all sub-dimensions mean scores ($p<0.05$). The highest score in mental performance skills, self-talk (internal), mental visualization, mental training total, cognitive, affective, behavioral, digital game playing total was 1 in the group with 12 or more years of sports experience, and 1 in the sub-dimensions of mental basic skills and interpersonal skills. It was observed that he was in the group with -5 years of sports experience.

Table 12. Variance Analyses Based on Training Duration

	Training Duration	$\overline{X}$	sd	F	p	Significant Difference
Mental Basic Skills	1-5 hours (1)	13,53	3,71	9,353	0,00*	4>1,2,3
	6-11 hours (2)	15,30	4,22			
	12-17 hours (3)	15,75	3,50			
	18 hours and over (4)	17,45	3,01			
Mental Performance Skills	1-5 hours (1)	18,85	3,02	28,627	0,00*	3>1,2,4
	6-11 hours (2)	25,80	3,31			
	12-17 hours (3)	23,46	5,42			
	18 hours and over (4)	25,75	5,01			
Interpersonal Skills	1-5 hours (1)	16,61	3,70	9,247	0,00*	2>3,4
	6-11 hours (2)	17,92	2,87			
	12-17 hours (3)	15,65	3,00			
	18 hours and over (4)	17,87	2,50			
Monologue (Internal)	1-5 hours (1)	10,80	3,02	4,830	0,00*	4>1,2,3
	6-11 hours (2)	11,10	2,96			
	12-17 hours (3)	11,01	2,50			
	18 hours and over (4)	12,87	2,50			
Mental Impersonification	1-5 hours (1)	10,06	3,32	8,205	0,00*	4>1,2,3
	6-11 hours (2)	12,38	1,91			
	12-17 hours (3)	11,56	2,94			
	18 hours and over (4)	12,45	3,01			
Mental Training Total	1-5 hours (1)	69,88	14,10	11,129	0,00*	4>1,2,3
	6-11 hours (2)	82,52	13,12			
	12-17 hours (3)	77,45	16,12			
	18 hours and over (4)	86,42	16,06			
Cognitive	1-5 hours (1)	16,82	4,08	12,649	0,00*	2>1,3,4
	6-11 hours (2)	19,38	3,48			
	12-17 hours (3)	17,93	4,60			
	18 hours and over (4)	13,96	3,51			
Affective	1-5 hours (1)	15,00	2,72	13,489	0,00*	4>1,2,3
	6-11 hours (2)	17,49	3,06			
	12-17 hours (3)	16,31	5,24			
	18 hours and over (4)	20,75	5,01			
Behavioral	1-5 hours (1)	20,61	8,43	28,836	0,00*	4>1,2,3
	6-11 hours (2)	27,60	5,19			
	12-17 hours (3)	26,23	8,62			
	18 hours and over (4)	35,75	5,01			
Digital Gaming Total	1-5 hours (1)	52,44	7,80	15,002	0,00*	4>1,2,3
	6-11 hours (2)	64,47	10,19			
	12-17 hours (3)	60,48	17,62			
	18 hours and over (4)	70,48	6,52			

***p<0,05**

When Table 12 is examined, it has been determined that there is a significant difference between the study group's training duration variable and Mental Training Scale Total, Digital

Game Playing Attitude Scale Total, all sub-dimensions mean scores ($p<0.05$). The highest score in mental performance skills, self-talk (internal), mental visualization, mental training total, affective, behavioral, digital game playing total was 6-11 hours in the group that trained for 18 hours or more, and the highest score in interpersonal skills and cognitive sub-dimensions was 6-11 hours. In the group that trained, the highest score in the interpersonal skills sub-dimension was determined to be in the group that trained for 12-17 hours.

Table 13. Variance Analyses Based on Athletes' Digital Gaming Duration

	Digital Gaming Duration	$\overline{X}$	Sd	F	p	Significant Difference
Mental Basic Skills	1-4 hours (1)	14,48	3,77			
	5-9 hours (2)	17,10	2,04			
	10 hours and over (3)	15,91	4,83	12,948	0,00*	2>1,3
Mental Performance Skills	1-4 hours (1)	21,78	4,80			
	5-9 hours (2)	26,66	2,45			
	10 hours and over (3)	22,85	6,81	24,915	0,00*	2>1,3
Interpersonal Skills	1-4 hours (1)	16,53	3,55			
	5-9 hours (2)	17,00	2,25			
	10 hours and over (3)	16,12	3,27	1,075	0,34	-
Monologue (Internal)	1-4 hours (1)	10,73	2,78			
	5-9 hours (2)	11,51	2,69			
	10 hours and over (3)	12,34	2,52	7,186	0,00*	3>1
Mental Impersonification	1-4 hours (1)	10,85	3,13			
	5-9 hours (2)	12,98	1,31			
	10 hours and over (3)	11,53	3,41	13,260	0,00*	2>1,3
Mental Training Total	1-4 hours (1)	74,40	15,63			
	5-9 hours (2)	85,26	9,39			
	10 hours and over (3)	78,77	20,21	12,159	0,00*	2>1
Cognitive	1-4 hours (1)	15,93	3,79			
	5-9 hours (2)	18,35	4,20			
	10 hours and over (3)	21,53	3,81	40,858	0,00*	3>1,2
Affective	1-4 hours (1)	15,47	4,62			
	5-9 hours (2)	17,35	3,54			
	10 hours and over (3)	20,30	4,20	24,401	0,00*	3>1,2
Behavioral	1-4 hours (1)	23,82	9,42			
	5-9 hours (2)	28,04	4,67			
	10 hours and over (3)	32,44	7,03	23,215	0,00*	3>1,2
Digital Gaming Total	1-4 hours (1)	55,23	12,35			
	5-9 hours (2)	63,75	12,04	45,507	0,00*	2>1,3
	10 hours and over (3)	60,63	14,26			

p<0,05

When Table 13 is evaluated, it is seen that there is a statistical difference between the digital game playing time variable of the research group and the mental performance skills, mental basic skills, talking to yourself and mental animation score averages from the Mental Training Scale Total and scale sub-dimensions ($p<0.05$). It was determined that there was no statistically significant difference between the mean scores of interpersonal skills ($p>0.05$). It was observed that there was a statistical difference between the duration of digital game playing of the athletes and the total score averages of the Digital Game Playing Attitude Scale and all the sub-dimensions of the scale ($p<0.05$). The highest score in mental basic skills, mental

performance skills, mental visualization, mental training total, digital game playing total was 5-9 hours in the group playing digital games, the highest score in self-talk (internal), cognitive, affective, behavioral sub-dimensions was 10 hours and It was observed that over 100 people were in the group playing digital games.

Table 14. Pearson Correlation Analysis Between Athletes' Attitudes to Mental Training and Playing Digital Games

		Digital Gaming
Mental Training	**r**	,607**
	p	,000
	N	280

p<0,05*

According to Table 14, there is a significant and positive relationship between Mental Training and Digital Game Playing Attitudes (r= .607, p>0.05).

DISCUSSION & CONCLUSION

Currently, swift technological improvements have changed people's life by directing them to digital games rather than traditional games in the field of playing games, and digital games are also being used in the sports sector. The use of digital games, particularly in the field of sports, is crucial in this context. The goal of this study was to identify athletes' mental training and digital game playing activities.

The type of sport performed, the status of playing digital games, playing the sport branch digitally, income status, year of doing sports, sportive degree, weekly training time, weekly digital game playing time, and mental training scale all showed a significant difference in the research group. There was no statistically significant difference between the athletes' gender, province, age variable, mental training scale, and sub-dimension. Male athletes had higher total score averages than female athletes on the mental training scale, and team athletes had higher average score averages than solo athletes. It has been determined that participants, amateur level athletes versus professional athletes, those who play digital games versus those who do not play, athletes who play their sports branch digitally have a higher mental training scale total score average than athletes who do not play. In the research group, athletes in the 18-21 age range were found to have a higher mental training scale mean score than athletes in other groups, athletes with a good income were found to have a higher mental training scale mean score than athletes in other groups, athletes with 12 years or more of sports experience were found to have a higher mental training scale mean score than athletes in other groups. When the research was assessed, Ocakoglu (2020) discovered that physical activity content virtual reality games have no effect on the exercise motivation level of athletes who continue their training together, but age and education status do. According to Arı et al., (2022), there was a substantial difference in the mental training skills of the participants based on gender, age, sports branch, and nationality, with female athletes having stronger mental training skills than male athletes. According to Erdogan and Gülşen's (2020) study, there was a significant difference between the students' mental training skills in terms of gender, year of sport, nationality, and branch variable, and their mental training skills improved as the year of sport increased. In their study, Karaaaç and ahan (2021) found no significant differences in mental training and optimal performance mood levels of athletes based on gender, branch, or weekly exercise status, but there was a significant difference depending on sports year and competitor

variable. In their study examining the relationship between mental training and performance in orienteering athletes, Karaca and Gündüz (2021) discovered that there was a positive and significant relationship between the athletes' mental training inventory and competition performance and the year of sports, there was no difference in terms of gender, and the systematic and purposeful application of mental training in sports. They suggested that it will have a favorable impact on the athletes' performance. In According to Kara and Ustaoglu Hoşver's (2019) study, age, volleyball playing time, and experience playing in play-offs had favorable effects on mental training levels, and the mental training levels of female volleyball players in the study were above the medium level. Çelik and Güngör (2020) investigated the influence of students' anxiety levels on their mental training skills at the faculty of sports sciences; they appeared to be in a relationship. Adeyeye et al. (2013) discovered that three weeks of mental skills training enhanced the mental skills, anxiety levels, and overall performance of table tennis players. Yüksel and Orhan (2021) discovered that the variables of gender, age, nationality, and sport type of athletes had a positive influence on their mental training skills in their study on the mental training levels of athletes interested in various sports disciplines. In a study, Mleziva (2014) discovered that a six-week mental skills training program improved the mental endurance of swimmers. Turan et al. (2020) discovered that four weeks of mental toughness and decision-making training increased athletes' performance, training, mental toughness, and decision-making techniques.

The research group's type of sport, status of playing digital games, playing the sport branch digitally, income status, year of performing sports, sportive degree, weekly digital game playing and training periods, and digital game playing scale varied significantly. Female athletes in the research group versus male athletes, team athletes versus individual athletes, professional athletes versus amateur level athletes, athletes who play digital games versus those who do not play, and athletes who play their sports branch digitally; among athletes with a good income level and those who have been playing sports for 12 years or more. Athletes aged 22-27 had a higher mean score on the total scale of digital game playing than the other categories. When the studies are examined, Delebe and Hazar (2022) stated in their study that age, gender and having a digital game playing tool are important factors in terms of digital game addiction of the participants. In his study, Tel (2021) examined the opinions of the athletes about playing digital games, it was determined that there was a significant difference between the gender, age, occupation, year of doing sports, level in the sportive branch and the attitudes of playing digital games, and that they played digital games at a moderate level. In the study conducted by Bozkurt (2022), it was found that there was a significant difference between students' father's education status, school success, and digital game playing time and digital game addiction, there was no significant difference between gender and mother's education status, and high school students had higher digital game addiction than students at other education levels. After all research it was determined that they had an average score. In their research, Can and Demir (2020) determined that e-sports players have a higher level of digital game addiction than athletes and the awareness level of digital game addiction is higher in e-sports players. Özsarı and Görücü (2023) stated in their study that digital addiction does not have a significant effect on life satisfaction. In the study conducted by Kumartaşlı et al., (2022), they stated that the participants were very active in the digital game environment, that playing digital games provided cognitive and affective development, but the development was not at this level in their psychomotor and physical development. In the study conducted by Barlett et al., (2009), it was reported that there was no change in the cognitive performance of the participants who did not play any games, but there was an increase in the cognitive performances of the participants who played a game with or without violence. In their study examining the thoughts of athlete students on the concept of digital game, Karaç Öcal and Araç Ilgar (2022) stated that playing digital games affects communication within the family, affecting the participants positively in terms of cognitive aspects while negatively affecting them physically and psychologically.

Mutlu Bozkurt and Öztürk stated in their study that there was a positive and significant relationship between athletes' digital game playing and mental training levels. Mateo-Orcajada et al., (2022) explored how professional League of Legends players' psychological characteristics altered during a match. They reported a decrease in all emotional states except depression. Students accepted playing digital games as a behavior, according to Öntürk et al., (2021), with male students playing more digital games than female students and third grade students playing more digital games.

Finally, there is a positive, extremely significant association between athletes' mental training and digital game playing attitudes. Male athletes outperform female athletes on the average mental training scale, participants in team sports outperform individual athletes, and amateur athletes outperform professional athletes. Female athletes outperformed male athletes in the research group; team sports athletes outperformed individual athletes; professional athletes outperformed amateur level athletes; athletes who play digital games outperformed those who do not; athletes with a high income level outperformed those who do not; and athletes who have been playing sports for 12 years or more outperformed those who have not. According to this information, we believe that using digital games for the sports branch, which they have done in conjunction with mental training, inside the programs to be established by the coaches, will improve the players' sporting performance.

Suggestions

1- Suggest conducting longitudinal studies to track changes in athletes' mental training and digital game habits over time. This would provide a more comprehensive understanding of the relationship between these variables.
2- Recommend expanding the study's reach to include athletes from various regions, sports, and age groups to ensure a more diverse and representative sample.
3- Suggest incorporating qualitative methods, such as interviews or focus groups, to gain a deeper understanding of athletes' experiences with mental training and digital game playing. Qualitative data can complement quantitative findings.
4- Propose conducting intervention studies to explore the effectiveness of integrating digital games with mental training programs. Assess how such interventions impact athletes' performance and well-being.
5- Recommend using objective measures alongside self-reporting to collect data on digital game habits, such as screen time tracking applications or game logs, to reduce self-reporting bias.
6- Suggest including additional variables, such as personality traits, competitive levels, or psychological well-being, in future research to provide a more comprehensive analysis of the factors influencing athletes' mental training and digital game habits.
7- Advocate for coach education programs that incorporate knowledge of mental training techniques and digital game use in sports. Coaches can play a significant role in guiding athletes in these areas.
8- Recommend awareness campaigns and educational programs for athletes, coaches, and parents on the potential benefits and risks of digital game use in sports settings.
9- Encourage collaboration between sports science, psychology, and game studies experts to further explore the intersection of mental training and digital gaming in sports.
10- Propose the development of guidelines or policies within sports organizations to promote responsible digital game use among athletes and to integrate mental training into sports programs.

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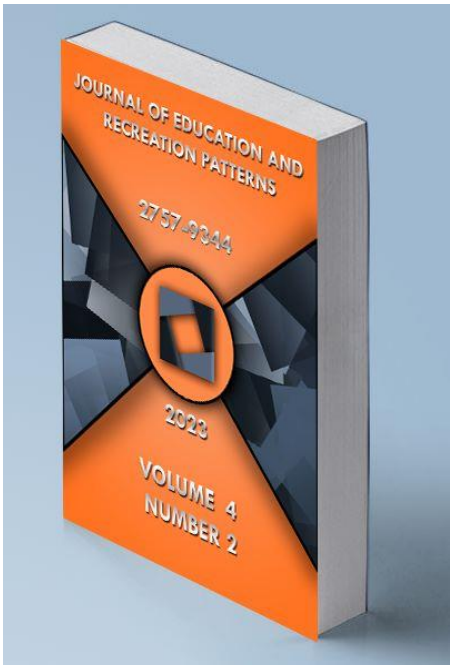
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Digital Leisure Time Tendency Scale: Validity and Reliability Study

Fatih Harun TURHAN[1], Ömer Faruk TUTAR[2]

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[1] Fatih Harun Turhan, Karabük Üniversity, fharunturhan@karabuk.edu.tr, https://orcid.org/0000-0001-5644-6157
[2] Ömer Faruk Tutar, Munzur Üniversity, omerfaruktutar@munzur.edu.tr, https://orcid.org/ 0000-0001-8084-6329

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Digital Leisure Time Tendency Scale: Validity and Reliability Study

Fatih Harun Turhan[1], Ömer Faruk Tutar[2]

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ABSTRACT
This study aims to determine the validity and reliability of the "Digital Leisure Time Tendency Scale (DLTTS)". The DLTTS was applied to a total of 1354 people, 648 women and 706 men. The Key Components Factor Analysis, which was carried out following the direct oblimin conversion of the participants' tendency scores to digital leisure activities in order to test the validity of the factor structure of the DLTTS, supports the 4-factor structure and explains 56.52% of the scale. The DLTTS consists of 4 sub-dimensions and 18 items in total, namely "Communication" (6 items), "Social Interaction" (5 items), "Psychological Tendency" (4), and "Application Usage" (3 items) sub-dimensions. Participants attitudes towards digital leisure activities are evaluated on a 5-point Likert-type scale. The KMO value of the scale was found to be 0.866. Cronbach's Alpha internal consistency coefficient was calculated for four sub-dimensions and the total scale. Accordingly, Communication = .79, Social Interaction = .78, Psychological Tendency: .80, and Application Usage = .65. The total reliability coefficient of the scale is quite reliable (α= .83). In conclusion, the Digital Leisure Time Tendency Scale reveals that it is a valid and reliable scale for assessing the digital leisure time Tendency of individuals over the age of 18.

Keywords: Digital Leisure Time, Reliability, Tendency, Validity

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INTRODUCTION

In the 21st century, digital culture has had a major impact on people's leisure activities, and our daily leisure life is intertwined with social media (Redhead, 2016; Silk et al., 2016). In today's technologically advancing world, effective time management has become increasingly vital and deserves careful consideration from individuals (Sezer & Çelikel, 2021). Recently, media technology has influenced and expanded the dimensions of our life experiences. Among individuals, diversity in the use of social media can be observed for various reasons (Çiftçi & Özavcı, 2023). In particular, the Internet, wireless connectivity, digitalization, interactive web interfaces, and active social media have influenced our leisure activities (Choi & Dattilo, 2017). Research has shown that the use of technology can increase social engagement and reduce social isolation (Chopik, 2016; Czaja et al., 2018).

Digital tools used in digital leisure time; are not limited to the Internet or social media; It represents the many devices or mediums, social networks, and communication applications associated with the method of creating, sharing, and distributing information (Choi &Dattilo, 2017). For example, there is a system that provides access to many social network-based applications, which are Android-based smartphones. For this reason, mobile phones and entertainment (spending time) have become increasingly relevant (Leep, 2014). In the literature, it is observed that individuals use digital networks and platforms for purposes such as spending their leisure time, education, entertainment, socialization, and keeping up with the agenda (Turhan & Canpolat, 2023). Mobile phones are used in almost every leisure time activity and are becoming a daily leisure activity. Moreover, cell phone use can also happen during other free time activities, which can cause a multitasking effect. Research shows that mobile phone use is associated with the results that certain leisure activities can produce; these outcomes include physical fitness, boredom relief, and stress reduction (Lepp, 2014; Leung, 2008). It would not be wrong to say that mobile phones and all vehicles equipped with digital technology have the same effect. In this context, considering that digital tools generate digital leisure activities in daily life, it is thought and aimed that this leisure time evaluated with digital tools should also be evaluated, which is expected to be accepted by you, the readers.

Researchers state that our social worlds (including our leisure time) are becoming more and more digital, and that digitalization will become part of our daily lives (Hine, 2015; Lupton, 2015; Boyd, 2012). Social media and social networks used by individuals in their leisure time are seen as a means of entertainment by individuals and become widespread (Karaş, 2019). Considering the attractiveness of social media today, it can be said that almost most people are trying to prove themselves in the virtual environment with social media and digital tools and to take part in the social class order. In particular, the fact that Generation Z was born into the digital age and grew up in this age is a fact that they have an important place in this interaction (Kapil & Roy, 2014). Social media tools, along with numerous digital applications and platforms, are used by individuals for multiple purposes such as self-fulfillment, building digital social capital, entertainment, leisure, forming friendships, and keeping up with current events. Therefore, understanding to what extent this digital transformation consumes individuals' leisure time is of importance for this study.

Definition and Characteristics of Digital Leisure Time

While the definition of leisure time is not precise, the boundaries between work and leisure time are not always clear. According to Hurd and Anderson (2011), leisure time can be defined as time leisure from obligations, work, and the tasks necessary for existence, such as sleeping and eating. In this period, the methods used by individuals in their time are renewed with the change of time. These days when we have started to blend with technology, the Tendency to technological tools has gained speed in leisure time. For this reason, the definition of leisure time is now evolving towards a digitized definition.

The fact that people can spend time at home, at work, outside at any time by participating in many virtual activities with smart devices without spending too much power, it is seen that electronic applications, which have become a part of their daily lives, have revealed a new form of leisure time evaluation and this new form of leisure time is reflected in the field literature as "digital leisure time" or "digital leisure time" (Akoğlan Kozak & Özkeroğlu, 2018; Güncan, 2021). Nimrod and Adoni (2012) have studied and attempted to conceptualize digital leisure with the aim of expanding and understanding digital leisure activities. By examining digital-leisure time about time, action, and experience, which are fundamental aspects of traditional leisure activities, the authors have argued that all the fundamental aspects of this concept apply to digital-leisure time. The widespread use of digital freelance apps and spaces allows companies and users to take advantage of the data collected during their leisure time experiences (hence, the user is working in their leisure time). Therefore, digital leisure time is spent engaging with digital apps and spaces while relaxed (Schultz & McKeown, 2018).

The Relationship Between Digital Leisure and Digital Literacy

Digital literacy refers to a skill set that individuals need in order to function effectively in digital environments. It not only encompasses the mere ability to use or operate digital devices but also includes cognitive, sociological, and emotional skills (Eshet, 2004). With the proliferation of digital technologies in every aspect of our lives, digital literacy has become an essential skill that young people need to possess. Young people are our future generations, and in a world mediated by digital technologies, digital literacy is crucial for their successful participation in digital environments. As a result, educational institutions are incorporating digital technologies into their curricula to develop digital literacy among young people in formal education settings.

Digital literacy can be taught (Ng, 2012) and developed through school education (Hague, 2010), but it can also evolve through everyday practices. Due to their daily exposure to digital technologies, young people, referred to as the digital generation, have developed a certain degree of digital literacy and naturally engage in digital leisure activities (Oblinger, 2003; Prensky, 2001; Tapscott, 2008).

Casual games are a new generation of video games that are easy and simple to play (Juul, 2009) and can be played using portable technologies such as mobile phones and tablets. With their simplicity and easy accessibility, casual games have become a popular activity among young people. Considering the recent popularity of these games, it can be said that these games have a significant impact on the digitization of leisure time.

As a result of all these reviews, In the literature, numerous scales related to people's attitudes towards leisure time activities involving digital devices have been observed. However, upon reviewing the literature, no scale related to digital leisure time specifically has been encountered. In this context, the aim is to develop a scale to assess adult individuals' tendencies in digital leisure time, using the concept of digital leisure time, which has recently emerged in the literature.

METHOD

Research Design

The aim of the study is to develop a valid and reliable measurement instrument to assess the inclination of adult individuals over the age of 18 to digital leisure time activities instead of physical leisure time activities. In addition, this study was supported by the ethics committee decision dated 19.06.2023 and numbered 2023/05-36.

The research is in the relational screening model, which is one of the general screening models and is descriptive research. The screening model is a type of research in which a

situation that has occurred before or is currently existing is tried to be described as it is (Karasar, 2014). In order to ensure the homogeneous participation of adult individuals in the sample selection, members from various occupational groups were selected using simple random sampling method and the scale was administered. The development of the Digital Leisure Tendency Scale (DLTTS) was carried out with the voluntary participation of +18 (32,5±1.44) individuals in the study. A total of 97 questions were created by taking the opinions of 1 linguist who is an expert in the field of research and 4 experts in the field of regression and sports sciences. Items with similar meanings in the item pool consisting of expert opinions were removed by the researchers and the final item pool consisting of 57 statements was created. In the last stage, the pool consisting of 57 items was sent to 3 different experts again and their opinions were taken, and it was prepared in a 5-point Likert type and presented to the individuals to answer.

Participants

The sample of the study consisted of 648 women and 706 men and a total of 1354 individuals. In the factor analysis, it is recommended that the number of study groups should be five times the number of scale items (Büyüköztürk, 2014). As a result of the data obtained from the individuals, the results of exploratory factor analysis (EFA) and reliability analysis were obtained. Then, the second stage was passed, and the results of confirmatory factor analysis (CFA) were tried to be reached to determine the validity coefficients of the study. In this stage, a total of 647 individuals, including 309 women and 338 men, were reached. When the participation numbers of the study were examined, the numbers recommended in the literature in both the first phase (EFA) and the second phase (CFA) were reached.

Table 1. Descriptive Information About the Research Group

Variable	Groups	N	%
Gender	Female	309	47,8
	Male	338	52,2
	Total	647	100,0
Age	18-22 Ages	129	19,9
	23-27 Ages	155	24,0
	28-32 Ages	169	26,1
	33-37 Ages	127	19,6
	38 and higgest	67	10,4
	Total	647	100,0
Daily Digital Device Usage Duration	0-1 Hours	37	5,7
	1-2 Hours	97	15,0
	2-3 Hours	187	28,9
	3> Hours	326	50,4
	Total	647	100,0
Daily Free Time Duration	0-1 Hours	38	5,9
	1-2 Hours	78	12,1
	2-3 Hours	169	26,1
	3> Hours	362	56,0
	Total	647	100,0

Analysis of Data

In the measurement tool development studies, various sources related to sample size have expressed different sample sizes. Çokluk, Şekercioğlu, and Büyüköztürk (2014), citing Pallant, 2005 and Kline, 1994, reported that reaching 10 times the number of their samples would be sufficient for reliability.

In the analysis of the data in the study, SPSS 24 package program was used for EFA and reliability tests, while IBM Amos 24 package program was used for CFA analysis. In EFA analyses, substances with a factor load of 32 were not accepted. As a result of CFA analyses, it was ensured that the items of the scale were finalized.

FINDINGS

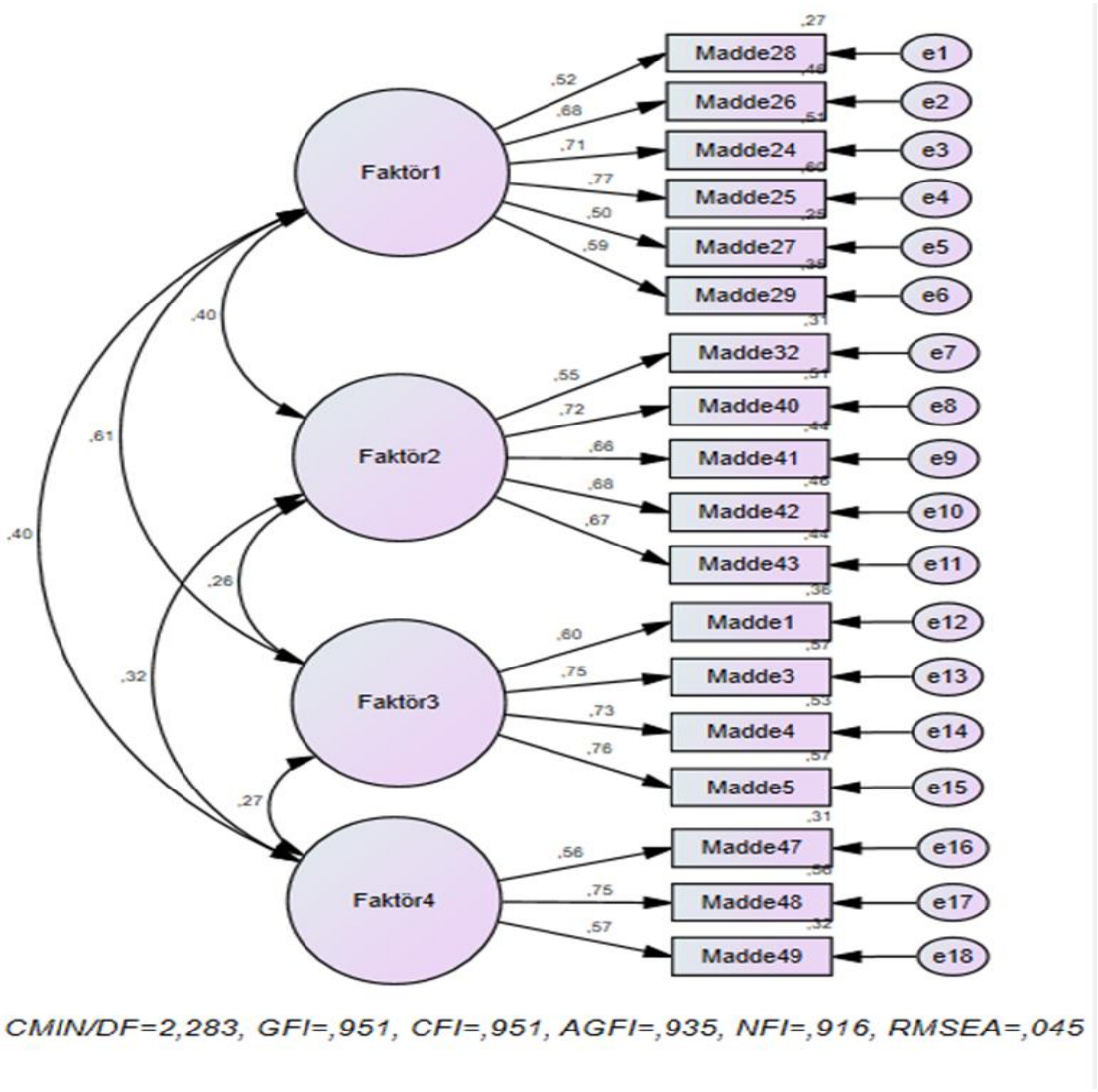
In this section, the research data has been analyzed, presented in tabular form, and interpreted.

Table 2. Digital Leisure Time Tendency Scale (DLTTS) EFA Results

Item No	Items	α	Variance Explained	Factor Loads
Factor1	**Communication**	**,798**	**27,707**	
28	Using digital tools in my leisure time helps me connect with friends and family.			,702
26	I think that using digital tools during my leisure time has a positive effect on my social connections.			,662
24	I think that digital leisure time activities have a positive effect on my social relationships.			,624
25	Using digital tools in my leisure time allows me to socialize.			,511
27	Using digital tools in my leisure time does not disrupt my daily work.			,506
29	I think that digital leisure activities have a positive impact on my physical and mental health.			,469
Factor2	**Social Interaction**	**,789**	**12,767**	
32	I use social media apps in my leisure time.			,690
40	I follow the current sharing of my friends through digital applications in my leisure time.			,682
41	I make sharing through digital applications in my leisure time.			,681
42	I chat with my friends through digital apps in my leisure time.			,621
43	I send interesting videos to my friends that I watch or see on digital apps in my leisure time.			,519
Factor3	**Psychological Tendency**	**,802**	**8,452**	
1	I feel energetic in the leisure time I spend using digital tools.			,733
3	The leisure time I spend with digital tools makes me feel more comfortable.			,689
4	The leisure time I spend with digital tools allows me to relax.			,686
5	The leisure time I spend with digital tools makes me feel happy.			,565
Factor4	**Application Usage**	**,651**	**7,594**	
47	I use one or more news site apps on my digital devices.			,742
48	I use one or more sports news site apps on my digital devices.			,549
49	I use one or more exercise apps on my digital devices.			,505
KMO: ,866 Total Explained Variance: 56,52 General Cronbach's Alpha: ,839				

In the study, the KMO (Kaiser-Meyer Olkin) value was examined to determine whether the answers given by the participants were appropriate or not. As a result of EFA (exploratory factor analysis) conducted in line with the answers given by the participants, the KMO value was determined as .866. Tavşancıl (2010) stated that if the KMO value was above 0.50, the analysis was acceptable. In the EFA analysis, the highest factor load of 1.00 and the lowest 0.32-factor load for factor loads were taken into account by using the Direct Oblimin technique to determine the factor loads of the substances (Tabachnick & Fidell, 2007). In the case of more than one-factor load on the same substance, items with the same factor lower than 0.10 were removed from the analysis (Büyüköztürk, 2011). As a result of the EFA analysis, an acceptable structure consisting of 18 items with 4 factors emerged, taking into account the appropriate factor loads.

Figure 1. DLTTS's Path Diagram



It is seen that the communication sub-dimension of DLTTS consists of items 28, 26, 24, 25, 27, and 29 and the factor loads vary between .702 and .469, the Cronbach's alpha value is .798 and the percentage of variance described is 27.707. It was determined that the social interaction sub-dimension consisted of items 32, 40, 41, 42, and 43, and the factor loads ranged from .690 to .519, the value of Cronbach's alpha was .789 and the percentage of variance described was 12.767. It is seen that the digital psychology sub-dimension consists of items 1, 3, 4, and 5 and the factor loads vary between .733 and .565, the value of Cronbach's Alpha is .802 and the percentage of variance described is 8.452. Finally, it was determined that the

application usage sub-dimension, which is the 4th factor, consisted of items 47, 48, and 49 and the factor loads ranged from .742 to .505, Cronbach's Alpha value was .651 and the announced variance percentage was 7.594.

The total explainable variance of DLTTS is 56.52 and the overall Cronbach's Alpha is .839. Following the formation of factor loads and factor structures determined by EFA analysis, the conformity structure of SHTÖ was tested by performing confirmatory factor analysis (CFA) with existing substance structures using IBM Amos 24 program (Hinkin, 1998). First of all, the structural diagram of the scale is plotted graphically in the IBM Amos program.

Table 3. Table of Compliance Indices by CFA

Adjusted Compliance Indexes	Excellent Compliance Values	Acceptable Compliance Values
X^2/sd	$0 \leq X^2/sd \leq 3$	$3 \leq X^2/sd \leq 5$
GFI	$.95 \leq GFI \leq 1.00$	$.90 \leq GFI \leq 95$
AGFI	$.90 \leq AGFI \leq 1.00$	$.85 \leq AGFI \leq .90$
CFI	$.97 \leq CFI \leq 1.00$	$.95 \leq CFI \leq .97$
NFI	$.95 \leq NFI \leq 1.00$	$.90 \leq NFI \leq .95$
RMSEA	$.00 \leq RMSEA \leq .05$	$.05 \leq RMSEA \leq .08$

Since the CFA analysis showed that the scale had acceptable goodness of fit indices, no covariance was required whatsoever. When the literature was examined, researchers revealed many compliance indices on model compliance. The compliance index table determined by Schumacker and Lomax (2004) is indicated in Table 3.

Table 4. CFA-Related Compliance Goodness Indices of the Digital Leisure Time Tendency Scale

Compliance Index	Value	Compliance Status
χ2/sd	2,283	Perfect Compliance
RMSEA	,045	Perfect Compliance
GFI	,951	Perfect Compliance
AGFI	,935	Perfect Compliance
NFI	,916	Acceptable Compliance
CFI	,951	Acceptable Compliance

When the good compliance indices of the digital leisure time Tendency scale related to CFA were examined, it was found that χ2/sd, RMSEA, GFI, and AGFI indices were in perfect compliance, and NFI and CFI indices were in acceptable compliance. These ratios include the values accepted in the literature (Schumacker and Lomax, 2004).

Table 5. DLTTS Factor and Substance Distribution

Item No	Items
Factor1	**Communication**
1	Using digital tools in my leisure time helps me connect with friends and family.
2	I think that using digital tools in my leisure time has a positive impact on my social connections.
3	The leisure time I spend with digital tools makes me feel more comfortable.
4	The leisure time I spend with digital tools allows me to relax.
5	The leisure time I spend with digital tools makes me feel happy.
6	I think that digital leisure activities have a positive impact on my physical and mental health.

Factor2	Social Interaction
7	I use social media apps in my leisure time.
8	I follow the current sharing of my friends through digital applications in my leisure time.
9	I make sharing through digital applications In my leisure time.
10	I chat with my friends through digital apps in my leisure time.
11	I send interesting videos to my friends that I watch or see on digital apps in my leisure time.
Factor3	**Psychological Tendency**
12	I feel energetic in the leisure time I spend using digital tools.
13	The leisure time I spend with digital tools makes me feel more comfortable.
14	The leisure time I spend with digital tools allows me to relax.
15	The leisure time I spend with digital tools makes me feel happy.
Factor4	**Application Usage**
16	I use one or more news site apps on my digital devices.
17	I use one or more sports news site apps on my digital devices.
18	I use one or more exercise apps on my digital devices.

Table 5 shows the final available version of the DLTTS child dimensions and item numbers. When the final version of the scale is examined, a structure consisting of 4 sub-dimensions and 18 items with proven validity and reliability emerges. There is no inverse substance on the scale.

DISCUSSION

When applying the scale item pool, the definition of digital leisure time is made, and "digital leisure time is ..... I know that it means" was added and 89% of the participants selected the "agree" and "strongly agree" options to this statement, indicating that the participants knowledgeably participated in the study.

While the number of items included in the factor analysis was 57, expressions with item factor loads below 30 were removed from the item pool. Removal of items with low factor loads from the item pool is a method used and recommended in other scale development studies in the literature (Dağ, 2002; Kalaycı, 2005). The suitability of the sample to be examined for factor analysis can be determined by KMO and Barlett's test. In our data set, the KMO value was found to be .866, and values between 0.80-0.90 mean that it is good for the sample size (Şencan, 2005).

When the findings obtained as a result of the study were examined, as a result of the basic components factor analysis to determine the structural validity of the scale, the 18-item scale explained by 4 factors with 56.2% was reached. Principal Components Analysis (PCA) is an analysis used to reduce the size of high-dimensional data stacks (Jolliffe, 2002). In addition, it is considered sufficient that the variance described in the studies conducted on the axis of social sciences is between 40% and 60% (Tavşancıl, 2014). Eigenvalue numbers with values greater than 1 were taken into account to explain the suitability of the scale to the multidimensional structure. It was seen that there were 4 factors with a value greater than 1 in total. This situation reveals the 4-factor structure. These emerging factors were named "Communication" (6 items), "Social Interaction" (5 items), "Psychological Tendency" (4), and "Application Usage" (3 items) sub-dimensions for the semantic content of the items collected under the factors.

When the findings obtained with CFA were examined, the compliance index values of the scales according to the compliance values: $\chi 2/sd$ ratio was calculated as 2.283. A ratio of

3≤ indicates perfect compliance (Kline, 2005). RMSEA=0.45. These values between 0.05 and 0.10 correspond to the perfect compliance criterion (Schermelleh, Moosbrugger, 2003). GFI=0.951, CFI=0.951, AGFI=0.935, NFI=.916, and an index above 0.95 corresponds to perfect compliance (Tabachnick & Fidell, 2001).

Cronbach Alpha analysis method was used to test the reliability level of the scale. The results of the analysis conducted to test the reliability of the scale show that the coefficient values vary between .65 and .80. According to Kayış (2006), reliability in Cronbach's Alpha (α) coefficient at scales of .60 and above is considered reliable. According to Devellis (2003), it can be stated that the scale data are consistent provided that the acceptable value is above 0.70. The fact that the total internal consistency coefficient of the scale is high (.83) shows that the items on the scale consist of items that are consistent with each other and aim to evaluate the elements of the same property (Tezbaşaran, 1997).

Conclusion

It is seen that the communication sub-dimension of the digital leisure time Tendency scale consists of items 1, 2, 3, 4, 5, and 6, the social interaction sub-dimension consists of items 7, 8, 9, 10, and 11, the digital psychology sub-dimension consists of items 12, 13, 14 and 15 and the application usage sub-dimension consists of items 16, 17 and 18. In the scale study, a 5-degree Likert type was used. In the Likert type, the lowest score is "strongly disagree" and the highest score is "strongly agree". As a rating scale for the evaluation of arithmetic means of the Likert type scale; Using the formula "Gap Width = Array Width/Number of Groups", point ranges were determined as 4/5 = 0.80 (Tekin, 1996). The obtained data reveal that the "Digital Leisure Time Tendency" scale is valid for assessing adult digital leisure time Tendencys over 18 years of age. The low scores to be taken from the scale indicate that the digital leisure time Tendency level is low, and the high scores indicate that the digital leisure time Tendency levels are high.

The Digital Leisure Time Tendency Scale is considered a valuable tool for academics, educators, and psychologists working in the field of science to better understand the effects of digital technologies on our daily lives and to manage these effects. The scale is also thought to assist in conducting more in-depth research and helping society adapt to the process of digitization.

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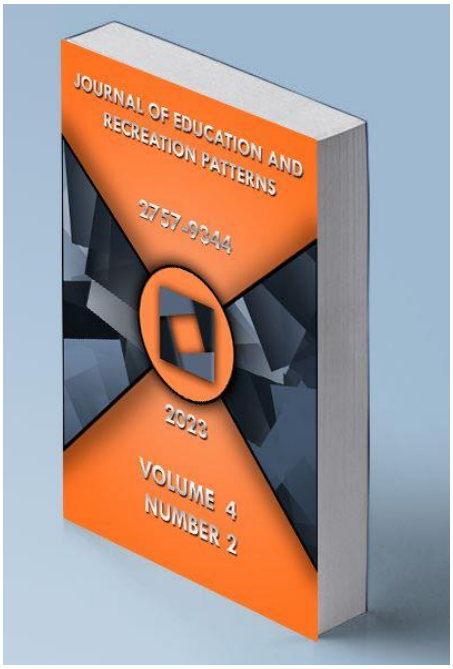
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A Case Study Investigating the Impact of Music Listening on Vocabulary Development During Foreign Language Learning

Şeyda SARI YILDIRIM [1], Erdal TAŞPINAR [2]

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[1] Şeyda Sari Yıldırım, Necmettin Erbakan University, seydasari@hotmail.co.uk,
https:// orcid.org/ 0000-0001-9290-9809
[2] Erdal Taşpınar, Necmettin Erbakan University, erdaltaschpinar@hotmail.com,
https://orcid.org/0000-0001-8557-1256

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A Case Study Investigating the Impact of Music Listening on Vocabulary Development During Foreign Language Learning

Şeyda Sarı Yıldırım [1], Erdal Taşpınar [2]

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ABSTRACT
This study was conducted to find out the influence of music listening during study sessions on the process of vocabulary learning. The primary objective of this study was to determine the impact of listening to variety of music whilst studying the acquisition of new vocabulary, with a focus on identifying whether this practice has a positive or negative influence on the learning process. The data was collected from a sample of 20 elementary school pupils, with ages ranging from 10 to 11 years old who are studying in a public school. The students who have been chosen were engaged in the acquisition of English as a second language from their enrollment in the second grade and have been actively participating in English language instruction within the school curriculum for a duration of three years. The findings of the study indicate that individuals who engaged in vocabulary learning using flashcards exhibited varying levels of performance. Specifically, participants who were exposed to English vocabulary in conjunction with music achieved an average score of 77.6 points, whilst those who studied language in a serene environment attained an average score of 85.8 points. The results of this study strongly indicate that those who were exposed to a peaceful environment throughout their study sessions demonstrated superior performance

Keywords: Learning Types, Listening Skills, Multiple Intelligences, Studying with Music

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INTRODUCTION

The spread of communication skills in the 21st century is experiencing a state of reproduction rather than being an option to keep up with the complexity imposed by time, to cope with the many problems in social life and to be nourished by intercultural communication. In this regard, today's foreign language teaching continues to develop the ability to communicate in its activities, from transferring soft information (Deniz & Çekici, 2023).

The prevailing consensus suggests that pupils should ideally be situated in a tranquil setting when engaging in academic pursuits. Also in these settings as Ibrahim and Aydoğmuş (2023) stated the importance of the term self-efficacy comes forward and applies to individuals' belief in their ability to organize and carry out the required activities to achieve a particular goal or objective.

Both educators and parents have generally upheld the belief that children need to engage in their studies in a noise-free environment. In the library, there exists a well-established regulation mandating silence, which is prominently communicated by the presence of pervasive signage emphasizing the need for quietude. Is it truly feasible and crucial to maintain a state of silence while engaging in the act of studying? According to Patton et al. (1983), a conventional study environment for students typically consists of multiple rooms, including one with a television, one with a stereo or radio, one with the presence of other individuals, and one that is quiet. Interestingly, a significant proportion of learners express a preference for studying in noisy environments, such as while listening to the radio or stereo, or while watching television.

The perception of sound is a fundamental human feeling crucial for survival, and music, which can be described as a logically structured arrangement of sound, significantly impacts our behavior and emotions (Wright, 2014). Psychologist Frances H. Rausche has found that there is an improvement in students' performance on IQ tests following exposure to music. Additionally, the act of listening to music has been observed to have a beneficial impact on the execution of spatial tasks (Honing, 2014). The activation of neuronal systems in the brain related to pleasure and emotions is observed while engaging with music, similar to the response of the brain to stimuli such as food and addictive substances. Consequently, music has the potential to exert a significant positive influence on both our mental and physical well-being (Blood, 2001).

The primary auditory cortex (AI) is activated by the perception of auditory stimuli, regardless of their nature. When individuals perceive auditory stimuli such as speech and music, there is activation observed in brain regions beyond the auditory cortex. Moreover, during the initial stages of cortical processing, the distribution of activity in response to music, speech, and other complex sounds appears to be rather balanced between the two hemispheres (Kluender, 2006). According to Anderson and Fuller (2010), neuropsychological research has revealed that individuals engage in independent analysis of both lyrics and melodies when listening to music.

Listening consists of auditory discrimination, aural grammar, choosing necessary information, remembering it, and connecting it to the process between sound and form of meaning. Rost (2009) said that listening is an active mental ability. It helps us to understand the world around us and is one of the necessary parts in making successful communication. Sitompul (2013) stated that listening includes listening for thoughts, feelings, and intentions and this needs active involvement, effort, and practice.

Wood (2016) defines listening comprehension as "an active and conscious process in which the listener constructs meaning by using cues from contextual information and from existing knowledge while relying upon multiple strategic resources to fulfil the task requirements". Vandergrift (2007) defines listening as "a complex, active process in which the

listener must discriminate between sounds, understand vocabulary and grammatical structures, interpret stress and intonation, retain what was gathered in all of the above, and interpret it within the immediate as well as the larger sociocultural context of the utterance".

According to Wright (2014), the global expenditure on commercial music amounts to over $40 billion annually, surpassing the combined economic production of 96 countries. Furthermore, the majority of individuals in developed nations engage with music daily, whether consciously or subconsciously. There exists a variation in the level of intensity associated with different forms of listening. The subject matter is categorized into three distinct groups. There exist three distinct types of listening: active listening, passive listening, and selective listening. Active hearing requires intentional and conscious efforts, while passive listening refers to a state of indifferent listening. Additionally, another form of listening is selective listening, which involves the act of listening in a discerning and selected manner (Ur, 2007).

To explain it in detail, Littlewood (1981) stated that active listening is a form of auditory communication in which listeners actively listen to the speaker and respond. It is not always that when two people are having a conversation, that each of them is listening to one another. Partially listening and partially thinking are common distractions that occur. In personal and professional interactions, active listening is one of the essential, must-have skills. It can influence the quality of work and the quality of relationships with others. To improve the active listening level, attention must be given to the other person. To improve listening skills or active listening, the other person must be able to listen to the speaker. Active listening does not mean paying attention to what the speaker is talking about, but also continuously responding in verbal and non-verbal ways. This type of listening is widely used in many situations such as community organization, advocacy, tutoring, counselling, etc.

Passive listening is where a person is listening to the speaker, however, only giving him partial attention, often distracted by something in mind or immediate environment. The person sits like a statue and does not respond to the speaker in any way. A common practice of passive listening is daydreaming while someone is talking or listening to music. The interaction may often require direct answers from listeners; however, passive listeners have eroded concentration and give a minimal verbal response. Passive listening occurs when the listener has a low level of self-motivation, little commitment and avoids the responsibility of learning and solving problems. In passive listening, the listener accepts and retains information as it is, without the intention to question or challenge the idea of improvement. It disconnects from others or shows minimal interest. In so doing the listener creates the complications for himself because at the crucial moments forgetting would be inevitable. In general, passive listening means that the listener is separated from the speaker in a way that there is no meeting of minds (Lindslay & Knight, 2006; Littlewood, 1981). Lastly, Selective listening is when you focus your attention on some specific information. It involves consciously or unconsciously choosing to listen to what is relevant to you and ignore what isn't. It is a skill that anyone can develop and improve.

Individuals possess varying motivations for engaging in the act of hearing. Some individuals derive pleasure from listening, while others seek to acquire knowledge. Specifically in the context of music, individuals may listen for the purpose of experiencing enjoyment. It is important to note that engaging in listening just for enjoyment does not inherently require the individual to retain or respond to the communicated information (Wood, 2016). According to Muslimah and Apriani (n.d.), a significant proportion of students exhibit a preference for incorporating music into their learning routine. This practice has been found to contribute to a heightened state of tranquillity and enhanced focus during the process of studying.

At times, individuals may experience a sense of limited advancement in their learning endeavours, seeing a lack of retention of crucial information despite diligent attempts. This

circumstance may potentially be attributed to the selection of an ineffective study approach (Firth, 2018). Insufficient understanding of effective study techniques or the presence of inadequate study habits is identified as a significant contributing factor to students' subpar academic achievements. The cultivation of effective study habits is a developmental process that commences at early stages of life and exerts a lasting impact on an individual's academic performance (Türkcan & Ocal, 2003). Developing effective study habits is considered to be a fundamental suggestion for successful academic performance. Consequently, the cultivation of effective study habits is contingent upon the student's self-awareness and the support provided by their educators and parents (Çulfa & Kaymak, 2019).

According to Patron et al. (1986), a significant proportion of learners exhibit a preference for studying in the presence of auditory stimuli such as television or radio. Furthermore, it is important to note that learners do not select their study environment randomly or without careful consideration. Students engage in purposeful decision-making regarding their learning settings, wherein the choice to use music as an accompaniment during study sessions may hold varying degrees of significance depending on individual preferences and inclinations. According to Roballey et al. (1985), previous research has identified that different types of music can elicit diverse impacts on behavior, emotions, and physiological responses. In his research, Roballey discovered that music had the potential to impact the rate at which individuals consume their meals. The act of engaging in the auditory experience of relaxing music prior to undertaking a job that induces stress has been observed to elicit diverse outcomes in relation to the biological stress response, as demonstrated by Thoma et al. (2013). According to Moradipanah et al. (2009), the act of listening to music prior to undergoing a large medical procedure has been found to have a substantial impact on reducing stress levels, as well as alleviating symptoms of despair and anxiety in patients. The act of listening to music has been shown to have a significant impact on producing favorable changes in mood and improving the perception of design during professional tasks. Additionally, the influence of music on work performance has been seen (Lesiuk, 2005). Moreover, the influence of music on heart rate and heart rate variability has been observed (Trappe, 2012).

As previously mentioned, the influence of music listening in various sectors is more apparent. However, while analyzing research about the impact of music on studying, it becomes evident that the findings are inconclusive and yield varying results. In their study, Anderson and Fuller (2010) sought to investigate the influence of lyrical music on the reading comprehension abilities of adolescents. The experiment was conducted under two distinct conditions: one condition involved the absence of any background music, while the other condition involved the presence of music. The results of the analysis of variance indicated a statistically significant decrease in performance when individuals were exposed to music.

The study conducted by Dodge and Mensink (2014) examined the correlation between music and memory. The study revealed that university students exhibit higher levels of recall when exposed to either pop music or quiet, as opposed to classical music. In general, the study found no statistically significant distinction between classical music, pop music, and silence. However, a minor level of significance was detected when comparing the presence of music to its absence. The study conducted by Vitasmoro and Jatmiko (2018) examined the impact of music listening on the vocabulary competency of students. Their findings indicated that the act of listening to music had an influence on the mastery of vocabulary among learners.

Cheah et al. (2022) endeavored to undertake a systematic study of prior research in order to comprehend the impact of background music on cognitive task performance. The present study analyzed 95 scholarly articles, encompassing a comprehensive set of 154 trials, which were primarily centered around several cognitive tasks. The results suggest that there remain numerous areas that have not been comprehensively examined in relation to the influence of

background music on cognitive task performance. Hence, additional investigation is necessary to acquire a thorough comprehension of this subject matter.

The existing body of research indicates that a comprehensive understanding of the effects of music on studying remains elusive. The majority of the studies involved participants who were university and high school students. It is probable that these individuals already possessed the practice of listening to music while studying or exhibited a preference for studying without music. Given the brain's inherent ability to adapt, it is conceivable that individuals may have developed a habituation to listen to music while engaging in studying activities over an extended period. This habitual practice could perhaps account for the observed irregularities in academic performance thus far. A common goal of world language teachers everywhere is to have their students use the language in their real lives and to appreciate and value cultures different from their own. Music can help to achieve these goals and can contribute to a positive language learning experience for all.

Several factors have been stated to influence (language) learning, such as motivation (Gardner & Lambert, 1972), anxiety (Horwitz, Horwitz & Cope, 1986), personality (Gardner, 1983), etc. The use of music can have an impact on many of these factors, which will in turn affect foreign language acquisition. That is why, this study encompasses a group of participants consisting of students aged 10-11 years, who are currently in the advanced phase of late childhood. Within this particular age bracket, it is plausible to consider that these students are situated at the first stages of their educational trajectory and may not have fully developed their study routines. Given that the study settings of individuals in this age group are established with the assistance of their parents and teachers, this study posits that the influence of study environments on learning may be more constrained within this age range. Consequently, it is anticipated that more dependable outcomes can be derived from this particular cohort. Therefore, a study has been undertaken on youngsters aged 10-11 years.

The objective of this study is to assess the influence of music listening during study sessions on the process of vocabulary learning. The primary objective of this study is to determine the impact of listening to variety of music whilst studying the acquisition of new vocabulary, with a focus on identifying whether this practice has a positive or negative influence on the learning process.

The following research issues will be investigated in this study.

Research Questions

1) Does listening to music while studying improve or make worse students' foreign language learning (vocabulary acquisition)?

2) Is there a significant difference in vocabulary acquisition between studying silently and studying while listening to music?

METHOD

Research Design

An experimental research design was employed in this study. The data from the pretest and post-test were assessed using a qualitative approach-based comparison analysis technique, and the resulting outcomes were analyzed via SPSS Programme. The test results were computed using a 100-point scale.

Participants

The data was collected from a sample of 20 elementary school pupils, with ages ranging from 10 to 11 years old. The participants were divided into two groups, namely the experimental group and the control group, using a random assignment method. The gender distribution of pupils was balanced in both groups, with an equal number of males and females. The experimental group included seven male students and three female pupils. The control group consisted of 7 male students and 3 female pupils. The selection of participants was conducted among pupils enrolled in a public school situated in Konya, a province situated in the middle region of Anatolia, Türkiye. The students who have been chosen were engaged in the acquisition of English as a second language from their enrollment in the second grade and have been actively participating in English language instruction within the school curriculum for a duration of three years.

The selection of all participants was conducted on a voluntary basis, and the parents of the participants provided informed consent by completing consent forms. The informed consent form furnished essential details on the study's methodology and explicitly indicated that participants had the option to discontinue their involvement in the study at any point. Participants were moreover notified that they were welcome to pose inquiries to the researchers at any given moment.

Data Collection Tools & Process

A study was conducted, employing an experimental research design, with a sample of 20 pupils within the age range of 10 to 11 years. Initially, a pre-test was administered in order to assess the pupils' existing knowledge. Subsequently, the learning phase was initiated. During the instructional period, the vocabulary items extracted from the English textbook for fifth graders were compiled into flashcards and afterward handed to each individual student.

The study participants employed flashcards as a means of acquiring vocabulary through the utilization of the spaced repetition method. Sitompul (2013) conducted a study which revealed that the utilization of flashcards has been associated with improved memorization of words, heightened student enthusiasm to acquire English language skills, and enhanced comprehension of vocabulary. According to Adrianti and Marlina (2022), the utilization of spaced repetition, a well-established memory technique, will be implemented to facilitate the review and repetition of novel phrases until a sufficient level of knowledge is attained.

The participants included in the study were allocated into two distinct categories: the control group and the experimental group. The individuals assigned to the control group were provided with instructions to engage in the process of studying the words presented on the flashcards within a tranquil setting. The duration of the learning period was 40 minutes for both groups. Following the instructional phase, a post-test was administered to the participants. Vocabulary matching tests were utilized as both a pre-test and a post-test.

The individuals comprising the experimental group were provided with instructions to commence the process of studying the vocabulary items presented on the flashcards, while concurrently being exposed to Turkish background music. In order to achieve equitable auditory access for all students, the music was transmitted over a pair of computer-connected speakers. The music's volume was maintained at a modest level in order to avoid causing disruption to the kids. During the study session, a selection of 10 Turkish songs was performed for approximately 40 minutes, with music playing in the background. The selected music genres encompass Turkish hip-hop, rock, pop, and rap. The music selection was determined by the participants' preferences for the most widely recognized songs in Türkiye.

Table 1. Music Genres (This table shows some characteristics of the music genres used in the study.)

Songs	Music Genres	Duration	Language
1	Rap	2.18	Turkish
2	Pop	2.54	Turkish
3	Pop	3.13	Turkish
4	Rap	3.06	Turkish
5	Pop	2.48	Turkish
6	Rap	3.24	Turkish
7	Rap	4.00	Turkish
8	Pop	3.07	Turkish
9	Rap	2.46	Turkish
10	Pop	3.10	Turkish

According to table 1 it is seen that two (2) music genres are played to the students. One of them is pop the other one is rap.

Analysis of Data

The data from the pretest and post-test were assessed using a qualitative approach-based comparison analysis technique, and the resulting outcomes were analyzed via SPSS Programme. The test results were computed using a 100-point scale.

Table 2. Normality Test Results

		Mean	Sd.	Min-Max	Skewness	Std.Er.	Kurtosis	Std. Er.
Silent Study	**Pre-Test**	46,2556	13,876	23,30-69,90	,296	,717	,378	1,400
	Post-Test	85,8778	14,997	56,60-100,00	-1,190		,558	
Study with Music	**Pre-Test**	40,9600	16,344	20,00-70,00	,430		-,831	
	Post-Test	77,6400	22,456	36,60-100,00	-,438		-,823	

When the Skewness and Kurtosis values of the scales are examined, it is concluded that these values are between -1,500 and +1,500 values. The fact that these values are in the range of -1,500 to +1,500 explains the normal distribution of the scales (Tabachnick and Fidell, 2013).

FINDINGS

In this section, the research data has been analyzed, presented in tabular form, and interpreted.

Table 3. Study Silently (This table includes participants who did not listen to music while studying and learning vocabulary in a quiet environment)

Participants	Pre-Test	Post-Test	Difference
1	63,3	86,6	+23,3
2	23,3	56,6	+33,3
3	46,6	96,6	+50
4	69,9	100	+30,1
5	43,3	100	+56,7
6	36,6	86,6	+50
7	43,3	66,6	+23,3
8	50,0	86,6	+36,6
9	40,0	93,3	+53,3
10	*	*	*
Average	**46,2**	**85,8**	**+39,6**

Table 4. Study With Music (This table includes participants who listened to music while studying and learning vocabulary)

Participants	Pre-Test	Post-Test	Difference
1	20,0	60,0	+40
2	56,6	96,6	+40
3	36,6	76,6	+40
4	36,6	70,0	+33,4
5	33,3	53,3	+20
6	60,0	100	+40
7	43,3	83,3	+40
8	70,0	100	+30
9	26,6	36,6	+10
10	26,6	100	+73,4
Average	**40,9**	**77,6**	**+36,6**

The participants involved in the acquisition of vocabulary silently are referred to as the control group, whereas the participants engaged in vocabulary studying while listening to music are referred to as the experimental group. During the pre-test, vocabulary studying, and post-test phases, it was observed that one male student from the control group did not adapt to the application. It was evident that his pre-test and post-test results were highly insufficient, indicating a lack of progress in the learning process. Therefore, the results of this participant were not included in the evaluation.

Prior to commencing vocabulary studying, a pre-test was administered to participants in both the control and experimental groups. The results of the pre-test indicated that both groups had similar levels of prior knowledge. The average score for the control group in the pre-test was 46,2 points while the experimental group achieved an average score of 40,9 points in the pre-test.

After the completion of the vocabulary study using flashcards, the pre-test questions that were given to the children were then delivered again as post-test questions. Based on the findings from the post-test, it was observed that the control group exhibited a significant rise of +39.6 points, resulting in a final score of 85.8 points. In comparison, the experimental group shown a lesser gain of +36.6 points, leading to a final score of 77.6 points.

Table 5. Study Silently Female Participant (This table includes female participants who did not listen to music while studying and learning vocabulary in a quiet environment)

Participants	Pre-Test	Post-Test	Difference
1	63,3	86,6	+23,3
2	46,6	96,6	+50
3	69,9	100	+30,1
Total	**59,9**	**94,4**	**+34,5**

Table 6. Study With Music-Female Participant (This table includes female participants who listened to music while studying and learning vocabulary in a quiet environment)

Participants	Pre-Test	Post-Test	Difference
1	60,0	100	+40
2	43,3	83,3	+40
3	70,0	100	+30
Total	**57,7**	**94,4**	**+36,7**

The pre-test and post-test outcomes were computed individually for male and female students. In the experimental group, the pre-test scores of female students were observed to be 59.9 points, as indicated in Table 4. Conversely, in the control group, the pre-test scores of female students were recorded as 57.7 points, as presented in Table 5. In the experimental group, the post-test scores of female students were recorded as 94.4 points, with an observed rise of +36.7 points. Similarly, in the control group, female students exhibited post-test scores of 94.4 points, with a corresponding increase of +34.5 points.

Table 7. Study Silently Male Participant (This table includes male participants who did not listen to music while studying and learning vocabulary in a quiet environment)

Participants	Pre-Test	Post-Test	Difference
1	23,3	56,6	+33,3
2	43,3	100	+56,7
3	36,6	86,6	+50
4	43,3	66,6	+23,3
5	50,0	86,6	+36,6
6	40,0	93,3	+53,3
7	*	*	*
Total	**39,4**	**81,6**	**42,20**

Table 8. Study With Music-Male Participant (This table includes male participants who did not listen to music while studying and learning vocabulary in a quiet environment)

Participants	Pre-Test	Post-Test	Difference
1	20,0	60,0	+40
2	56,6	96,6	+40
3	36,6	76,6	+40
4	36,6	70,0	+33,4
5	33,3	53,3	+20
6	26,6	36,6	+10
7	26,6	100	+73,4
Total	**33,7**	**70,4**	**+36,7**

The pre-test scores for male students in the control group were observed to be 39.4 points, as indicated in Table 6. Conversely, the pre-test scores for male students in the experimental group were recorded as 33.7 points, as shown in Table 7. In the experimental

group, the post-test scores of male students were recorded as 70.4 points, with an observed rise of +36.7 points. Similarly, male students in the control group exhibited post-test scores of 81.6 points, with an increase of +42.20 points.

Table 9. Paired Sample T Test Results

Study Type		N	Mean	Sd.	t	P
Silent Study	**Pre-Test**	9	46,2556	13,87670	9,094	,000
	Post-Test	9	85,8778	14,99715		
Study with Music	**Pre-Test**	10	40,9600	16,34477	7,032	,000
	Post-Test	10	77,6400	22,45678		

As a result of the Dependent T-Test, it is concluded that there is a significant difference ($p \leq 0.050$) between the pre-test and the post-test. Upon analysing the mean scores, it becomes evident that the post-test scores of the students exhibit an increase in both the silent working environment and the musical working environment, as compared to their respective pre-test scores. In this particular instance, it can be posited that the educational approach employed with the pupils yielded favourable outcomes using both methodologies. The statistical test findings also indicated that learning with music does not provide an impediment for students who wish to study vocabulary in foreign language.

Table 10. Group Statistics of Pre-Tests in Each Environment

	Study Type	N	Mean	Sd.	Std. Error
Pre-Test	Silent Study	10	46,2556	13,87670	4,62557
	Study with Music	10	40,9600	16,34477	5,16867

The pretest mean scores of the control and experimental groups were found to be 46.2556 and 40.9600, respectively. According to the data presented in the table, the average pre-test score of students studying in a silent setting is higher than the average pre-test score of students studying with music.

Table 11. Independent Samples Test Result of Pre-Test Results

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pre-Test	**Equal variances assumed**	,655	,430	,757	17	,460	5,29556	6,99918	-9,47143	20,06254
	Equal variances not assumed			,763	16,954	,456	5,29556	6,93621	-9,34157	19,93268

As a result of the independent sample t-test, although the average scores of the students working in a quiet environment were high, no statistical difference was found between these two groups ($t=.757$, $p>.05$). This supports that the control and experimental group pretest mean scores are not statistically different from each other. This shows that the two groups are in similar conditions.

Table 12. Group Statistics of Post-Tests in Each Environment

	Study Type	N	Mean	Sd.	Std. Error Mean
Post-Test	Silent Study	10	39,6222	13,07065	4,35688
	Study with Music	10	36,6800	16,49544	5,21632

The pretest mean scores of the control and experimental groups were found to be 39,6222 and 36,6800, respectively. The high pretest results of the control group were also reflected in the posttest results.

Table 13. Independent Samples Test of Post-Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Post-Test	Equal variances assumed	,033	,858	,427	17	,674	2,94222	6,88358	-11,58086	17,46530
	Equal variances not assumed			,433	16,761	,671	2,94222	6,79650	-11,41275	17,29719

The independent sample t-test yielded no statistically significant difference between the two groups (t=.427, p>.05). This result provides evidence that there is no statistically significant difference between the means of the pretest-posttest differences in the control and experimental groups.

DISCUSSION

The objective of this study was to examine the impact of music listening on the acquisition of English vocabulary. The study focused on young participants aged 10-11 years old who had not yet developed a consistent habit of either listening to or not listening to music while studying, as it is theorised that the ability to effectively listen to music while studying can be cultivated over time.

An additional aim of the research was to investigate the potential impact of listening to music whilst studying on students' ability to employ more effective study techniques. Based on the available evidence, it can be inferred that the inclusion of music during studying does not have a detrimental impact on the process of vocabulary acquisition among students.

The study employed an experimental research design, using a sample size of 20 students who were divided into two distinct groups: an experimental group and a control group. The control group engaged in the study of English vocabulary in a serene atmosphere, whereas the experimental group conducted their vocabulary study while concurrently listening to music. Based on the findings from the pre-test, it was seen that the control group participants possessed comparable levels of prior knowledge, scoring an average of 46.2 points, whereas the students in the experimental group scored an average of 40.9 points.

The findings of the study indicate that individuals who engaged in vocabulary learning using flash-cards exhibited varying levels of performance. Specifically, participants who were exposed to English vocabulary in conjunction with music achieved an average score of 77.6 points, whilst those who studied language in a serene environment attained an average score of 85.8 points. The results of this study strongly indicate that those who were exposed to a peaceful environment throughout their study sessions demonstrated superior performance. Based on the

pretest results of the control groups and the observed substantial difference in the pretest and posttest results of both groups, it can be inferred that the act of studying while listening to music does not have a detrimental impact on the learning of English vocabulary. Dosseville et al. (2012) conducted a study examining the impact of music on learning. The findings of this study align with the present research, as the results indicate that the experimental group, which was exposed to music, achieved significantly higher scores on the multiple-choice questionnaire compared to the control group. In a study conducted by Sarikaya (2019), the impact of music-assisted reading on the comprehension abilities of Turkish university students enrolled in the Turkish Language Teaching programme was examined. Based on the findings of the study, it was concluded that there was no statistically significant impact of music on pupils' understanding abilities. Based on the findings of the interview, it was concluded that the impact of music on comprehension abilities did not exhibit any detrimental effects in various directions.

While the findings section does not explicitly state it, the data collected from the survey was analysed separately for male and female students, yielding intriguing results. The study revealed that female participants who acquired English vocabulary in a noise-free setting achieved an average score of 94.4, but female participants who acquired vocabulary while concurrently listening to music had an average score of 94.4. Based on the findings, it was observed that the act of listening to music whilst studying did not have any discernible impact on female participants. During the investigation, it was found that female participants who engaged in studying while concurrently listening to music had the ability to maintain focus on their academic tasks, despite the presence of background music.

Conclusion

To conclude Research journeys, no matter their scope or domain, eventually lead to a moment of average score of 70.4, while their counterparts who studied language in a calm setting had an average score of 81.6. The results of this study indicate that male participants who were exposed to a calm environment demonstrated superior performance. Based on the analysis of the provided data, it was concluded that the act of listening to music while engaging in studying activities evidently had an adverse impact on the male participants. The study conducted by Etaugh and Michals (1975) aimed to investigate the impact of music on reading comprehension. The findings of this study revealed that female participants exhibited lower performance in the presence of music compared to the absence of music. In both instances, the performance of males exhibited similarity.

The findings of this study indicate that there is no significant impact on students' academic success when they listen to music while studying. However, it is recommended that future research be conducted to explore the potential for learning and adaptability in studying situations involving music, with a larger sample size and a wider range of musical genres.

Limitations

This study comprises a limited number of participants (20 in total, 14 male and 6 female students). During study sessions on vocabulary acquisition, the volume of the music was kept at an average level that would not disturb the participants. It is possible that if the participants had control over the music volume, they could prefer it to be higher or lower based on their preferences. The research did not include a questionnaire to assess the participants' motivation and concentration; only observations were relied upon. Conducting a questionnaire regarding these attitudes would be more beneficial in understanding the impact of studying while listening to music on students' motivation.

Recommendations

As mentioned previously, according to some studies music can make language learning more enjoyable. Learning a new language can be challenging and sometimes even frustrating. However, listening to music in a foreign language can make learning more enjoyable and engaging and the other studies state that there is no effect of listening to music on success during language learning process. It is important that teachers first plan what their aims for using music are (e.g., promoting learner autonomy, grammar study, affect raising, language play, forming an L2 13 self, etc.), whom the music is by, and how the learners will respond to it. Future studies with a larger number of participants, in the participants' natural study environments, with the music volume controlled by the participants, and a questionnaire measuring the participants' motivation and concentration levels at the conclusion of the research will probably be able to produce more accurate results.

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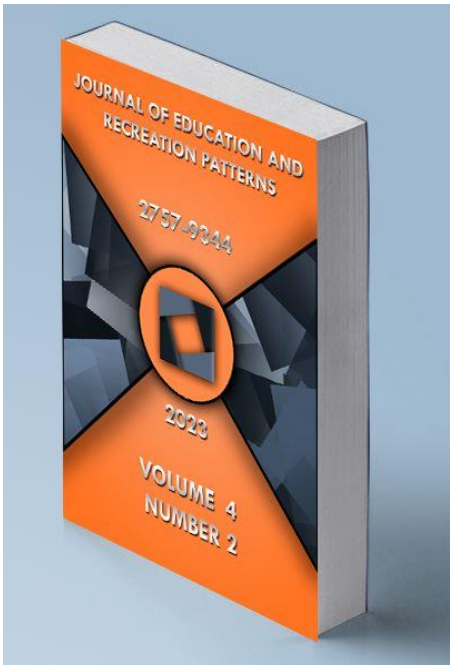
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Hasan Tahsin KAVLAK[1], Hasan Suat AKSU[2]

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[1] Hasan Tahsin Kavlak, Ankara Hacı Bayram Veli University, Faculty of Tourism, hasan.kavlak@hbv.edu.tr, https://orcid.org/0000-0003-0036-9652

[2] Hasan Suat Aksu, Selcuk University, Faculty of Tourism, gazihasansuat@gmail.com, https://orcid.org/0000-0001-8196-129X

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The Effect of Attitudes Towards Physical Violence and Demographic Variables on Serious Leisure Time Activity Choice

Hasan Tahsin Kavlak[1], Hasan Suat Aksu[2]

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ABSTRACT
More than 1.6 million people worldwide lose their lives every year due to violence. This rate makes the phenomenon of violence one of the leading causes of death in the world and can become an element of pressure on both economic and social life. It is extremely important to evaluate the solution proposals for the phenomenon of violence from an interdisciplinary perspective. At this point, it is assumed that there is a relationship between serious leisure activities and violence. Based on this point, the aim of this relational survey research is to determine the extent to which individuals' gender, educational status, weekly participation in serious leisure time activities, and perceptions of violence affect the likelihood of preferring serious leisure time activities. A relationship survey model and a simple random sampling method were used in the study. According to the findings, participants' weekly participation time in serious leisure time activities and educational level are significant predictors of serious leisure time activity choice. On the other hand, a negative relationship was found between the activity duration of serious leisure-time participants and their perceptions of physical violence. As a result, it was revealed that the attitudes towards violence of individuals who participated in outdoor serious leisure time activities were at a lower level compared to individuals who participated in indoor serious leisure time activities.

Keywords: Indoor Recreation Activities, Outdoor Recreation Activities, Serious Leisure Activities, Violence

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INTRODUCTION

A human being is a social being. Due to its social characteristics, it forms various behavioral patterns and characters by being influenced by environmental factors, is constantly in a cycle of mental and emotional change, and thus can acquire different habits and hobbies. On the other hand, it should be stated that there is a mental functioning coded as "fight or flight" in human nature. As a matter of fact, this code was given to man as an autonomous behavior with his existence. Therefore, in addition to the environmental factors affecting behaviors, there is also an internal motivation factor (Porges, 1997). In other words, while it is said that people can exhibit violent behavior as a reaction to the events in their environment, it should be accepted that they can also show a tendency to violence completely internally. For this reason, it is thought that the emergence of violence comes with the existence of human beings. From a religious perspective, in Judaism, Christianity, and Islam, which are the most common religions in the world, it is stated that the first violence was between Abel and Cain, the two children of Adam and Eve, who are accepted as the first human beings (Blenkinsopp, 2011).

Violence is a social problem that cannot be eliminated even with 21st-century science, although it has been going on since the existence of humanity. This social problem is defined by the World Health Organization as "the actual intentional use of power or the actual intentional use of such power against oneself, another person, or a group or community that results in or is likely to result in injury, death, psychological harm, developmental delay, or deprivation" (WHO, 2022). As can be understood from the given definition of violence, there is a situation where a person consciously uses his or her own power. In other words, violence comes up on the agenda because of a mental process. There are also studies arguing that the predisposition to violence is genetic (Viding & Frith, 2006; Tharshini et al., 2021). The fact that violence is transmitted to the next generation through genes indicates that this phenomenon has been going on since the existence of mankind.

In addition to the starting point of violence, it is essential to reveal the individual and social effects of violence and to think about how this social problem can be eliminated or reduced. Throughout history, many measures have been taken to prevent violence. It is said that the first law in history that includes articles on the prevention of violence and bullying dates to the 24th century BC. This law, also known as the "Urukagina Law", was created by the Sumerians, who invented writing (Bilgiç, 1963). It is estimated that people living in communities before the Sumerians had some rules among themselves. Both the Urukagina and Hammurabi laws of ancient times and the 21st century laws include deterrent penalties such as fines and imprisonment as sanctions for violence and bullying (Duranoğlu, 2022). However, regardless of the sanctions, it is thought that the penalties are not sufficiently deterrent. The United Nations Children's Fund (UNICEF) states that one adolescent dies every seven minutes worldwide due to violence (2015) and that the rate of children aged 1–14 who are exposed to violence in any way is over 80% (UNICEF, 2022). The World Health Organization states that one in every three women is exposed to violence (WHO, 2018). Therefore, there is a need for more than punishments supported by laws to prevent violence. At this point, it is necessary to turn to practices that will minimize the aggression levels of individuals and reduce their tendency to violence.

The individual experiences a chemical cycle within his or her anatomical structure while deciding, implementing, or after implementing violent behavior. It is known that many hormones and neurotransmitters, such as serotonin, dopamine, oxytocin, testosterone, and endorphin, are effective in this chemical cycle. Therefore, the deficiency or excess of a hormone in the anatomical structure of an individual can affect their attitude towards violence. For example, an increase in testosterone, norepinephrine, and hypoglycemia in the anatomical structure increases the tendency towards violence. However, an increase in seratonin,

dopamine, and vasopressin gives calmness to the individual and decreases the level of aggression (Abay & Tulu, 2000).

Studies have shown that exercise regulates hormones (Civan et al., 2018), that physical activity has a positive effect on serotonin and dopamine (Terlemez, 2019), and that it affects testosterone hormone (Bhasin et al., 2001). Therefore, it can be stated that physical activity and exercise, which are also considered recreational activities, have a happy effect. Studies have also shown that participation in recreation reduces atypical behaviors such as violence and aggression (Yönet et al., 2016; Aksu & Varol, 2022; Berdychevsky et al., 2022).

The psychologist Spencer (1873) argued that individuals accumulate energy in their bodies under atypical behaviors such as violence, stress, aggression, and boredom. According to Spencer, who observed children, he argued that individuals can discharge the energy accumulated in their bodies through play and thus move away from the potential to perform atypical behaviors. This situation, called the Waste Energy Theory, emphasizes the importance of physical activity and recreation in the context of play (Evans & Pellegrini, 1997).

In recreation activities where individual skills can be developed as well as psychological well-being and distancing from atypical behaviors, the type and frequency of participation in the activity can also affect the degree of development of these psychological states and individual skills. At this point, it is necessary to draw attention to whether recreation activities are carried out randomly and infrequently or planned, regularly, and at certain intervals.

Stebbins, who has been pondering on this issue for more than 30 years, argues that individuals have three different time periods in recreation participation: serious, casual, and project-based, and puts forward the phenomenon of "Serious Leisure". According to Stebbins, serious leisure time is "the period of time spent systematically participating in and following the chosen activity in order to obtain a career related to amateur, hobby or volunteer activities that require special knowledge, skills and experience, are very important, interesting and satisfying" (Stebbins, 1982; 2011). Casual leisure time is defined as "a period of time spent on activities that require little or no special training, are relatively short in duration and provide instant gratification because they are intended to provide instant gratification" (Stebbins, 1997). Project-based leisure is defined as "short-term, reasonably complex, one-off or infrequent, but occasional leisure time or time spent on activities that take place at a time away from unpleasant obligations" (Stebbins, 2011). Stebbins (1982) focused more on serious leisure time and stated that serious leisure time differs from other leisure times with the following characteristics:

- Stability in the recreational activity that the individual is oriented towards,
- Recreational activities provide opportunities for professional development or acquiring a new profession.
- It requires personal effort to develop a range of skills.
- It helps the individual improve himself or herself.
- Serious leisure is a social construct with a distinct culture with its own values, beliefs, principles, and norms.
- To ensure that individuals adopt the activities and establish a strong bond with them.

When we look at the characteristics that distinguish serious leisure time from other leisure time periods, it is argued that the individual's tendency towards activity can increase, he or she can gain personal skills, take part in a new culture and value system, and engage in self-improving activities. The individual should stay in the flow and use his or her leisure time in a recreational sense rather than engaging in atypical behaviors. In the serious leisure period, the state of staying in the flow put forward by Csikszentmihalyi is in question. Because the individual stays in the flow by performing a series of activities that are continuous between the

difficulty level of the activity and personal skills (Nakamura & Csikszentmihalyi, 2009), If the individual stays in the flow and continues the activity, he or she can provide stability by avoiding atypical behaviors, continuing self-development, and meeting the need for self-actualization.

Based on the given information, the aim of this relational survey research is to determine the extent to which individuals' gender, educational status, weekly participation in serious leisure activities, and perceptions of violence affect the likelihood of preferring serious leisure activities. In this context, the following questions were sought in the research:

- Are individuals' attitudes towards violence effective in their choice of serious leisure activities?
- Are the variables of gender, educational status, and weekly participation time in serious leisure activities effective in the selection of leisure activities?
- What is the order of importance regarding the prediction level of predictor variables?

METHOD

Research Design

In this study, since it was aimed to determine to what extent the gender, educational status, weekly participation time in serious leisure time activities, and physical violence attitudes of individuals affect the possibility of choosing serious leisure time activities, the research was conducted according to the relational screening model, one of the quantitative research designs.

Population and Sample

The population of the research consists of Fitness centers and Nature clubs located in the central districts of Konya and Izmir (Türkiye). Google maps application was used to identify the fitness centers in the central districts of Konya (Meram, Selçuklu and Karatay). During the research process, 20 fitness centers and 6 nature clubs were identified. As a result of the interviews, it was determined that fitness centers had 3,721 members and nature clubs had 197 members. The same process was carried out again in Konak and Bornova districts, which are the central districts of Izmir. A total of 42 fitness centers and 14 nature clubs were identified in these districts. As a result of the interviews, it was determined that the total number of members of fitness centers was 7.013 and 579 people were members of nature clubs. When the sample of the research was calculated with 95% confidence interval and 5% margin of error formula, it was concluded that a sample size of 372 people would be sufficient for 11.510 subjects constituting the universe. Probability-based simple random sampling technique was used as the sampling method (Aslan, 2018). To identify individuals who regularly attend fitness centers and nature clubs, participants will be referred to as individuals who participate in serious indoor and outdoor leisure time activities in the rest of the article.

When the demographic information of the participants is analyzed, it is seen that 48.6% of the subjects are female and 51.2% are male, the most crowded group in the educational status variable is gathered in the group with a bachelor's degree or higher (34.4%), the number of subjects in the group participating in indoor and outdoor serious leisure time activities is almost half and the group allocating 3-4 hours as weekly participation time to these activities (30.1%) is predominant (Table 1).

Table 1. Findings Related to Participant Form

Variables	Groups	n	%
Gender	Woman	254	48.8
	Male	267	51.2
Education Status	Primary education	51	9.8
	Secondary Education	126	24.2
	Associate degree	165	31.7
	License and over	179	34.4
Serious Leisure Activity	Closed Area	263	50.5
	Open Space	258	49.5
Weekly Attendance Period	60-119	65	12.5
	120-179	111	21.3
	180-239	157	30.1
	240-299	102	19.6
	300 and over	104	16.5

Data Collection Tools & Process

The participant form created by the researchers was used as a data collection tool in the study, and the relevant form includes information about the gender, educational status, serious leisure time activity, and weekly participation time of the serious leisure time participants.

The data of the study were collected using the "Attitudes Towards Violence Scale," developed by Velicer et al. (1989), updated by Anderson et al. (2006), and adapted to Turkish by Özkan et al. (2018), ensuring its validity and reliability. The scale consists of 46 items and consists of "Intimate and Interpersonal Violence" (14 items), "Physical Violence" (10 items), "War Coded Violence" (11 items), "Punishment Coded Violence" (8 items), and "Other Violence" (3 items) sub-dimensions. The Likert-type scale has a 5-point scale. In the study adapted into Turkish by Özkan et al. (2018), the Cronbach's alpha reliability coefficient of the whole scale was determined to be 0.93. In this study, the Cronbach's alpha reliability coefficient was calculated at 0.95.

Data Analysis

The participant form and the related scale used in the study were approved by the ethics commission of "Selçuk University" with the decision number "01.03.2022-244569". The participant form and the related scale were obtained by using face-to-face survey techniques between May 2, 2022, and July 10, 2022. 587 of the 680 participant forms left to the relevant centers were received. The return rate is 86%. Within the scope of the research, 587 people were reached, and the data of 66 subjects were excluded from the research due to incomplete and incorrect filling in of the data and not regularly participating in the relevant activity, and the procedures were carried out with 521 data points. In the research, the question "I have been doing these activities regularly for at least 6 months" was added to check whether individuals regularly participate in serious leisure time activities. Of the data obtained, 66 were excluded from the research set because 47 individuals did not regularly participate in these activities and 19 individuals filled out the questionnaire incompletely and incorrectly. The analyses were carried out through the "Jamovi" package program, which is open-source software.

FINDINGS

A binary logistic regression analysis was conducted to examine the effect of individuals' education level, weekly participation time, average perception of physical violence, and gender

variables on the likelihood of preferring serious leisure activities in nature (outdoors). Before the analysis, the assumptions of freedom from outliers and multicollinearity were checked. The Z scores of the quantitative predictor variables were analyzed to check for outliers, and no values within 3 were found. In addition, the VIF values of the predictor variables were less than 10 and the tolerance values were greater than 0.2, which proved that there was no multicollinearity problem. After it was determined that the assumptions were sufficiently met, the results of the binary logistic regression analysis are presented in Table 2.

Tablo 2. Results of Logistic Regression Analyses of Individuals' Serious Leisure Preferences

Predictor Variable	B	Sh	z	p	Odds Ratio	Confidence Interval (%95)	
						Lower	Upper
Predictor	-6.214	1.225	-5.075	**<.001***	0.002	1.814	0.022
Education Level	-0.342	0.145	-2.360	**0.018***	0.710	0.535	0.943
Weekly Attendance Period	0.394	0.101	3.892	**<.001***	1.483	1.216	1.808
Physical Violence	-0.210	0.247	-0.851	0.395	0.810	0.499	1.315
Gender (Male-Female)	0.397	0.273	1.454	0.146	1.487	0.871	2.540
Deviance = 497; AIC = 509		R^2 (Nagelkerkes's) = 0,47		X^2 = 226	***p<.05**		

It was determined that the predictor variables in the model obtained as a result of the analysis significantly predicted the likelihood of the individual to prefer outdoor serious leisure time activities (X^2=75.3, p<.05). It is seen that the model consisting of education level, weekly participation time, physical violence attitude and gender variables explains 47% of the variance (Nagelkerkes' R^2) in the preference for outdoor serious leisure time activities. When the significance of the regression coefficients related to the predictors in the model were examined, it was found that weekly participation time (z=3.892, p<0.05) and education level (z=-2.360, p<0.05) were significant predictors, while gender (z=1.454 p>0.05) and physical violence (z=-0.247, p>0.05) were not significant predictors (Table 2).

When the odds ratios of the predictor variables are analyzed, it can be said that the probability of participating in outdoor serious leisure time activities is 1.487 times higher for men than for women in the model, and in terms of physical violence attitude, the tendency of the physical violence attitude of individuals who participate in outdoor serious leisure time activities decreases by 0.810 compared to the other group (Table 2).

Tablo 3. Open Space Leisure Time Classification Table for the Choice of Activity

		Estimated variable			Predicted (%)
Observed		**Open Space**	**Closed Area**	**Total**	
	Open Space	**175**	83	258	79 (Correct)
	Closed Area	26	**237**	263	68 (Correct)
	Total	201	320	**521**	90 (Accuracy)

Not: The cut-off point was taken as 0.5

As seen in Table 3, the model was able to correctly classify 90% of individuals' outdoor serious leisure time activity preferences in general, and it was able to correctly predict 79% of the level of tendency towards outdoor serious leisure time activities and 68% of indoor serious leisure time activities.

DISCUSSION

The aim of the studies in which attitudes towards violence are measured is to measure individual attitudes, determine which variables lead individuals to violence or which tools are related to the tendency towards violence, and take necessary measures (Kreager, 2007; Iannotti et al., 2009; Ybarra & Thompson, 2018; Rasmussen et al., 2020; Naseri et al., 2023). The phenomenon of violence has been and continues to be examined in many studies from the perspectives of different disciplines. This situation is revealed in the "World Report on Violence and Health," published by the World Health Organization in 2002, and it is constantly emphasized in the research conducted on the subject to date (WHO, 2022; WHO, 2021; WHO, 2021a). Based on this point, it was tried to understand how individuals' gender, educational status, weekly participation in serious leisure time activities, and physical violence attitudes influence their choice of serious leisure time activities.

It was revealed in the research findings that individuals who prefer open spaces within the scope of serious leisure activities have a lower tendency towards physical violence compared to individuals who prefer closed spaces. As stated in the "Attention Reconstruction Theory" put forward in the pioneering study by Kaplan (1995), spending time in nature causes consistent positive emotions as well as benefits such as stress reduction and increased attention capacity. A growing body of research suggests that spending time in nature, especially through physical recreation activities, contributes to positive psychological outcomes (Keniger et al., 2013). Although psychological state is known to influence violent tendencies (Anderson & Kiehl, 2014), it has been shown that individuals with normal levels of psychological well-being may be less violent (Vollhardt et al., 2014). In addition, in a study conducted by Nattiv et al. (1997), it was concluded that the use of weapons and involvement in physical fights, and thus the tendency to violence in university athletes, were higher in individuals participating in indoor sporting activities. At this point, the findings obtained in this study support the literature.

The duration of weekly participation in serious leisure time activities was also found to be a predictor of the choice of outdoor serious leisure time activities and physical violence behavior. Participation in both serious leisure activities and physical activities is associated with a high sense of health awareness (Lamb et al., 1990). One of the factors that is effective in the emergence of these realizations is the hormone secreted during the activity. Through the hormones secreted during serious leisure time activities, several chemical mechanisms can be activated on the body and can lead the individual to mental and physical well-being. For example, endorphins secreted during physical activity contribute to happiness (Yuliadarwati et al., 2022), adrenaline and noradrenaline contribute to energy (Chauntry et al., 2022), and cortisol contributes to the stabilization of blood sugar levels (Jia et al., 2022). It is hypothesized that feeling physically and mentally well may reduce the tendency towards violent behavior. In addition, it is expected that the increase in weekly participation time will decrease the tendency towards violence.

Another finding obtained in this study activities and violence. There is a comprehensive literature on the relationship between education level and violence. It is stated that education level is related to violence, especially depending on socioeconomic status (Evans & English, 2002). It is estimated that societies with high levels of education will take faster steps towards development and that individuals will be much more likely to turn to alternative solutions such as problem-solving skills, communication, and mediation depending on the increase in the level of education (Awan et al., 2011; Bonal, 2007; Silva-Laya et al., 2020). As a matter of fact, the main purpose of education is to improve the knowledge, skills, understanding, and values of individuals, to reveal their potential, and to contribute to the learning process that lasts throughout their lives. There are many studies that reveal the existence of a positive relationship between education and health awareness. When the common results of the studies are examined, it is seen that an increase in the level of education is associated with higher health

awareness (Cowell, 2006; Stacey, 1998; Zajacova & Lawrence, 2018; Zimmerman & Woolf, 2014). Thus, it is expected that there is a relationship between education level and participation in serious outdoor leisure activities. As a matter of fact, studies show that the effect of outdoor recreation activities on health parameters is higher compared to indoor activities (Godbey, 2009; Hammond et al., 2011; Pasanen et al., 2014). At this point, in this study results support the literature.

Conclusion

This study data does not contain information on the selection of a specific activity by individuals, in addition to grouping the serious leisure activities in which individuals participate as indoor and outdoor. This point reveals the deficiencies of our research. In addition, our research was conducted only on serious leisure-time activity participants. In addition, the economic welfare status variable, which is estimated to have a significant effect on individuals' choices of serious leisure activities, was excluded from our research. This situation shows another shortcoming of our research. Finally, there is a need for qualitative research designs to understand the reasons for the factors that are effective in the choice of serious leisure activities in outdoor areas compared to indoor areas. In this way, the reasons underlying the phenomena can be analyzed in depth and contribute to the literature.

As a result, it was found that the duration of participation and education level were effective predictors of individuals' choice of outdoor serious leisure activities compared to indoor activities. In addition, it was revealed that the attitudes towards violence of individuals who participate in outdoor serious leisure time activities are at lower levels compared to individuals who participate in indoor serious leisure time activities.

Recommendation

Based on the findings and limitations of the study described, there are several suggestions for future research in this area. First, future studies should aim to address the identified deficiencies, such as not having information on the specific activity selection by individuals. Conducting qualitative research to delve deeper into the reasons why individuals choose outdoor over indoor serious leisure activities would be valuable. This could involve in-depth interviews or focus groups to explore the motivations and preferences of participants.

Secondly, researchers should consider incorporating additional variables that were excluded in the present study, such as economic welfare status. This can help provide a more comprehensive understanding of the factors influencing individuals' choices of serious leisure activities. Additionally, exploring the impact of other socio-demographic variables, psychographic factors, and environmental factors on activity choices could enhance the depth of future studies.

Limitations

In this study, serious leisure-time participants have been categorized in a categorical manner. Future research should aim to overcome the limitations of the current study and provide a more detailed understanding of the factors influencing preferences between indoor and outdoor serious leisure-time activities.

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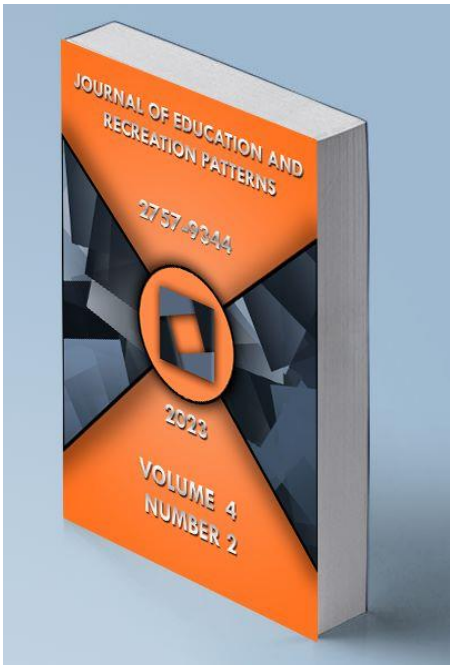
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Mehmet Sabir ÇEVİK[1], Mehmet Nezir ÇEVİK[2]

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[1] Mehmet Sabir Çevik, Dr., Yunus Emre Primary School, Siirt/Turkey, sahici1980@gmail.com, https://orcid.org/0000-0002-8817-4747

[2] Mehmet Nezir Çevik, Dr. Lecturer, Siirt University, Siirt/Turkey, nezir.cevik@siirt.edu.tr
https://orcid.org/0000-0001-9880-037X

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Examination of Variables Predicting the Emotional Intelligence Levels of Physical Education and Sports Teacher Candidates Using the CHAID Analysis

Mehmet Sabir Çevik[1], Mehmet Nezir Çevik[2]

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ABSTRACT
This research aims to determine the variables predicting the emotional intelligence levels of physical education and sports teacher candidates and to prioritize the variables in terms of their predictiveness using a relational screening model. The study group consists of 445 physical education and sports teacher candidates studying at two state universities in the Central Anatolia and South-eastern Anatolia Regions in the 2022–2023 academic year. Research data were collected using the "Emotional Intelligence Scale" consisting of three dimensions and 20 items, and the "Personal Information Form". Research findings were analyzed using descriptive statistics and the CHAID analysis method. According to the research results, it was determined that the teacher candidates' emotional intelligence levels were moderate on the scale as a whole and in the emotional regulation dimension, low in the emotional identification/comprehension dimension, and high in the emotional facilitation dimension. The gender variable was observed to have the highest impact on the emotional facilitation dimension and emotional intelligence as a whole. Variables with the highest impact on the emotional identification/comprehension dimension were determined to be graduated high school, gender, and grade level. In contrast, the variables with the highest effect on the emotional regulation dimension were determined to be participation in social and cultural activities, graduated high school, and gender.

Keywords: CHAID Analysis, Emotional Intelligence, Physical Education and Sports Teaching, Teacher Candidates

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INTRODUCTION

The concept of emotional intelligence (EQ), emerging with the innovative world order and paving the way for new expansions, is among the most important topics on the agenda (Yesilyaprak, 2001). Individuals' difficulties dealing with negative emotions caused by overburden or conflicts in daily or professional life underlie the increasing interest in EQ (Erdogdu, 2008). Considering these difficulties, Goleman (1995) explains some people's success in daily life with their ability to analyze their own emotions or those of others correctly and manage them well despite having failed in school life. However, it is claimed that scientific studies on EQ do not have enough arguments to fully detail and explain EQ (Dulewicz & Higgs, 2000). This increases the efforts of both organizations and researchers to understand and make sense of EQ (Zampetakis et al., 2009).

Compared to other people, those exerting an effort to understand the feelings of others are more successful and respected in social and business life (George, 2000). Individuals and managers who understand the language of emotions support personal development by easily transferring their values to individuals or employees (Mayer & Salovey, 1997). Conversely, people who can understand emotions establish efficient and meaningful communication environments with others (Mayer et al., 2000). EQ is also vital for preventing burnout and preserving psychological health among individuals (Bar-On, 2007). Goleman (1995) states that EQ balances the relationship between the mind and emotion and that the mind cannot be used effectively without EQ. Mikolajczak and Limunet (2008) underline their significance in teaching how to cope with problems, while Austin et al. (2005) in ensuring satisfaction in social relations. Caruso and Salovey (2004) also note that EQ is essential because it contributes to decision-making processes and enriches the intellectual activities of individuals. Accordingly, it is concluded that EQ is a vital and required type of intelligence because it forms the basis for other intelligence types, especially academic intelligence; ensures emotional empathy; increases the social prestige of individuals; establishes efficient communication environments; makes people happy by interacting with each other; assures satisfaction in social relations by teaching how to cope with problems, and provides a balance among other intelligence types. Moreover, it should be noted that educational organizations are expected to develop EQ among students and increase awareness in this regard.

The duties and responsibilities of teachers, considered the most essential element of the education system, are not limited to conveying specific information to students. Teachers and candidates are responsible for raising future generations (Saribas & Babadag, 2015). According to Onen (2012), the teaching profession has its own responsibilities, values, and principles, as do other occupational groups. Awareness of teachers' affective qualities can be decisive in revealing these responsibilities, values, and principles. Indeed, realizing affective characteristics enables the development of EQ among teachers (Asrar-ul-Haq et al., 2017). Moreover, realizing affective characteristics in educational organizations is vital in finding solutions for teachers to social and emotional pressures (Ignat & Clipa, 2012) and enabling the acquisition of skills to read and manage emotions in social contexts (Zeidner et al., 2004). Therefore, it can be concluded that the teachers, as well as the teacher candidates, at the macro level and physical education and sports teacher candidates (PESTC) at the micro level should have EQ.

Emotional intelligence significantly contributes to the understanding and interpretation of both one's own and others' emotions (Mayer & Salovey, 1997; Nettelbeck & Wilson, 2005; Yeung, 2009) and increasing motivation (Hamarta et al., 2009). Similarly, high emotional intelligence is also necessary for individuals' physical and mental health (Parker et al., 2001). Individuals with developed emotional intelligence can be more successful and happier in their private and professional lives (Diken & Aydogdu, 2018). Saini (2016) summarizes the main

characteristics of individuals with high emotional intelligence as communicating effectively, instilling positive behaviors in others, being original, learning from mistakes, and social integration. In fact, these characteristics draw attention because they are the characteristics teachers should have (Bozdemir Yuzbasioglu et al., 2020). On the other hand, studies on teachers' emotional intelligence indicate that emotional intelligence is necessary for students' academic achievements (Downey et al., 2008; Sánchez-Álvarez et al., 2020), a good classroom climate (Tsoli, 2015), teacher engagement (Abiodullah et al., 2020; Pena et al., 2012), job satisfaction (Li et al., 2018) and teaching practices (Kaur et al., 2019). It is also stated that teacher candidates' classroom management skills are predicted by emotional intelligence (Ngui & Lay, 2020), and teachers or teacher candidates with high emotional intelligence have positive effects on the learning skills of the students they train (Sahin-Baltaci & Demir, 2012; Tunca et al., 2015). Some studies emphasize that emotional intelligence reduces burnout in teachers and is an essential personal resource for teachers (Chesnut & Cullen, 2014; Mérida-López et al., 2017).

The teaching profession has norms and values unique to it. To determine these norms and values of the teaching profession, one must know some affective qualities of teachers (Onen, 2012). In addition, teachers may experience positive or negative emotions in their interactions with students, administrators, and other colleagues. Teachers with low emotional intelligence may reflect negative emotions and attitudes in the classroom environment due to their interactions with others. Teachers with high emotional intelligence exhibit appropriate behaviors in the classroom by controlling their emotions (Sarisoy & Erisen, 2018). In this context, as future teachers, teacher candidates are expected to have developed emotional intelligence competencies in addition to personal and professional characteristics or to reach a certain maturity (Akar Kayserili & Gundogdu, 2010). On the other hand, student-teacher interaction is an important component of emotional intelligence, and students need to be made to feel valued by their teachers in the educational process (Ozturk, 2016). It is possible for students to feel valuable if teachers can provide their students with the skills of empathizing, understanding others' feelings, working in cooperation, and communicating (Girgin, 2009). Therefore, teacher candidates and teachers with high levels of emotional intelligence play a critical role in upbringing students and shaping their lives (Eranil & Ozcan, 2019). As a matter of fact, literature studies report that teachers with high levels of emotional intelligence affect students' behavior, engagement, and commitment (Corcoran & Tormey, 2013; Latif et al., 2017). Some studies in the literature also revealed that teachers who can manage their emotions well are more satisfied with their work and experience less burnout (Brackett et al., 2010; Corcoran & Tormey, 2012).

There is extensive research in the literature addressing emotional intelligence, with a sample group consisting of university students and PESTC. For example, EQ levels of university students and PESTC are reported to be related to the method of coping with stress (Deniz & Yilmaz, 2006; Saddki et al., 2017), state of physical and social health (Extremera & Fernández-Berrocal, 2006; Moeller et al., 2020; Ozkan, 2017; Zeidner & Matthews, 2016), problem-solving skills (Yilmaz Karabulutlu et al., 2011), subjective well-being (Por et al., 2011), satisfaction with life (Holinka, 2015; Kong et al., 2012), intercultural communication (Fall et al., 2013), academic success (Malik & Shahid, 2016), critical thinking (Certel et al., 2011), athletic performance (Yasar, 2010), and happiness (Furnham & Petrides, 2003). Besides these studies, there are also studies examining the effects of personal variables (such as gender, age, grade level, and graduated high school) concerning university students and PESTC on the level of EQ (Austin et al., 2007; Avsar & Kasikci, 2010; Borekci, 2002; Ergin, 2000; Harrod & Scheer, 2005; Malak, 2011; Maliha & Rehana, 2010; Ozdenk, 2018; Sivrikaya & Siktar, 2017; Taskin et al., 2010; Temeloglu, 2018; Yaliz, 2013; Yarmohammadi & Taghibigloo, 2013; Yetis & Servi, 2020). However, it was observed that none of these studies identified the predictor

variable that best explains the effect of personal variables on EQ levels. Therefore, the variables that may impact the EQ levels of the PESTC should be prioritized in terms of their predictiveness. By revealing the variables that may affect the EQ levels of physical education and sports teacher candidates, this research contributes to estimating the EQ levels of teacher candidates studying in other departments. Furthermore, no research in the literature examines the EQ levels of PESTC with the CHAID analysis. Thus, this research is being conducted with a statistical method such as the CHAID analysis, dividing the data into homogeneous subsets, which might provide more transparent and more detailed information about the predictive power of the variables. Therefore, this research determines the variables that predict the EQ levels of PESTC using the CHAID analysis method.

LITERATURE REVIEW

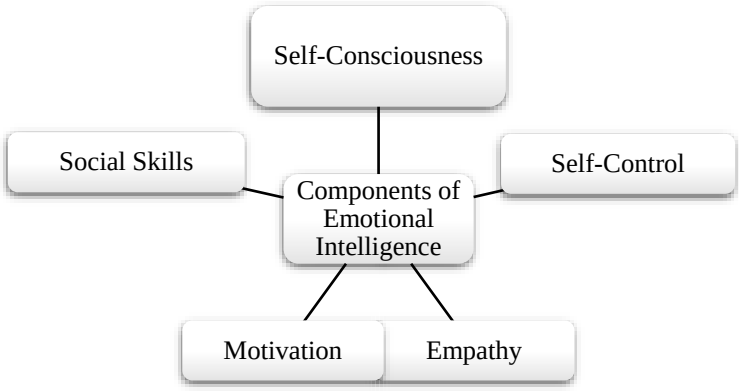
Emotional Intelligence

The foundations of EQ were laid with the development of Thorndike's concept of social intelligence in the 1920s (Bar-On, 2006). After Thorndike, Gardner is known as the second scientist who contributed to developing the concept of EQ with his "Multiple Intelligence Theory" approach, although he did not use the concept of EQ directly (Quebbeman & Rozell, 2002). In addition to these scientists, researchers such as Wayne Payne, Bar-On, Salowey, and Mayer also made significant contributions to the spread of EQ in their studies and the theories they developed (Bastian, 2005).

The literature covers several definitions of EQ. Mayer and Salovey (1997) define EQ as the understanding of the emotions of others, regulation, and management of emotions; Petrides and Furnham (2000) as establishing good relations with other people and being able to motivate others; Goleman (1995), Casper (2003), and Austin et al. (2005) as being hopeful and developing empathy by controlling impulses; Bar-On (2006) as perseverance against the pressures of the environment; Gurbuz and Yuksel (2008) as the use of emotions effectively; and Faltas (2017) as the ability of individuals to balance their social and emotional competencies and to control their emotions by being aware of their self-capacity. It may be inferred that the common ground of these definitions is the emotional intelligence's intention to understand and make sense of both one's own and others' feelings.

Components of EQ are generally addressed under the headings of "self-consciousness, self-control, empathy, motivation, and social skills" (Goleman, 1995; Mayer & Salovey, 1997).

Figure 1. Components of EQ (adapted from Goleman, 1995)



Self-consciousness: An individual's awareness of their own feelings and mood. Self-consciousness is the most critical component of EQ (Marshall, 2001).

Self-control: The ability to control one's own emotions in a balanced and consistent manner (Poskey, 2006). The self-control component means the ability to control one's own emotions.

Empathy: The ability of individuals to understand the emotions of others and how they feel. In other words, empathy is an individual's ability to put oneself in someone else's place (Albrecht, 2006).

Motivation: An individual's activation of their emotional characteristics to start or finish a job (Dogan, 2005).

Social Skills: A person's ability to effectively communicate with others and manage this communication (Stanley, 2010).

The self-consciousness component of EQ refers to the awareness of emotions; self-control to the control of emotions; empathy to the understanding of others' emotions; motivation to the correct activation of emotions; and social skills to the ability to communicate with other people. Because of the abovementioned components, EQ differs from other intelligence types. However, according to Goleman (1995), unlike the intelligence type known as intelligence quotient (IQ), EQ is a type of intelligence that can be learned later and is open to development. In other words, it can be stated that EQ can be continuously improved with the effect of the environment and experiences. Based on the ability to continuously improve emotional intelligence, Mayer and Salovey (1997) defined people with high EQ as solution-oriented, optimistic, and capable of preventing tense situations and maintaining strong social relations. Similarly, Ozdenk (2015) lists the characteristics of individuals with low EQ as tense, pessimistic, and having weak social relations. In fact, all these explanations draw attention to the importance and necessity of individuals having EQ in social life. In other words, individuals with EQ may be more successful in social and daily life than other individuals.

Purpose of the study: This research aims to determine the variables that predict the EQ levels of PESTC. Under this objective, answers to the following questions were sought:

Q1: What are the EQ levels of PESTC?

Q2: What variables best predict the EQ levels of PESTC?

Q3: Which variables predict the EQ levels of PESTC?

METHOD

Research Design

Since this research determines the variables predicting the EQ levels of PESTC, it is quantitative research in the relational screening model. The relational screening model determines the degree of change among multiple variables (Fraenkel et al., 2012). Predictor variables of the research are gender, grade level, graduated high school, time spent on social media per day, place of birth, participation in social and cultural activities, and reading habits, while the predicted variables are the EQ level and its sub-dimensions (emotional identification/ comprehension, emotional facilitation, and emotional regulation).

Research Group

The research group consists of PESTC students studying at two state universities in the Central Anatolia and South-eastern Anatolia Regions in the 2022–2023 academic year. The study participants were physical education and sports teacher candidates who could be reached

voluntarily. Although no special conditions were required for participation in the study, it was deemed sufficient for the participants to study in the physical education and sports teaching departments. Participants' demographic information such as "gender, grade of study, high school graduated from, daily social media usage time, place of birth, participation in social and cultural activities, and reading habits" were determined through the "Personal Information Form" before the scale questions. The research is an "internal validity" study aiming to determine the relationship between variables. In other words, since this research was not designed as an "external validity" study that can be generalized to large groups or populations (Buyukozturk et al., 2013), the term "Research Group" was used instead of the expressions population and sample. In the research, 540 scales were distributed, and 445 of them were found to be suitable for analysis. 254 (57.1%) were female while 191 (42.9%) were male; 43 (9.7%) were grade, 94 (21.1%) were second grade, 157 (35.3%) were third grade, 151 (33.9%) were fourth grade students; 328 (73.7%) graduated from vocational and technical high school (VTHS), 117 (26.3%) from anatolian and science high school; 296 (66.5%) used social media 5 hours a day, 149 (33.5%) used it more than 5 hours a day; 42 (9.4%) were born in villages, 80 (18%) in districts, and 323 (72.6%) provinces. In terms of participation in social and cultural activities, the number of those declaring no participation was 66 (14.8%), occasional participation was 316 (71%), and constant participation was 63 (14.2%). Moreover, 359 (80.7%) participants confirmed their habit of reading, whereas 86 (19.3%) stated that they did not have this habit.

Data Collection Tool

Research data were obtained through the "Personal Information Form" and the "EQ Scale". The "Personal Information Form" developed by the researchers consisted of questions about the participants' "gender, grade level, graduated high school, time spent on social media per day, place of birth, participation in social and cultural activities, and whether they have reading habits". The "EQ Scale" used in the research was developed by Lee and Kwak (2012). The EIS was adapted to Turkish by Kayihan and Arslan (2016). The scale comprises three dimensions and 20 items and is of a 5-point Likert-type graded between (1) totally disagree and (5) completely agree. The first dimension of the EQ Scale, "Emotional Identification/Comprehension" dimension consists of 6 items (questions 1, 2, 3, 4, 5, and 6) (Sample item: I can understand the emotions and moods of others even if I do not know them very well); the second dimension "Emotional Facilitation" consists of 6 items (questions 7, 8, 9, 10, 11 and 12) (Sample item: I understand that a person can hate and love another person at the same time); the third dimension, "Emotional Regulation", consists of 8 items (questions 13, 14, 15, 16, 17, 18, 19 and 20) (Sample item: I can control my emotions well). Cronbach's alpha reliability coefficient of the scale was determined as .72, .71, .76, and .83 for emotional identification, emotional facilitation, emotional regulation, and the whole scale, respectively. Confirmatory factor analysis (CFA) results reveal that the 3-dimensional model of the scale conforms to the range of values suitable for the research sample (x^2=399.55, df=167, RMSEA=.075, NNFI=.90, CFI=.91, IFI=.91, SRMR=.080,). GFI=.86) (Kayihan & Arslan, 2016).

The reliability and validity of the EQ Scale were re-examined for this study. Accordingly, the Cronbach's alpha reliability coefficient calculated with the current research data was .89, .84, .90, and .90 for emotional identification, emotional facilitation, emotional regulation, and the whole scale, respectively; the McDonald's reliability coefficient was found to be .89, .85, .90, and .90 for emotional identification, emotional facilitation, emotional regulation, and the whole scale, respectively. Results of CFA testing the scale with research data also indicate that the 3-dimensional structure is coherent (x2/sd=603/164=3.67, RMSEA =.078, SRMR=.076, CFI=.92, TLI=.90) (Kline, 2011; Schermeller-Engel et al., 2003; Wang & Wang, 2012). Therefore, it can be asserted that the EQ Scale has reliability and validity values

suitable for this research.

Data Analysis and Ethical Consideration

Participation in the study was carried out on a voluntary basis without any obligation. Informed consent was obtained from the participants through the "Voluntary Participation Form." The researchers made explanations, including detailed information, to ensure that the participants responded honestly to the scales and made a commitment that the information, findings, or results obtained would not be used for any reason other than scientific purposes. The researchers also informed the participants that the research did not carry any risk and that they could leave the study at any time. Finally, the researchers included contact information on the front of the scales to provide the necessary explanations on issues that were not understood or hesitated about the research.

540 scales were distributed to teacher candidates in the research. However, 95 scales were determined to be blank or not returned. The remaining 445 scales were checked for missing data. Since the missing data of the research was less than 5% by chance, they were assigned by taking the averages of series through the EM expectation-maximization algorithm. Thus, data obtained from 445 participants was suitable for analysis.

Research data were analyzed with descriptive statistics and CHAID (Chi-Square Automatic Interaction Detector Analysis) analysis. The CHAID analysis was preferred in this research as it aimed to determine the impact of the predictor variables on the predicted variable through regression analysis and classification. The CHAID is an analysis technique that works with the classification logic of decision trees and is based on dividing the variables that affect the predicted variable into smaller branches in descending order (Horner et al., 2010; Michael & Gordon, 2004). Knots formed by the CHAID analysis indicate significant predictor variables while ranking the variables from top to bottom indicates the order of importance of the predictor variables (Kayri & Boysan, 2007). In the CHAID analysis, the predictor and predicted variables can be categorical or continuous. Moreover, as the CHAID analysis is not fully parametric, it does not require the general assumptions of regression analysis to be provided (Gorunescu, 2011; Maimon & Rokach, 2014). The main difference distinguishing the CHAID analysis from other decision tree analyses is that it produces multiple trees, whereas the others produce binary trees (Ture et al., 2009). The variable predicted in the CHAID analysis can be categorical or continuous. The chi-square test (x2) is used when the predicted variable is categorical, and the F test is used when there is a continuous variable (Atasoy & Guclu, 2020). Because the predicted variable was continuous in this research, the F test was applied. All predictor variables of the research were categorical, and all data analyses were performed using Jamovi 2.2.5 and SPSS 24 statistical package software. Research findings were reported according to .05 significance level.

FINDINGS

Findings on Descriptive Statistics

Table 1 displays the descriptive analysis results of the teacher candidates' EQ levels for the entire scale and based on its sub-dimensions.

Table 1. Descriptive Analysis Results of the Research (n=445)

Variables	$\bar{x}$	Sd.	Level
Emotional Identification/Comprehension	2.56	.79	Disagree
Emotional facilitation	3.70	.76	Agree
Emotional Regulation	3.12	.80	Partly Agree
EQ Scale - Whole	3.14	.59	Partly Agree

As seen in Table 1, in general, the EQ levels of teacher candidates are at the level of "Partly agree" on average ($\bar{x}$ =3.14, Sd=.59). The emotional identification/comprehension dimension of the scale ($\bar{x}$ =2.56, Sd=.79) is at the level of "Disagree" on average, the emotional facilitation dimension is at the level of "Agree" on average ($\bar{x}$ =3.70, Sd=.76); the emotional regulation dimension ($\bar{x}$ =3.12, Sd=. .80) is at the level of "Partly agree" on average. In other words, teacher candidates' EQ and emotional regulation dimensions are medium, emotional identification/comprehension dimension is low, and emotional facilitation dimension is high. Moreover, the lowest standard deviation was observed in the total score for the whole scale (Sd=.59), while the highest standard deviation was observed in the emotional identification/comprehension dimension (Sd=.79). This result indicates that the participants' answers on the whole scale are similar but different in the emotional identification/comprehension dimension.

CHAID Analysis Findings on the Emotional Identification/Comprehension Dimension of the Research

Figure 2. The CHAID Analysis Diagram Regarding the "Emotional Identification/Comprehension" Dimension

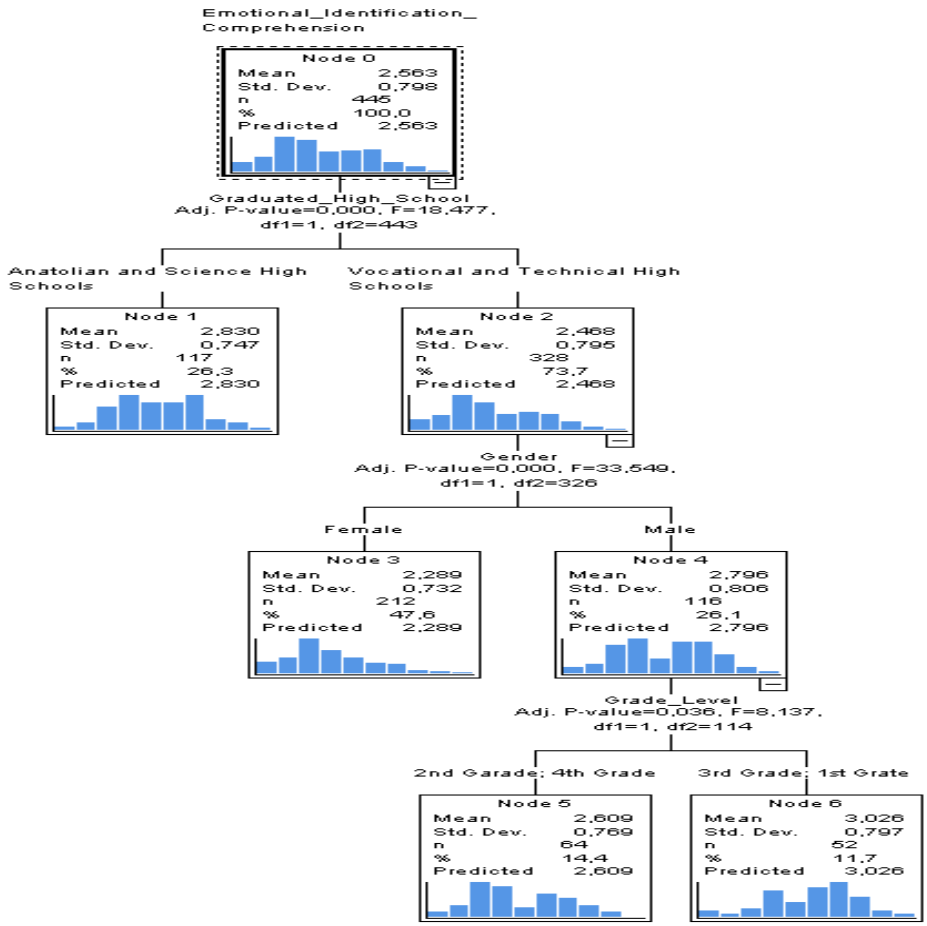


Figure 2 displays the CHAID analysis results regarding the subgroups that best explained the predicted variable, the EQ scale's emotional identification/comprehension dimension. Accordingly, high school graduation is observed to be the variable that best predicts the emotional identification/comprehension dimension. Intelligence levels on the emotional identification/comprehension dimension of the teacher candidates who graduated from

anatolian and science high schools ($\bar{x}$ =2.830; Sd=0.747; n=117; 26.3%) were significantly higher ($\bar{x}$ =2.468; Sd=0.795; n=328; 73.7%) than that of the teacher candidates who graduated from VTHS. Similarly, it was determined that gender was the variable that best explained the emotional identification/comprehension dimension for the teachers who graduated from VTHS. Intelligence levels on the emotional identification/comprehension dimension of male teacher candidates who graduated from VTHS ($\bar{x}$ =2.796; Sd=0.806; n=116; 26.1%) were significantly higher than those of female teacher candidates who graduated from VTHS ($\bar{x}$=2.289; Sd=0.732; n=212; 47.6%). Regarding the gender variable, grade level was determined to be the most significant variable affecting the intelligence levels on the emotional identification/comprehension dimension of male teacher candidates. Among the male teacher candidates who graduated from VTHS, the intelligence levels on the emotional identification/comprehension dimension of the 1st and 3rd grade students ($\bar{x}$ =3.026; Sd=0.797; n=52; 11.7%) were significantly higher than those of those studying in the 2nd and 4th grades ($\bar{x}$=2.609; Sd=0.769; n=64; 14.4%).

The CHAID Analysis Findings on The Emotional Facilitation Dimension of The Research

Figure 3. The CHAID Analysis Diagram Regarding the "Emotional Facilitation" Dimension

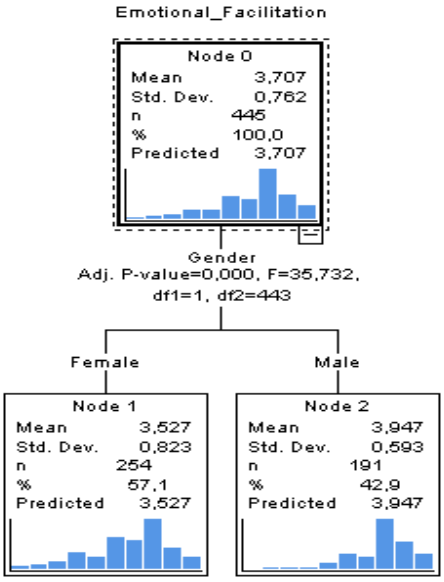


Figure 3 displays the CHAID analysis results for the subgroups that best explain the predicted variable, the EQ scale's emotional facilitation dimension. Accordingly, gender was determined to be the predictor variable with statistically the highest impact on the predicted variable, the emotional facilitation dimension. Intelligence levels on emotional facilitation dimension of the male teacher candidates ($\bar{x}$ =3.947; Sd=0.593; n=191; %42.9) are significantly higher than that of female teacher candidates ($\bar{x}$=3.527; Sd=0.823; n=254; %57.1). In other words, gender is the predictor variable that best explains the emotional facilitation dimension.

The CHAID Analysis Findings on the Emotional Regulation Dimension of the Research

Figure 4. The CHAID Analysis Diagram Regarding the "Emotional Regulation" Dimension

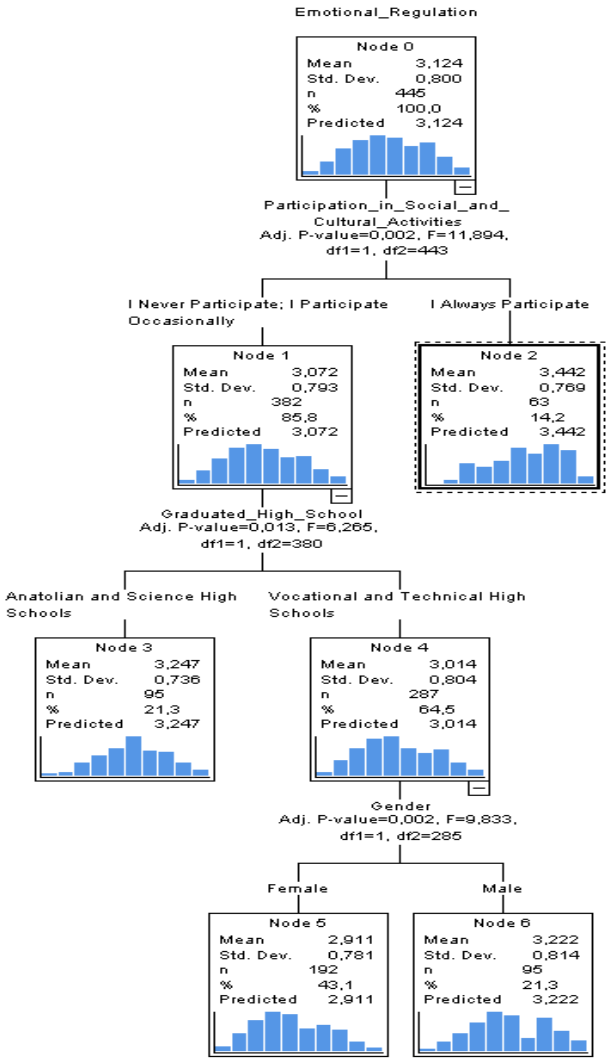


Figure 4 displays the CHAID analysis results for the subgroups that best explain the predicted variable, the emotional regulation dimension of the EQ scale. Accordingly, participation in social and cultural activities was determined to be the predictor variable with statistically the highest impact on the predicted variable, the emotional regulation dimension. It was determined that the intelligence levels on the emotional regulation dimension of the teacher candidates always participating in social and cultural activities ($\bar{x}$ =3.442; Sd=0.769; n=63; %14.2) are significantly higher than that of the teacher candidates never or occasionally participating in social and cultural activities ($\bar{x}$=3.072; Sd=0.793; n=382; %85.8). Moreover, graduated high school was determined to be the predictor variable with the highest effect on the level of intelligence on the emotional regulation dimension of the teacher candidates who never or occasionally participated in social and cultural activities. Intelligence levels on the emotional regulation dimension of the teacher candidates who graduated from anatolian and science high schools ($\bar{x}$=3.247; Sd=0.736; n=95; %21.3) are significantly higher than that of teacher candidates who graduated from VTHS ($\bar{x}$=3.014; Sd=0.804; n=287; %64.5). In terms of the graduated high school variable, gender was determined to be the most important variable

affecting the intelligence levels on the emotional regulation dimension of the teacher candidates who graduated from VTHS. Intelligence levels on the emotional regulation dimension of the male teacher candidates who graduated from VTHS ($\bar{x}$=3.222; Sd=0.814; n=95; %21.3) are statistically significantly higher than that of female teacher candidates who graduated from VTHS ($\bar{x}$ =2.911; Sd=0.781; n=192; %43.1).

The CHAID Analysis Findings on the Overall Total of Teacher Candidates

Figure 5. The CHAID Analysis Diagram Regarding the EQ Level

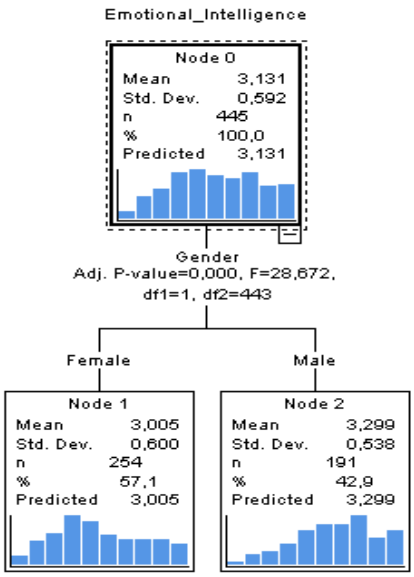


Figure 5 displays the CHAID analysis results regarding the subgroups that best explain the predicted variable, the total overall score for the EQ scale. Accordingly, gender was determined to be the predictor variable with statistically the highest impact on the predicted variable, the total overall score for emotional intelligence. Overall total scores for the EQ of the male teacher candidates ($\bar{x}$=3.299; Sd=0.538; n=191; %42.9) are significantly higher than that of female teacher candidates ($\bar{x}$=3.005; Sd=0.600; n=254; %57.1). In other words, gender is the predictor variable that best explains the teacher candidates' total overall scores for EQ.

DISCUSSION & CONCLUSION

This research aims to determine whether the variables of gender, grade level, graduated high school, time spent on social media per day, place of birth, participation in social and cultural activities, and reading habits predict the EQ level of physical education and sports teacher candidates. The research also aimed to prioritize the variables significantly impacting EQ regarding their predictiveness.

According to the research results, the EQ levels of the teacher candidates were moderate on the scale as a whole and in the emotional regulation dimension, low in the emotional identification/comprehension dimension, and high in the emotional facilitation dimension. Accordingly, although teacher candidates can effectively manage their emotions even in dire situations, they are not at the desired level in terms of understanding the emotions and moods of others and control of emotions. Moreover, it may be stated that the teacher candidates partially meet the expectations regarding the general EQ level. Besides studies in the literature, such as the current one, revealing that the EQ levels of the participants are at a moderate level (Avsar & Kasikci, 2010; Dutoglu & Tuncel, 2008; Ozdenk, 2018; Yilmaz Karabulutlu et al.,

2011), there are also studies pointing to high EQ levels (Certel et al., 2011; Simsek, 2018; Turkekul & Sarikabak, 2019). The fact that teacher candidates' EQ levels are not at the desired level can be explained by the importance attached to academic intelligence while ignoring EQ in the grown-up and educational environments. Salovey and Sluyter (1997), Slaski and Cartwright (2003) stated that the attitude of the family and the interaction with the environment are decisive in the formation of emotional intelligence; Yesilyaprak (2001) noted that EQ develops in parallel with the biological maturation of individuals and that EQ begins to take shape from an early age. Goleman (1995) and Akerjordet and Severinsson (2004) said that EQ cannot be explained only by heredity and can be learned. All these statements draw attention to emotional intelligence's feature of being open to development and able to be acquired later. Therefore, it may be concluded that the EQ levels of the teacher candidates can be raised to higher levels through intentional activities.

Teaching is a stressful and emotional profession requiring constant communication with others, such as parents, students, and colleagues. The fact that teaching is a stressful and emotional profession makes it necessary for teachers to be able to manage emotional situations (Kotaman, 2016a; Kotaman, 2016b). In other words, teaching is a profession that involves processes such as empathy and emotional regulation. For this reason, the emotional intelligence levels of individuals receiving teacher education should be at a sufficient level (Celik & Gungor, 2020). In terms of physical education and sports teachers, the ability of prospective teachers to cope with problems, perceive others correctly, establish positive relationships with their stakeholders, and be happy in their lives is stated to depend on their emotional intelligence level (Sezgin & Cakmak Yildizhan, 2023). Especially in sports settings, more stress, pressure, and emotional intensity can be experienced, and emotional intelligence may be needed more to be able to accurately understand the rival athletes' emotions (Adilogullari & Gorgulu, 2015; Lazarus, 2000).

Today, teaching is recognized as an extremely stressful, emotional, and challenging profession due to the comprehensive and multidimensional roles undertaken and the high demands arising from the profession (Miyagamwala, 2015). At the same time, the fundamental role of teachers is to support students' acquisition of academic knowledge and to create appropriate learning settings by effectively organizing the environment (Whitaker, 2020). The fact that teachers have important duties and responsibilities in the upbringing of individuals necessitates teacher candidates to be equipped with competencies such as controlling their emotions and producing solutions to the problems encountered (Capri & Celikkaleli, 2008; Lopes et al., 2004). For this reason, emotional intelligence enables clarification as to whether teacher candidates create balance in their lives, whether they are motivated, and whether they accurately manage students' emotions (Cherniss & Goleman, 2001; Clarke, 2006). In a way, emotional intelligence provides teacher candidates with the ability to monitor and observe emotions related to both themselves and their students (Zeidner et al., 2004). In addition, teacher candidates with high and positive emotional intelligence are stated to exhibit skills such as problem-solving, leadership, academic success, and ability to tackle challenges (Asrar-ul-Haq et al., 2017; Mozhan et al., 2013; Preeti, 2013). Some researchers also point out that learning-teaching activity processes correlate with teachers' emotional intelligence (Dolev & Leshem, 2016; Valente et al., 2019).

The development of emotional intelligence depends on personal factors (Andreava, 2019), and the factors that affect the development of emotional intelligence can vary (Grewal & Salovey, 2005). In this context, the development of emotional intelligence may vary depending on various factors such as age, gender, and experience. For instance, there is a widespread belief that women have higher levels of emotional intelligence than men, and individuals' emotional intelligence levels are stated to differ depending on gender (Craig et al., 2009). In this context, there are studies in the literature reporting that women's emotional

intelligence levels are higher than men's (Austin et al., 2005; Brackett et al., 2004; Harrod & Scheer, 2005; Petrides et al., 2004; Sarikabak, 2019) as well as studies that do not demonstrate differences in emotional intelligence scores between men and women (Dawda & Hart, 2000 Megias et al., 2018; Meskhat & Nejati, 2017; Senel, 2015). The fact that women have higher emotional intelligence levels than men is explained by the fact that men can socialize by not revealing their emotions (Haviland-Jones et al., 1997), and women have more developed skills such as empathy and persuasion (Edizler, 2010). Similarly, Ozaslan et al. (2005) attribute the higher emotional intelligence level of women compared to men to women's ability to recognize themselves and manage their emotions; however, Eranil and Ozcan (2019) and Celik and Gungor (2020) attribute it to the differences in the region of residence and socio-cultural characteristics.

This research revealed that the variables with the highest effect on the emotional identification/comprehension dimension were graduated high school, gender, and grade level. In other words, EQ levels on the emotional identification/comprehension dimension of the anatolian and science high school graduates are higher than those of the VTHS graduates. While the emotional intelligence levels of teacher candidates differed according to the type of high school they graduated in some studies (Koksal, 2003; Pektas, 2013), the type of high school they graduated was determined not to cause a difference in some studies (Ozaslan et al., 2020; Seyis, 2011; Tekin Bender, 2006). Unlike the current study, Ozlan (2020) established that the emotional intelligence levels of students graduating from vocational high schools were higher than the emotional intelligence levels of students graduating from science high schools. Ozaslan (2020) explains this result by the fact that students graduating from vocational high schools can express their emotions more openly and take their emotions under control due to the lack of academic pressure on them. Moreover, EQ levels on the emotional identification/comprehension dimension of the 3rd and 1st-grade male students who graduated from VTHS are higher than those of the female teacher candidates studying in the 2nd and 4th grades. Higher intelligence levels in the emotional identification/comprehension dimension of the graduates of anatolian and science high schools compared with those who graduated from VTHS might be related to the curriculum in the education program applied differently according to the school type. However, higher intelligence levels in the emotional identification/comprehension dimension of male teacher candidates and third- and fourth-grade teacher candidates were remarkable. The participants' improved personal development and emotion management skills may explain the higher intelligence levels in the emotional identification/comprehension dimension of the male teacher candidates and the third- and first-grade teacher candidates compared with that of the female teacher candidates and the second- and fourth-grade teacher candidates, respectively. Thus, besides many studies in the literature displaying that the EQ levels of female participants are significantly higher than that of male participants (Austin et al., 2005; Baba, 2012; Brackett et al., 2004; Erdogdu, 2008; Harrod & Scheer, 2005; Nikolaou & Tsaousis, 2002; Turkekul & Sarikabak, 2019), there are also studies reporting higher EQ levels among male participants (Borekci, 2002; Ergin, 2000; Petrides & Furnham, 2000; Tekin, 2009). Some studies have determined that the EQ levels of participants do not differ according to gender (Certel et al., 2011; Karademir et al., 2010; Karaoglu et al., 2016; Taskin et al., 2010; Tingaz, 2013). On the other hand, there are different research results in the literature regarding the existence of a significant difference in the EQ of the participants according to the grade level (Avsar & Kasikci, 2010; Aydin, 2010; Ozdenk, 2018; Yaliz, 2013). The literature shows different results of the emotional intelligence scores of prospective physical education and sports teachers according to grade level. For example, in their studies, Turkekul and Sarikabak (2012) and Senel (2015) found that the emotional intelligence scores of physical education and sports teacher candidates showed a difference according to their grade levels, while in the studies conducted by Asar and Ozyer (2003), Deniz and Yilmaz (2004), and Uyar (2021), it was found that the emotional intelligence scores of teacher

candidates did not differ according to grade levels. The fact that the emotional intelligence scores of teacher candidates are different or similar according to grade levels in the literature is thought to be related to their qualifications and, knowledge and the content of the departments in which they study. Accordingly, the literature partially supports the research results concerning the variables that impact the emotional identification/comprehension dimension.

Another result of the research is that gender is the only significant predictor of the emotional facilitation dimension and the EQ scale as a whole. The EQ levels of male teacher candidates were higher than those of female teacher candidates in both the emotional facilitation dimension and the EQ scale as a whole. In other words, the impact on the emotional facilitation dimension and the EQ scale as a whole varies depending on the participant's gender. Hence, when compared to female participants, male participants are more prone to forget bad memories and are more skilled at coping with their emotions even in an unpleasant job. Nonetheless, the fact that the only constant variable with significant predictiveness in all dimensions of the present research and the whole scale can be interpreted as another remarkable result of the research. Several explanations support this argument in the literature regarding the impact of gender on emotional intelligence. For example, Yarmohammadi and Taghibigloo (2013) noted that gender has a significant impact on emotional intelligence; Salovey and Mayer (1990) that women's EQ scores are higher than men's; and Bar-On (1997) that there is no difference between men and women in terms of emotional intelligence. Therefore, Yesilyaprak (2001) stated that studies on EQ should be planned according to gender differences. In the empirical literature, there are many similar and different research results on whether gender has a significant impact on the EQ score (Austin et al., 2005; Baba, 2012; Brackett et al., 2004; Nikolaou & Tsaousis, 2002; Petrides & Furnham, 2000; Tekin, 2009; Tingaz, 2013). Haviland-Jones et al. (1997) explained this difference in EQ between men and women with socialization processes, while Edizler (2010) explained the feminine paradigm beginning to dominate in today's world and the increase in communication options. When evaluating the theoretical and empirical results as a whole, there is no consensus on the impact of gender on emotional intelligence. However, this research unexpectedly revealed that men's EQ is higher than women's, which is pleasing and promising.

In this study, the most important variables with a significant predictive effect on the emotional regulation dimension were determined to be participation in social-cultural activities, graduated high school, and gender. Accordingly, the intelligence levels on the emotional regulation dimension of those always participating in social-cultural activities are higher than those who never or occasionally participate. On the other hand, intelligence levels on the emotional regulation dimension of the anatolian and science high school graduates declaring no or occasional participation in social-cultural activities were higher than those of VTHS graduates; and intelligence levels on the emotional regulation dimension of the male graduates of VTHS were higher than those of female participants. Indeed, participation in social and cultural activities is expected to impact individuals' emotional regulation intelligence. Participation in social and cultural activities can contribute to individuals' social development and intellectual capital accumulation. This contribution might increase the intelligence level on the emotional regulation dimension, including the skills of managing and controlling emotions. Poskey (2006) links the formation of EQ to the individual's management of their own emotions well; Albrecht (2006) to the development of empathy; Stanley (2010) to the interaction with others; Fall et al. (2013) to intercultural communication with others; Petrides and Furnham (2000) to the establishment of good relations with others; and Faltas (2017) to the social competencies of individuals. Similarly, Bar-On (2006) stated that social skills are the determinants of emotional intelligence. Moreover, the results of certain studies in the literature point to a relationship between social and cultural levels and EQ levels of individuals (Castillo et al., 2013; Loopes et al., 2004; Mayer et al., 1999; Mustaffa et al., 2013; Yip & Martin, 2006). Therefore, this research pointing to the fact that intelligence levels on the emotional regulation

of teacher candidates vary according to their social and cultural activities is supported by theoretical and empirical research in the literature.

LIMITATIONS & RECOMMENDATIONS

This research has its own limitations. The research being conducted only with quantitative data obstructs the determination of the principal reasons underlying the results. Moreover, the research only consists of a certain number of PESTC participants, and no university students from different departments and fields are included in the study, which can be considered another limitation. Despite these limitations, several suggestions can be made to practitioners and researchers. To increase the EQ level in general and the intelligence level in the emotional identification/comprehension dimension in particular, personal development activities of the teacher candidates intended to increase EQ, such as social skills, motivation, empathy, and communication, might be supported. In this respect, participating in conferences, seminars, or workshops given by experts on emotional development, organizing activities such as debates where diverse ideas are debated, and sharing good examples of emotion management can positively affect the emotional development of teacher candidates. The curriculum of VTHS and universities can be updated concerning topics related to emotional intelligence, such as social skills, motivation, empathy, and communication. Universities might organize action plans with the participation of all students, academicians, and administrative staff, with the aim of increasing the EQ of female teacher candidates. Students can be encouraged to participate in social and cultural activities by increasing the number of facilities for social and cultural activities in universities. The researchers may consider remaking the study using qualitative or mixed model methods, analyzing the EQ scores by converting them into categorical variables, including teacher candidates from different departments and fields in the research, examining the variables using binary, sequential, or multiple logistic regression, and conducting the research in foundation universities as well. Thus, the emotional intelligence level of the participants can be examined more comprehensively and more accurately with different analysis techniques. For example, with a logistic regression analysis in which the level of emotional intelligence is the dependent variable, the estimated values of the level of emotional intelligence can be calculated as probability, or a classification analysis can be performed in accordance with probability rules. Similarly, analysis of covariance (ANCOVA), which statistically controls the effect of other variables on emotional intelligence, can be used to determine whether the participants' emotional intelligence levels change according to different variables.

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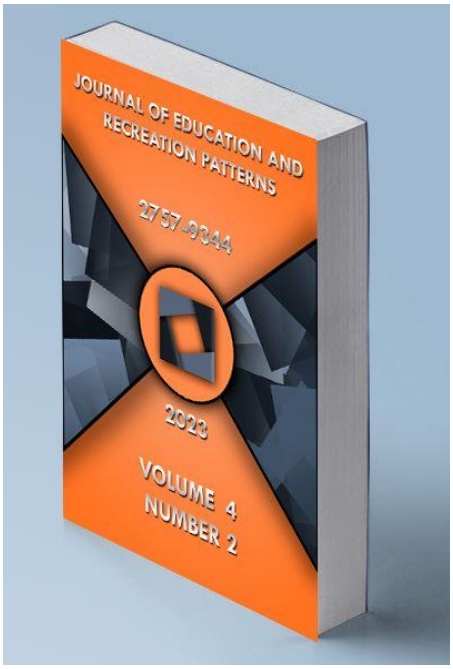
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Musa ŞAHİN[1], Mahmut Esat UZUN[2], Yunus Emre ÇİNGÖZ[3]

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[1]Musa Şahin, Karabük University, High School of Physical Education and Sports, musasahin@karabuk.edu.tr, https://orcid.org/ 0000-0001-9031-3665

[2]Mahmut Esat Uzun, Karabük University, High School of Physical Education and Sports, mahmutuzun@karabuk.edu.tr, http://orcid.org/0000-0001-6304-0227

[3]Yunus Emre Çingöz, Bayburt Üniversity, Sports Science Faculty, yunusemrecingoz@bayburt.edu.tr, https://orcid.org/0000-0002-5702-3997

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An Investigation of the Effects of an 8-Week Zumba Exercise Program on Physical Fitness Components in Sedentary Women

Musa Şahin[1], Mahmut Esat Uzun[2], Yunus Emre Çingöz[3]

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ABSTRACT
This study aimed to investigate the effects of an 8-week Zumba exercise program on weight, body fat percentage (BFP), body muscle mass (BMM), grip strength, back strength, flexibility, and MaxVo2 parameters in sedentary women. Twenty-four women (age: 21.54±1.84, height: 163.75±4.15) who did not engage in regular physical activity and had no history of illness or sports injuries volunteered to participate in the study. The participants were randomly divided into two groups: an experimental group (12 participants) and a control group (12 participants). The experimental group underwent 60-minute Zumba exercises three days a week. Weight, height, BFP, BMM, grip strength (right and left), flexibility, and MaxVo2 were measured. The data were analyzed using SPSS 25 statistical software package. Wilcoxon Test was used for intra-group pre-test and post-test comparisons, and a significance level of $p<0.05$ was accepted. In the experimental group, significant differences were observed in weight, BFP, BMM, flexibility, back strength, and MaxVo2 values between the pre-test and post-test, while there was no statistically significant difference in grip strength (right and left) with $p<0.05$. In the control group, a significant difference was observed in BFP. However, no statistically significant differences were found in weight, BMM, flexibility, grip strength (right and left), back strength, and MaxVo2 with $p<0.05$. In conclusion, based on the results of this study and considering the literature, it can be stated that Zumba exercises, which are widely practiced today, expose individuals to high-intensity physical activity. Consequently, an 8-week Zumba exercise program may positively affect weight, body fat percentage, body muscle mass, MaxVo2, flexibility, and strength parameters.

Keywords: Exercise, Physical Fitness, Strength, Zumba

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INTRODUCTION

A sedentary lifestyle is characterized by prolonged periods of sitting or inactivity, low energy expenditure, and inadequate exercise capacity (Kilinç & Kartal, 2022; Yılmaz, 2019). A sedentary lifestyle has been associated with a range of negative health conditions, including obesity, deterioration, diabetes, metabolic syndrome, and a decline in overall well-being (Kalkavan et al., 2016, Özbakkaloğlu & Demirci, 2003; Yılmaz, 2019).

It is observed that 60% of the adult population worldwide, and two-thirds of the young population, do not engage in sufficient physical activity, with a higher prevalence of physical inactivity among women (Civan, 2021). Particularly, women may be more exposed to the adverse effects of a sedentary lifestyle. Sedentary women typically have low levels of physical activity, which leads to poor physical fitness (Yüksel & Ersoy, 2022). Among sedentary women, there is a risk of obesity due to their low levels of physical activity (Yüksel & Ersoy, 2022). Moreover, a sedentary lifestyle can contribute to various health issues such as muscle loss, osteoporosis, and reduced endurance (Çiçek et al., 2017; Rezende et al., 2015). However, it has been emphasized that to mitigate these negative effects and lead a healthy life, regular physical activity has been shown to bring about positive changes in body composition and positively impact daily life (Vural et al., 2010). Furthermore, research has demonstrated the positive effects of regular physical activity on mental health, stress reduction, and strengthening the immune system (Öztürk, 2021), as well as its association with increased social and psychological well-being (Akyurek et al., 2018). With the contribution of these recommendations, it is essential to promote strategies based on new and engaging activities like dance to increase physical activity among women and bring about positive changes in health and performance.

In this context, the physiological, endocrine, cognitive, and psychological benefits of Zumba dance activities have been explained (Coubard et al., 2011; Duberg et al., 2013; Kattenstroth et al., 2013; Kim et al., 2011; Murrock & Graor, 2014; Shimamoto et al., 1998). It can enhance balance, strength, flexibility, and cardiovascular function, making it recognized as an aerobic exercise (Belardinelli et al., 2008). Zumba dance is an exercise program that originated in Colombia in the 1990s and has since gained significant popularity worldwide (Barranco-Ruiz & Villa-González, 2020). In order to maintain rhythmic movements, which are an integral part of exercise, physical activity is not only a static muscle work, but also requires a certain rhythm and movement pattern (Civan et al., 2022). Scientific studies have demonstrated numerous positive effects of Zumba Fitness on body composition and physical fitness in women. As a result, it is considered a highly successful program for increasing physical activity levels among sedentary women (Barranco-Ruiz & Villa-González, 2020). A literature review has indicated that Zumba Fitness has a promising, albeit small, positive impact on body composition, muscle strength, balance, and quality of life (Barranco-Ruiz &Villa-González, 2020). Additionally, a study examining the effects of Zumba exercises on anthropometric characteristics found that 12 weeks of regular Zumba exercises had a positive impact on anthropometric characteristics in women (Bayrakdar et al., 2020). This study suggests that Zumba exercises can improve body composition and assist with weight management in women (Bayrakdar et al., 2020).

In another study, an experiment was conducted on a group of overweight and obese women living in Malta to assess the performance of an 8-week Zumba dance program. The results showed that the 8-week Zumba program was effective in aiding women in their weight loss journey (Micallef, 2015). Additionally, there is data indicating that Zumba dance enhances women's fitness levels. Given that Zumba dance is a high-energy dance activity, it can be sustained and contribute to an overall improvement in fitness levels (Micallef, 2015).

Finally, it is important to note that while existing evidence indicates positive effects of Zumba Fitness on body composition, mental health, and cardiovascular health, there is a lack of direct research focusing specifically on the impact of Zumba Fitness on physical fitness. Therefore, there is a need for more research specifically examining the effects of Zumba Fitness on physical fitness. Consequently, the aim of this study is to investigate the effects of an 8-week Zumba exercise program on weight, body fat percentage (BF%), body muscle mass (BMM), grip strength, back strength, flexibility, and MaxVo2 parameters in sedentary women. With this study, the goal is to recommend fitness-oriented exercise training for sedentary women and, in turn, enhance fitness effectiveness.

This study is structured around the following hypotheses:

Hypothesis 1: The results of Zumba exercise programs applied to sedentary women are effective in terms of weight, body fat percentage (BF%), and body muscle mass (BMM).

Hypothesis 2: The results of Zumba exercise programs applied to sedentary women are effective in terms of grip strength.

Hypothesis 3: The results of Zumba exercise programs applied to sedentary women are effective in terms of back strength.

Hypothesis 4: The results of Zumba exercise programs applied to sedentary women are effective in terms of flexibility.

Hypothesis 5: The results of Zumba exercise programs applied to sedentary women are effective in terms of MaxVo2.

These hypotheses serve as the foundation for the research and aim to assess the impact of an 8-week Zumba exercise program on various physical fitness parameters in sedentary women.

METHOD

Study Design

Before the 8-week Zumba exercise program, the participant's height, weight, Body Fat Percentage (BFP), Body Muscle Mass (BMM), grip strength, back strength, flexibility, and Maximal Oxygen Consumption (MaxVO2) values were recorded. The participants engaged in an eight-week exercise program consisting of 60-minute sessions three days per week. After eight weeks, measurements for height, weight, BFP, BMM, grip strength, back strength, flexibility, and MaxVO2 were retaken.

Participants

This study included 24 female volunteers (age: 21.54±1.84, height: 163.75±4.15) who were enrolled at Hasan Dogan School of Physical Education and Sports at Karabük University. They were non-athletes and had no history of any diseases or sports-related injuries. The participants were randomly assigned to the experimental group (12 participants) and the control group (12 participants). The participants in the study were not applied any nutrition program for 8 weeks and were asked to continue their eating habits as they were. Informed consent forms were provided to the participants, explaining the risks and benefits of the study, and their approval was obtained. All measurements were conducted following the Helsinki Declaration. The ethical committee of Bayburt University approved all procedures of this study on May 26, 2023, with decision number 202.

Data Collection Tools

Height, Weight, and Body Composition Measurements

The body composition values of the participants in the study were assessed using a bioelectrical impedance analyzer (InBody 120, Biospace, California, USA) with a sensitivity of 0.01 kg. Body composition analysis provides precise measurements of bone mass, body water, and muscle mass, as well as the measurement of fat content for specific body segments. This is achieved by passing a low electrical current through the body via electrodes that come into contact with the hands and feet (Czartoryski et al., 2020). Height measurement was taken in centimeters with participants standing barefoot on a firm, flat surface.

Hand Grip and Back Strength Measurements

Hand grip strength was measured using the Takkei brand hand dynamometer. Back strength was measured using the Takkei brand back and leg dynamometer.

Flexibility Measurement

The flexibility of the participants was measured using the Sit and Reach test. Participants sat on the Sit and Reach box, and with their hands extended forward, they bent their bodies forward without bending their knees, reaching the furthest point possible. The measurement value was recorded after a 1-2 second hold at the maximum point.

MaxVO2 Measurement

The maximal oxygen utilization capacity of the subjects was determined by applying the Bruce Test Protocol, which is the most commonly used clinical exercise test and is performed by increasing the incline and speed in 3-minute periods. According to this protocol, the run starts with a speed of 2.7 km/h and 10% incline and the speed and incline increase every 3 minutes. Subjects' reaching maximal heart rate (220-h), respiratory exchange coefficient exceeding 1,1 or fatigue to the point of not being able to continue the test were considered as criteria for termination of the test. Oxygen consumption of the subjects was monitored by indirect calorimetry (Cosmed Fitmate) and maxVO2 value was determined. Respiratory exchange ratio (RER) indirectly from VO2 and carbon dioxide elimination (VCO2) values measured and recorded directly in all stages of the test calculated. Calculations were performed simultaneously with the measurements using programs available in the K4 b2 portable indirect calorimeter software. Before starting the tests, the analyzer was calibrated each test day with a certified gas mixture of known concentration (O2= 15.6%, CO2= 4.1%, N2= Balance), 3L syringe as recommended by the manufacturer. Testler sırasında oksijen analizörünün hafızasına kaydedilen veriler bilgisayara aktarıldı. Data recorded in the oxygen analyzer's memory during the tests transferred to the computer (Çamçakallı, 2010).

Zumba Exercise Program

In the research group, a complex choreography consisting of various dance movements accompanied by different music genres was applied as Zumba exercise three days a week, at an intensity of 50% to 60% of the target heart rate, for a duration of 60 minutes (including warm-up and cool-down) (Lukic, 2006). Each Zumba exercise session consisted of 8-10 minutes of warm-up exercises with Zumba music at 90-100 bpm and 70-80 bpm cool-down exercises. The central part of the exercise lasted for 50 minutes and included Zumba Basic 1 steps (merengue, salsa, samba, cha cha cha, reggaeton, cumbia, oriental, belly dance, etc.). During the central part, original Zumba music was used for 3-4 minutes, with 15-30 seconds of rest between music changes (Ljubojević et al., 2014).

Ethics Committee Permission

This article adheres to research and publication ethics principles, journal writing rules, and publication standards. Any potential ethical violations associated with this article rest solely with the authors. This study received ethics committee approval, Dated 18.05.2023 and numbered E-15604681-100-133618 from the Bayburt University Ethics Committee.

Statistical Analysis

The data obtained were obtained using the SPSS 25 statistical package program. Shapiro Wilk-W test was used to determine whether the data showed normal distribution and it was determined that the data did not show normal distribution. The Wilcoxon Test was used for in-group pre-test and post-test comparisons and the significance level was accepted as $p<0.05$.

FINDINGS

Anthropometric characteristics, claw strength, back strength, flexibility and VO2 Max values of sedentary women participating in the study were analyzed according to pre-test and post-test values.

Table 1. Age and Height Values of the Participants

Groups	Age (years)	Length (cm)
Experiment (n:12)	21,25±2,17	163,75±4,15
Control (n:12)	21,83±1,46	165,58±4,56
The whole group (n:24)	21,54±1,84	164,67±4,37

When Table 1 is examined, the mean age of the experimental group was found to be 21.25±2.17 years, and the height was 163.75±4.15 cm, while the mean age of the control group was 21.83±1.46 years, and the height was 165.58±4.56 cm. The combined mean age and height of the experimental and control groups were 21.54±1.84 years and 164.67±4.37 cm, respectively.

Table 2. Weight, BFP, BMM Values of the Participants

Variables	Group	Pre-Test	Post-Test	Z	*P*
		Mean±Sd.			
Weight (kg)	Experiment	56,79±5,56	55,28±5,33	*-2,99*	*0,00**
	Control	57,74±4,13	58,08±4,48	-0,82	0,40
BFP (%)	Experiment	24,25±6,00	23,18±6,18	*-2,04*	*0,04**
	Control	27,72±5,38	28,43±5,48	-1,96	0,05*
BMM (kg)	Experiment	23,00±1,92	23,79±1,84	*-2,55*	*0,01**
	Control	22,44±2,16	22,21±1,96	-0,74	0,45

$p<0.05$

In Table 2, the findings related to weight, BFP (Body Fat Percentage), and BMM (Body Muscle Mass) values of the participants are presented: 1. Weight (kg): • In the experimental group, there was a statistically significant decrease in weight from the pre-test (56.79 ± 5.56 kg) to the post-test (55.28 ± 5.33 kg) with a Z-score of -2.99 (p=0.00*). In the control group, there was no statistically significant change in weight from the pre-test (57.74 ± 4.13 kg) to the post-test (58.08 ± 4.48 kg) with a Z-score of -0.82 (p=0.40). Body Fat Percentage (%): In the experimental group, there was a statistically significant decrease in BFP from the pre-test (24.25 ± 6.00%) to the post-test (23.18 ± 6.18%) with a Z-score of -2.04 (p=0.04*). In the

control group, there was a statistically significant increase in BFP from the pre-test (27.72 ± 5.38%) to the post-test (28.43 ± 5.48%) with a Z-score of -1.96 (p=0.05*). Body Fat Percentage (%): In the experimental group, there was a statistically significant increase in Body Muscle Mass from the pre-test (23.00 ± 1.92 kg) to the post-test (23.79 ± 1.84 kg) with a Z-score of -2.55 (p=0.01*). In the control group, there was no statistically significant change in Body Muscle Mass from the pre-test (22.44 ± 2.16 kg) to the post-test (22.21 ± 1.96 kg) with a Z-score of -0.74 (p=0.45).

Table 3. Paw Strength, Back Strength, Flexibility and VO2 Max Values of the Participants

Variables	Group	Pre-Test	Post-Test	Z	*P*
		Mean±Sd.			
Right Hand Claw	Experiment (n:12)	31,79±4,26	31,55±4,16	*-0,23*	*0,81*
	Control (n:12)	30,31±2,93	30,45±2,81	*-0,51*	*0,60*
Left Hand Claw	Experiment (n:12)	30,20±4,28	30,56±4,68	*-1,45*	*0,14*
	Control (n:12)	29,84±1,82	29,73±1,76	*-0,07*	*0,93*
Back Strength	Experiment (n:12)	83,75±20,79	102,50±24,54	*-2,82*	*0,00**
	Control (n:12)	82,91±21,79	89,58±15,14	*-1,91*	*0,05*
Flexibility	Experiment (n:12)	29,83±2,62	32,08±2,10	-2,73	0,00*
	Control (n:12)	30,50±2,74	29,66±3,14	-1,31	0,18
VO2 Max	Experiment (n:12)	40,44±4,62	42,44±3,12	-2,27	0,02*
	Control (n:12)	39,17±4,42	38,70±3,89	-0,23	0,81

p<0.05

Tablo 3 has been examined, and no statistically significant difference has been observed between the pre-test values (mean ± standard deviation) and post-test values in the experimental group for the right paw (pre-test: 31.79±4.26, post-test: 31.55±4.16) with a Z-score of -0.23 (p=0.81). Similarly, in the control group, no statistically significant difference was observed for the right paw (pre-test: 30.31±2.93, post-test: 30.45±2.81) with a Z-score of -0.51 (p=0.60). For the left paw values, no statistically significant difference has been observed between the pre-test (mean ± standard deviation) and post-test values in the experimental group (pre-test: 30.20±4.28, post-test: 30.56±4.68) with a Z-score of -1.45 (p=0.14). Likewise, in the control group, no statistically significant difference was observed for the left paw (pre-test: 29.84±1.82, post-test: 29.73±1.76) with a Z-score of -0.07 (p=0.93*). As for the back values, there has been a statistically significant increase in the experimental group between the pre-test (mean ± standard deviation) and post-test values (pre-test: 83.75±20.79, post-test: 102.50±24.54) with a Z-score of -2.82 (p=0.00*). However, no statistically significant difference has been observed in the control group (pre-test: 82.91±21.79, post-test: 89.58±15.14) with a Z-score of -1.91 (p=0.05). Regarding flexibility, there has been a statistically significant increase in the experimental group between the pre-test (mean ± standard deviation) and post-test values (pre-test: 29.83±2.62, post-test: 32.08±2.10) with a Z-score of -2.73 (p=0.00*). In contrast, no statistically significant difference has been observed in the control group (pre-test: 30.50±2.74, post-test: 29.66±3.14) with a Z-score of -1.31 (p=0.18). Finally, for VO2 Max, there has been a statistically significant increase in the experimental group between the pre-test (mean ± standard deviation) and post-test values (pre-test: 40.44±4.62, post-test: 42.44±3.12) with a Z-

score of -2.27 (p=0.02*). However, no statistically significant difference has been observed in the control group (pre-test: 39.17±4.42, post-test: 38.70±3.89) with a Z-score of -0.23 (p=0.81).

DISCUSSION

When reviewing similar studies in the literature, it has been found that the Zumba exercise program has several positive effects on body composition and physical fitness in women. Consequently, the Zumba exercise program has been reported to increase the physical activity levels of sedentary women and is considered a successful program (Barranco-Ruiz &Villa-González, 2020).

Table 2 presents the findings regarding the weight, BFP (Body Fat Percentage) and BMM (Body Muscle Mass) values of the participants in our findings: 1. Weight (kg): • In the experimental group, there was a statistically significant decrease from pretest (56.79 ± 5.56 kg) to posttest (55.28 ± 5.33 kg) with a Z-score of -2.99 (p=0.00*). In the control group, there was no statistically significant weight change from pretest (57.74 ± 4.13 kg) to posttest (58.08 ± 4.48 kg) with a Z-score of -0.82 (p=0.40). Body Fat Percentage (%): In the experimental group, there was a statistically significant decrease in BFP from pretest (24.25 ± 6.00%) to posttest (23.18 ± 6.18%) with a Z-score of -2.04 (p=0.04*). In the control group, there was a statistically significant increase in BFP from pretest (27.72 ± 5.38%) to posttest (28.43 ± 5.48%) with a Z-score of -1.96 (p=0.05*). Body Fat Percentage (%): In the experimental group, there was a statistically significant increase in Body Muscle Mass from pretest (23.00 ± 1.92 kg) to posttest (23.79 ± 1.84 kg) with a Z-score of -2.55 (p=0.01*). In the control group, there was no statistically significant change in Body Muscle Mass from pretest (22.44 ± 2.16 kg) to posttest (22.21 ± 1.96 kg) with a Z-score of -0.74 (p=0.45).

The literature reviews have indicated that Zumba Fitness has shown promising but positive effects on body composition, muscle strength, balance, and quality of life (Barranco-Ruiz & Villa-González, 2020). In another study, it was found that 12 weeks of regular Zumba exercises had a positive impact on anthropometric features in women (Bayrakdar et al., 2020). In another study, an experiment was conducted on a group of overweight and obese women in Malta to assess the performance of 8 weeks of Zumba dancing. The results showed that 8 weeks of Zumba was effective in the weight loss process for women (Micallef, 2015). They also investigated the effect of 8 weeks of Zumba exercises on the fitness levels of women and reported a significant decrease in weight and body fat percentages among sedentary women after the exercise program (Oktay, 2015). They examined the effect of Zumba exercises on women's body composition and observed a significant decrease in body weight and fat percentage after the exercise program (Ljubojević et al., 2014). These findings are consistent with the effects of our study on body composition.

In our study, the pre-test and post-test values for handgrip strength (both right and left) did not show a statistically significant difference in both the experimental and control groups. However, for back strength, flexibility, and VO2 Max, there was a statistically significant difference in pre-test and post-test values in the experimental group (Table 3).

Studies that have examined the effects of Zumba exercises on handgrip strength in the literature have reported similar findings to your study. For example, a study conducted over 12 weeks of Zumba exercise found no significant difference in handgrip strength in women (Cugusi et al., 2015). Similarly, another study that investigated 8 weeks of Zumba exercise did not find a significant difference in handgrip strength (Oktay, 2018). These findings are consistent with the lack of significant effects on handgrip strength observed in your study.

In studies examining the effects on flexibility, back strength and maximal oxygen consumption (VO2max), a study on 8-week Zumba exercise found a significant increase in

maximal oxygen consumption, flexibility and back strength (Oktay, 2018), In an 8-week Zumba exercise program, he investigated the effects of Zumba and exercise exercises on physical fitness parameters in young women and found that there was a significant increase in flexibility and leg strength after the exercise program (Ağaoğlu, 2019), Zumba exercises significantly increased VO2max levels (Suminar et al., 2018), Luettgen, Foster, Doberstein, Mikat and Porcari (2012) also reported a significant increase in MaxVo2 levels thanks to Zumba exercises. When examining the effects of Zumba exercise on maximal oxygen consumption (VO2max), Krishnan et al. (2015) reported a 7.1% improvement after 16 weeks of Zumba exercise. Donath et al. (2014) reported a significant 21% increase in VO2max in the 6-minute walk test, a field test, after Zumba exercise. There is also data that Zumba dance improves women's fitness. Since Zumba dance is a high-energy dance activity, it can be kept and general fitness level can be increased (Micallef, 2015). Our findings are in line with the results in the literature.

Conclusion

In conclusion, an 8-week Zumba exercise program has been found to have positive effects on weight, body fat percentage, body muscle mass, MaxVO2, flexibility, and strength parameters.

In light of all this information, based on our study and literature review, it is evident that individuals participating in Zumba dancing, being exposed to a high-energy dance activity, experience positive effects on their health. Furthermore, it has been scientifically proven that Zumba dancing not only helps prevent high weight and body fat percentage in sedentary women but also improves their fitness levels (body muscle mass, back strength, flexibility, and MaxVO2). Therefore, it is suggested that all sedentary women consider engaging in this dance regularly. Future research may explore whether Zumba dancing has effects beyond physical fitness, such as on the immune system and autophagy.

Limitations and Recommendations

This study was limited to a total of 24 sedentary women, 12 in the experimental group and 12 in the control group, with an average age of 21 years, who did zumba exercise for 8 weeks and 3 days a week. It is thought that increasing the number of participants and conducting studies investigating the effects of exercise in different age, gender and different dance types will contribute to sports science.

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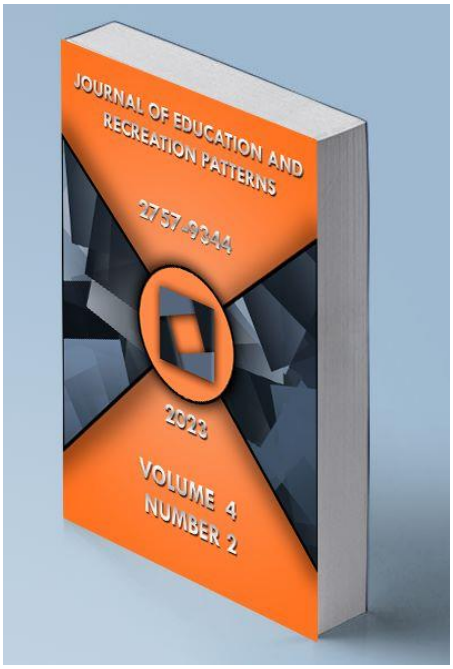
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Abdullah Sencer Temel[1]

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[1] Abdullah Sencer Temel, Konya Şeker Industry and Trade Co., email, sencer_temel@yahoo.com,
https://orcid.org/0000-0003-0382-9466

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A Research on the Dynamics Between Perceived Income Level, Leisure Activities, and 21st Century Skills Among Young University Adults

Abdullah Sencer Temel [1]

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ABSTRACT

The objective of this study is to examine the method in which young adults determine their leisure preferences, taking into consideration variables such as income level, gender ender, and availability of free time, and to investigate the potential associations between these characteristics and their ability in 21st-century skills. In this study, correlational research methodology was used to examine the impact of income levels, daily leisure time, 21st-century skill levels, and gender on the recreational activity preferences of university students. A total of 366 students from Necmettin Erbakan University were selected as a representative sample through face-to-face questionnaires, aiming to capture the characteristics of the full population. The data collection instruments comprised of a participant form and the "Multidimensional 21st Century Skills Scale." Recreational activities were classified into various categories. The research employed a multiple logistic regression analysis to forecast individuals' preferences for recreational activities, while considering factors such as income levels, daily leisure time, 21st-century skills, and gender. The results of the research showed that the significant impact of gender on individuals' preferences concerning sports, touristic, leisure, cultural, and artistic activities. In conclusion, this study highlights the factors that affect the recreational activity choices of university students, emphasizing the importance of 21st-century skills and other demographic variables in understanding these choices. This knowledge has the potential to provide insights into the development of initiatives aimed at encouraging a wide range of engaging recreational activities among young adults.

Keywords: 21st Century, Recreation, Sport Activities, University Adults, Young

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INTRODUCTION

Considering the development of technology and shifting lifestyles, emphasis has been placed on the importance of how young adults spend their free time. Recreational activities provide a variety of purposes, such as promoting young adults' personal growth and development, lowering stress levels, and offering chances for pleasurable experiences (Brown et al., 2021). The current literature lacks a comprehensive understanding of the diverse factors influencing the leisure preferences of young individuals, as well as the intricate interrelationships among these elements (Lee et al.,2019). The objective of this article is to analyze the process by which young individuals make decisions regarding their leisure preferences, considering many criteria such as income level, gender, and accessible leisure time. Additionally, this study seeks to investigate the potential correlation between these aspects and the development of 21st century abilities among young adults. Furthermore, clarifying the impact of these relationships on the career planning and financial situations of young adults, as well as addressing the existing gaps in the literature, will provide valuable insights for future researchers and decision-makers. This will contribute to a greater understanding and support of this important stage in the lives of young adults, thereby guiding them effectively.

The period of young adulthood is an important period characterized by significant influence on personal growth and subsequent outcomes (Arnett et al., 2007). The investigation of the correlations among the perceived income level, leisure activities, and 21st century skills among young adults holds significant value in understanding and guiding this phase, particularly in relation to workforce entry, career choices, financial decisions, and personal development (Brown et al., 2009). The income level of young adults holds significant importance in assessing their financial well-being and living standards. The socioeconomic status of individuals can have a significant impact on the lifestyles, buying habits, and financial independence of young adults. It can determine the availability of resources, access to quality education, and job prospects, ultimately influencing their buying habits and level of financial independence, which in turn affect their overall well-being and life choices. In this particular context, it is crucial to investigate the potential correlation between the perceived income level among young adults and their engagement in leisure activities, as well as their development of 21st century skills (Özcan, 2018). Leisure activities include a range of activities that have the potential to impact the personal growth, social ability, and mental well-being of young adults. Various recreational activities have the potential to impact the life satisfaction, motivation, and overall well-being of young adults (Johnson, 2019).

In today's global context, the rapid advancement of information and communication technologies (ICTs) has led to ongoing transformations in various domains, including daily life, corporate practices, school culture, and learning environments (Hodgkinson et al., 2019). Occupations requiring physical labor and repetitive activities have decreased over time, while those demanding mental effort have increased (Voogt & Roblin, 2012). The term "21st century skills" is commonly used to refer to a set of knowledge, abilities, and characteristics that play an essential role in individuals' ability to successfully navigate and shape their future. While there may be variations in how these skills are described by different scholars (Marbach-Ad, Hunt, & Thompson, 2019), It brought together an extensive range of knowledge (McGunagle & Zizka, 2020). The obtaining and distribution of these abilities have become increasingly significant, particularly in the post-2000 era. It is necessary to have these skills in order to be an effective citizen, student in the information society or an effective employee in the business world (Siddiq, Gochyyev & Wilson, 2017). The learning and use of 21st century skills is crucial for young adults in a fast-changing era that includes dynamic changes in information, communication, and technology (Salmi et al., 2018). The learning of skills such as critical thinking, problem solving, teamwork, creativity, and digital literacy has significant importance

for the success of young adults in various areas, including the commercial world, studies, and relationships with others (Cabezas et al.,2018). The 21st century has been a period of rapid social change and movements, and the idea of education has radically transformed during this period. In a period of scientific and technological advances, socio-political changes encouraging global private liberty, efforts to enhance social well-being, and increased worldwide competition, the subject of education has consistently held significant importance (Tutkun, 2010). When examining education systems as a dynamic process, one can observe the occurrence of changes and innovations. Specifically, there is a growing connection between educational content and everyday life. Instead of using a knowledge-centric strategy, this educational approach emphasizes the development of individuals who possess the capacity to quickly obtain information and effectively use it in practical contexts. The significance of individuals who possess the ability to effectively employ knowledge across every aspect of life is on the rise (Oğuz et al., 2010). In modern times, individuals are not solely required to commit information to memory, but are also expected to develop competence in swiftly accessing distributing, and efficiently using information. In order to achieve this objective, it is essential for individuals to show concern and develop these skills (Hamarat, 2019). In order for individuals to actively engage in the current business world of the 21st century, just basic knowledge and academic achievements are insufficient. In order to successfully meet the needs of the 21st century, it is important for individuals to possess a set of capabilities sometimes referred to as "21st century skills". These skills extend beyond the fundamental abilities required to tackle the challenges of the contemporary era (Eryılmaz & Uluyol, 2015). These competencies generally stand out under categories such as entrepreneurship, information technology literacy, critical thinking and problem solving, creativity and innovation, cooperation and communication ability, leadership and responsibility, flexibility and adaptation (Uçak & Erdem, 2020). In the 21st century, it is important for individuals to demonstrate productivity by effectively obtaining and using existing information, aiming to go over established knowledge borders, taking part in new knowledge exploration, distributing leisure time carefully, participating in various activities, and generating outputs. This is preferable to adopting a restricted and myopic mindset (Elverdi, 2011). Within the present environment, this study examines the relationship between perceived income level and 21st century abilities among young individuals. There is a predicted correlation between the perceived income levels of young adults and their involvement in leisure activities, as well as the development of 21st century skills. Further investigation is required to develop a complete understanding of the impact of variables such as gender, income level, and duration of leisure time on the leisure preferences of young people, as well as the connections among these variables. Existing research on this subject, which have all been reviewed, have mainly addressed these factors with one-dimensional approaches and have not thoroughly investigated the links. As a result, the need for more comprehensive study becomes clear. This study will analyze the factors influencing young adults' leisure preferences in a more detailed and holistic manner, considering the limitations of previous research. In this way, it will help us better understand the impact of factors such as gender, income level and leisure time on these preferences and create a more comprehensive knowledge on this subject. The findings of this study will additionally contribute to the enhanced development of recreational programs targeting young adults, facilitating more efficient and enjoyable usage of their leisure time. Based on this, this study seeks to determine how much economic status, gender, and free time availability influence young adults' leisure preferences, and whether there are any relationships between these factors and an individual's ability to perform well in 21st-century skills.

METHOD

Research Model

This study employed a correlational design to investigate the influence of income levels, daily free time, 21st century skill levels, and gender on the recreational activity preferences of university students, referred to as young adults (Marzilli et al., 2022).) Correlational study refers to a type of investigation that aims to explore the existing association between two or more variables without any manipulation or intervention in these variables (Büyüköztürk, 2018).

Population and Sample

The study's target population includes the individuals associated with Necmettin Erbakan University. To ensure an accurate representation of the entire universe, the sampling approach employed was simple random sampling. To ensure the representativeness of the sample group in relation to the larger population, data was collected through a face-to-face survey approach. The survey was sent out to a total of 366 students who are enrolled in various programs throughout both the core campus and other satellite locations of the university. The descriptive statistics findings for the participants are displayed in Table 1.

Table 1. Descriptive Statistics Results for Participants

Variables		**f**	**%**
Gender	Female	249	68.0
	Male	117	32.0
Perceived Income Level	Low	31	8.5
	Normal	228	62.3
	High	107	29.2
Leisure Time (Daily)	Never spend time	30	8.2
	Less than 1 hour	77	21.0
	1-2 hours	162	44.3
	3-4 hours	75	20.5
	4 hours and above	22	6.0
Recreational Activity Preference	Sporty	113	30.09
	Social	31	8.5
	Touristy	81	22.1
	Rest	50	13.7
	Cultural	23	6.3
	Art	68	18.6

Data Collection Tools

The data gathering instruments used for the study were the ‘’Participant Form’’ and the "Multidimensional 21st Century Skills Scale." The participant form includes many categories such as gender, perceived economic level, daily free time, and recreational activity preferences.

The broad range of recreational activities covers multiple arenas, as evidenced by scholarly sources (Aksu & Varol, 2022; Aksu et al., 2022). These activities can be categorized into sportive interests such as football, basketball, swimming, tennis, and fitness, as well as social engagements through associations, non-governmental organizations, communities, and foundations. Additionally, recreational activities extend to touristic activities, that includes excursions, holidays, and travel experiences. Furthermore, there are recreational activities designed to promote physical and mental well-being, referred to as recreation, and cultural activities involving historical works, museums, and exhibitions. Lastly, artistic expressions such as painting, music, literature, and theater also form part of the diverse landscape of recreational activities. The second data collection tool is the "Multidimensional 21st Century Skills Scale". The scale developed by Çevik and Şentürk (2019) consists of 41 items and 5 sub-dimensions. The sub-dimensions are "Information and Technology Literacy (Article; 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15)", "Critical Thinking and Problem-Solving Skills", respectively. (Article; 16,17,18,19,20,21)", "Entrepreneurship and Innovation Skills (Article 22,23,24,25,26,27,28,29,30,31)", "Social Responsibility and Leadership Skills (Article 32,33,34,35)" and "Career Awareness (Article; 36,37,38,39,40,41)". Items 16, 17, 18, 19, 20, 21 and 35 in the scale were reverse coded. The scale, which has a 5-point Likert rating criterion, has the options "1- Strongly Agree, 5- Strongly Disagree". In the process of scale development, the internal consistency coefficient for the overall scale was found to be α= 0.86. For the specific sub-dimensions, the internal consistency coefficients were as follows: "Information and Technology Literacy" had an α= 0.84, "Critical Thinking and Problem-Solving Skills" had an α= 0.79, "Entrepreneurship and Innovation Skills" had an α= 0.76, "Social Responsibility and Leadership Skills" had an α= 0.73, and "Career Consciousness" had an α= 0.75. In this study, the internal consistency coefficient was α= 0.91 for the overall scale, and α= 0.92 for the sub-dimensions of "Information and Technology Literacy"; "Critical Thinking and Problem-Solving Skills" α= 0.88; "Entrepreneurship and Innovation Skills" α= 0.89; "Social Responsibility and Leadership Skills" is α= 0.45 and "Career Consciousness" is α= 0.84.

Data Analysis

The study employed multiple logistic regression analysis using ''Jamovi'', an open-source software application, to examine the predictive effect of individuals' income levels, daily free time, 21st century skill levels, and gender (predictive factors) on their recreational activity choices (outcome variable). Before undertaking the research, an assessment was made about the lack of outliers and the fulfillment of multicollinearity assumptions. In order to control extreme values, the z scores of the predictor variables were examined and no values within the range of ±3 were found. Furthermore, the observation that the Variance Inflation Factor (VIF) values of the predictor variables were below 10 and the Tolerance values exceeded 0.2 provided evidence that there was no multicollinearity problem.

FINDINGS

The results of the multiple logistic regression analysis performed after checking that the assumptions were adequately met are shown in Table 2. The model obtained as a result of the multiple logistic recreation analysis is shown in Table 2. It was determined that all of the predictive variables in the model significantly predicted individuals' recreational activity preferences [$X^2(6) = 85.3$, $*p<0.05$]. The comprehensive model, including all predictive factors, explains 8% of the variance in individuals' preferences to participate in alternative leisure activities over sports recreation activities, as measured by Nagelkerke's R2.

Table 2. Multiple Logistic Regression Analysis on Young Adults' Recreational Activity Preference

Recreational activity preference	Predicted Variable	B	Sh	z	p	Likelihood Ratio	Confidence Interval (%95)	
							Sub	Up
Social-Sporty	**Stable**	**-3.97**	**2.325**	**-17.115**	**0.087**	**0.01**	**1.96e-4**	**1.782**
	Perceived Income	-3.97	0.372	-0.7689	0.442	0.75	0.3626	1.557
	Daily Leisure Time	-0.28	0.218	0.4076	0.684	1.09	0.7130	1.675
	Information and Technology Literacy Skills	0.08	0.596	-0.7735	0.439	0.63	0.1960	2.029
	Critical Thinking and Problem Solving	-0.46	0.331	0.0431	0.966	1.01	0.5306	1.939
	Entrepreneurship and Innovation	0.01	0.474	0.8162	0.414	1.47	0.5815	3.728
	Social Responsibility and Leadership	0.38	0.477	-0.3439	0.731	0.84	0.3330	2.163
	Career Consciousness	-0.16	0.563	1.7484	0.080	2.67	0.8877	8.069
	Gender (being a woman)	0.98	0.450	-1.2376	0.216	0.57	0.2372	1.384
Touristic-Sporty	**Stable**	**1.42**	**1.540**	**0.9258**	**0.355**	**4.16**	**0.2034**	**85.127**
	Perceived Income	-0.23	0.261	-0.8884	0.374	0.79	0.4750	1.323
	Daily Leisure Time	-0.28	0.156	-18209	0.069	0.75	0.5547	1.022
	Information and Technology Literacy Skills	-0.30	0.389	-0.7907	0.429	0.73	0.3428	1.576
	Critical Thinking and Problem Solving	0.18	0.251	0.7434	0.457	1.20	0.7368	1.972
	Entrepreneurship and Innovation	-0.05	0.322	-0.1565	0.876	0.95	0.5064	1.786
	Social Responsibility and Leadership	0.02	0.344	0.0797	0.936	1.02	0.5241	2.016
	Career Consciousness	0.15	0.360	0.4292	0.668	1.16	0.5766	2.362
	Gender (being a woman)	-0.89	0.324	-2.7611	**0.006**	0.40	0.2168	0.772
Recreational - Sporty	**Stable**	**2.45**	**1.915**	**1.2842**	**0.199**	**11.69**	**0.2742**	**498.808**
	Perceived Income	-0.58	0.312	-1.8797	0.060	0.55	0.3013	1.025
	Daily Leisure Time	-0.25	0.185	-1.4003	0.161	0.77	0.5377	1.109
	Information and Technology Literacy Skills	-1.05	0.483	-2.1903	**0.029**	0.34	0.1347	0.895
	Critical Thinking and Problem Solving	0.11	0.316	0.3721	0.710	1.12	0.6059	2.087
	Entrepreneurship and Innovation	-0.12	0.384	-0.3318	0.740	0.88	0.4148	1.868
	Social Responsibility and Leadership	-0.31	0.398	-0.7920	0.428	0.72	0.3344	1.592
	Career Consciousness	1.11	0.441	2.5168	**0.012**	3.03	12.785	7.210
	Gender (being a woman)	-1.70	0.457	-3.7330	**< .001**	0.18	0.0742	0.445
Cultural-Sporty	**Stable**	**1.08**	**2.346**	**0.4627**	**0.644**	**2.96**	**0.0298**	**293.960**
	Perceived Income	-0.55	0.410	-1.3641	0.173	0.57	0.2557	1.277
	Daily Leisure Time	0.15	0.246	0.6333	0.527	1.16	0.7213	1.894
	Information and Technology Literacy Skills	-0.24	0.608	-0.3954	0.693	0.78	0.2388	2.589
	Critical Thinking and Problem Solving	0.35	0.389	0.9023	0.367	1.42	0.6624	3.049
	Entrepreneurship and Innovation	0.23	0.517	0.4597	0.646	1.26	0.4607	3.490
	Social Responsibility and Leadership	-0.83	0.505	-1.6556	0.098	0.43	0.1610	1.166
	Career Consciousness	0.13	0.550	0.2532	0.800	1.14	0.3911	3.379
	Gender (being a woman)	-1.40	0.575	-2.4416	**0.015**	0.24	0.0797	0.758
Art- Sporty	**Stable**	**0.56**	**1.750**	**0.3207**	**0.748**	**1.75**	**0.0567**	**54.170**
	Perceived Income	-0.56	0.290	-1.9382	0.053	0.56	0.3225	1.006
	Daily Leisure Time	-0.06	0.171	-0.3779	0.706	0.93	0.6709	1.310
	Information and Technology Literacy Skills	-0.05	0.438	-0.1304	0.896	0.94	0.4002	2.229
	Critical Thinking and Problem Solving	-0.54	0.288	1.8851	0.059	1.72	0.9787	3.023
	Entrepreneurship and Innovation	-0.03	0.353	-0.1069	0.915	0.96	0.4817	1.925
	Social Responsibility and Leadership	-0.76	0.360	-2.1127	**0.035**	0.46	0.2307	0.947
	Career Consciousness	0.52	0.400	1.3185	0.187	1.69	0.7737	3.711
	Gender (being a woman)	-2.00	0.442	-4.5465	**< .001**	0.13	0.0565	0.319

Deviance= 1133; R^2(Nagelkerke's) = 0.089; $X^2(6) = 85.3$, *p<0.05

The objective of this study was to examine the association between recreational activity choices among young adults and a range of characteristics using multiple logistic regression analysis. The results of this study offer valuable insights into the statistical importance of many variables that influence preferences for recreational activities. Analysing the significance of

regression coefficients pertaining to predictive variables influencing individuals' preference for tourist recreation activities over sporting recreational activities, it was determined that only the gender variable ($z=-2.7611$, $p<0.05$) exhibited statistical significance. Thus, it can be concluded that gender (specifically, females) significantly influences individuals' choice of opting for tourist activities over sports-related pursuits.

Upon analyzing the importance of regression coefficients in relation to individuals' preferences towards relaxation and sporting recreational activities, it was determined that career consciousness ($z=2.5168$), information and technology literacy skills ($z=-2.1903$), and gender ($z=-3.7330$) arose as statistically significant predictors, as indicated by their respective levels of prediction. Regarding career consciousness, it was found that individuals' likelihood of preferring relaxation activities is significantly influenced by their level of career consciousness. In other words, a one-unit increase in individuals' average career consciousness scores. Their odds (odds ratio) of engaging in relaxation activities instead of sporting recreational activities. Furthermore, as individuals' information and technology literacy skill scores increase, their likelihood of opting for relaxation activities decreases. Within this particular setting, it becomes evident that a positive and significant correlation exists between engagement in sporting activities and a level of information and technology literacy based on results. In relation to leisure and physical activities, it may be inferred that females have a greater inclination towards engaging in relaxation-oriented activities as opposed to sporting activities. Hence, it is noteworthy that the gender variable, specifically females, has a substantial influence on individuals' preference for leisure activities as compared to participating in sports.

When examining the significance of regression coefficients regarding individuals' preferences for cultural and sporting activities, it was determined that only the gender variable ($z=-2.4416$, $p<0.05$) exhibited statistical significance. Thus, it can be concluded that the gender variable (specifically, females) significantly influences individuals' choice of opting for tourist recreation activities over sporting recreational activities. Upon analyzing the importance of regression coefficients pertaining to individuals' preferences towards artistic and sporting recreational activities, it was ascertained that social responsibility and leadership skills ($z=-2.1127$, $p<0.05$) as well as gender ($z=-4.5465$, $p<0.05$) emerged as significant indicators based on their predictive capacity. In this context, it can be inferred that as individuals' social responsibility and leadership scores increase, their likelihood of opting for artistic activities over sporting ones decreases. Concerning the gender variable, it was found that females are more likely to prefer artistic activities over sporting ones.

DISCUSSION

The examination of the impact of income levels, leisure activities, 21st-century skills, and gender on the recreational activity preferences of young adults is a subject that gets considerable scholarly attention. Understanding the interplay of these aspects, individuals can gain an understanding of how they manage their leisure time and make decisions regarding recreational activities. Moreover, these interactions possess the potential to have an impact on a wide range of concerns relevant to individuals in the young adult demographic, including personal growth, well-being, and professional goal-setting. In this academic discussion, we will look at the research findings relating to the correlation between income levels, leisure activities, 21st-century skills, and gender in connection to recreational activity preferences among young adults.

Based on the results obtained from our research, the regression analysis done to assess the preference for tourist and relaxation recreational activities compared to sporting recreational activities revealed that the gender variable (namely, female) exhibited statistical significance. It was observed that women prefer engaging in tourism and leisure activity as

opposed to participating in sports activities. The rationale for this argument is that women tend to have a greater burden of obligations in performing normal household duties compared to men. Consequently, they exhibit a preference for engaging in passive and inactive activities. It is also feasible to assume that the proposed sporting activity lacks appeal, or that the touristic and leisure activities are distinct and have greater interest. In an identical study producing similar results, Smith et al. (2018) discovered a correlation between gender and engagement in recreational activities among tourists. The researchers noted that women exhibited a higher level of interest in tourist activities and shown greater rates of participation in comparison to men. This result indicates the influence of social and cultural factors on tourist preferences. From another perspective, our study results may suggest that gender plays a contributing factor in recreational activity preferences. In a study conducted by Smith and Johnson (2019), it was found that young adult men and women prefer different leisure activities, and these preferences are related to gender roles. For instance, research suggests that there is a tendency for men to exhibit greater interest in activities such as athletics or competitive activities, whereas women tend to be more attracted towards socially engaging, artistic, or activities related to social issues. In contrast, Pekcan and Karahan (2016) discovered in their study that females have a greater inclination towards artistic activities and show a preference for engaging in such activities. The inclination of women towards creative activities is believed to be associated with societal norms, aesthetic satisfaction, and the pursuit of emotional fulfillment. When viewed from a different perspective, these findings show that gender roles and social expectations in society affect recreation preferences. The fact that women, in particular, show more interest in artistic and touristic activities may be related to expectations and social pressures arising from gender norms. In a study conducted by Günay and Bener, 2011; it has been stated that the gender roles that society assigns to women have changed positively due to the developments required by the age, factors such as globalization, urbanization, change in state policies, and the increase in women's education levels. This positive change has also contributed to women's greater participation in physical activity in their daily lives. This result contradicts our study findings and emphasizes that women are more inclined towards sports activities than listening and artistic activities.

It is well-known that technology plays a significant role in defining concepts such as critical thinking, problem-solving, communication, and collaboration, which are required skills for the 21st century (Christensen and Knezek, 2015). Among the highlighted skills for this century, digital literacy, creativity, collaboration, and communication hold great importance (Law et al., 2015). In our study findings, it is observed that there is a positive relationship between career consciousness and technological literacy, and an increase in participation in sporting activities compared to relaxation activities. 21st-century skills play a significant role in the business world, career development, social life, and preferences. Many studies have observed that these skills also influence individuals' choices of leisure activities. In a study conducted by Wang and Chen (2018), it was determined that individuals' prioritization of 21st-century skills can vary for different job sectors. It has been found that individuals directing their leisure time towards activities related to their profession can enhance their chances of success in the business world and career development, showing a positive correlation. Another study conducted by Johnson and Anderson (2018) has suggested that how young adults choose to spend their leisure time may be related to 21st-century skills such as communication, collaboration, and technology. For example, activities such as using social media, participating in online collaboration platforms, or showing interest in creative projects can assist young adults in enhancing these skills.

In a pragmatic approach, recreation is oriented toward the goal of enhancing the social productivity and responsibility of both recreationists and society at large (Lumpkin, 1990). Our study results indicate that as individuals' social responsibility and leadership scores increase, their likelihood of preferring artistic activities over sporting activities decreases. Furthermore,

our study findings reveal that as individuals' scores in social responsibility and leadership increase, the likelihood of their choosing artistic activities over sporting activities decreases. This suggests that individuals with a stronger sense of social responsibility and leadership tend to exhibit a preference for artistic recreational pursuits as opposed to sports-related activities. Regarding the gender variable, it was found that females are more likely to prefer artistic activities over sporting ones. Such findings align with the broader objectives of recreation, and the gender-specific differences may be attributed to the elevated sense of responsibility among women, influenced by their societal roles and patriarchal family structures. In a study conducted by Downward, Lumsdon, and Ralston (2005), it was concluded that women exhibit greater participation in volunteer and social responsibility activities compared to men. And also Aksu et al. (2022) identified significant variations in the choice of leisure activities and positive reciprocity attitudes based on demographic factors.

The present discussion places emphasis on the correlation between the economic levels, leisure activities, 21st-century abilities, and genders of young adults. Nevertheless, it is essential to do further research in order to have a thorough understanding of the complex relationship between these components, in addition to understanding their individual effects. This research will contribute to the understanding of the impacts of these interactions on the decision-making process of young adults regarding their search of a healthy lifestyle, as well as their individual and Professional growth.

The analyses conducted in this study have demonstrated that gender has a substantial influence on individuals' preferences pertaining to sports, tourism, relaxing, cultural, and artistic activities. Specifically, it has been discovered that women exhibit a greater tendency for preferring tourist, relaxation, and artistic activities. Moreover, it was observed that many elements, including career awareness, proficiency in information and technology literacy, commitment to social responsibility, and ability for leadership, had a significant impact on individuals' decision-making processes. These findings underscore the multifaceted nature of the factors determining individuals' preferences and highlight the significant role of gender in activity selection.

These findings demonstrate that individuals' preferences for recreational activities can vary based on factors such as gender, career consciousness, information and technology literacy skills, and social responsibility. Therefore, professionals in the recreation industry can assist individuals in making activity choices by considering these factors. Furthermore, it was observed that women have a higher likelihood of preferring tourist, relaxation, and artistic activities. This finding can guide recreation industry professionals in planning activities that align with women's interests. The influence of factors like career consciousness, information and technology literacy skills, and social responsibility on individuals' activity choices underscores the need for awareness campaigns and educational initiatives in these areas. This way, individuals can make more informed and suitable choices for themselves.

Recommendations

Considering these findings, here are some recommendations that recreation industry professionals can consider to better understand and support individuals' preferences:

- Within the recreation sector, activities should be planned to align with individuals' genders and interests. Particularly, considering that women have a higher likelihood of preferring tourist, relaxation, and artistic activities, offering more options in these areas can be beneficial
- Factors such as career awareness, information technology literacy, and social responsibility influence individuals' activity choices. Therefore, organizing awareness

and education campaigns in these areas can help individuals make more informed choices by considering these factors.

- Individuals should also consider their genders, career awareness, information technology literacy, and social responsibilities when determining their preferences. By evaluating these factors, they can choose the activities that best suit their needs.
- Effective communication and information sharing between recreation industry professionals and individuals are essential. Professionals should remain open to continuous feedback to understand individuals' preferences and provide them with suitable activities.
- Recognizing that factors influencing preferences are multifaceted, the recreation sector should offer a variety of activity options. This way, every individual can find activities that align with their interests and needs.
- More publications and research studies can be conducted in the recreation sector. In-depth research is needed to understand how factors such as gender, career awareness, information technology literacy, and social responsibility impact activity preferences.

Limitations

The study's findings may not be fully representative of the entire population due to the sample size and demographics of the participants. The generalizability of the results to a larger population might be constrained if the sample was not sufficiently diverse or large. If the participants weren't chosen at random, there can be a sampling bias present. The results might not be applicable to a larger variety of people, for instance, if the study focused largely on university students or a certain age group. Furthermore, although the study may find associations between gender, job awareness, technology literacy, and preferences for leisure activities, it may not show a causal relationship. It's critical to recognize that these preferences might be influenced by other, as-yet-unidentified influences. The research may not have considered cultural or regional variations in preferences for recreational activities. These factors can significantly influence individuals' choices but may not have been adequately addressed. The study's conclusions and recommendations will be more credible and practical if these flaws are addressed, and their possible effects are acknowledged.

Conclusion

In summary, individuals have the ability to strategize their activities by considering several criteria, including gender, career awareness, proficiency in information and technology literacy, and commitment to social responsibility. Individuals can enhance their decision-making regarding activities by considering these elements. This study can provide valuable insights for improved activity planning and aims to assist especially recreation industry professionals in better understanding and supporting individuals' preferences, ultimately enhancing their experiences in the recreation sector. In future studies, it is important to investigate the diversity of recreational activities and programs and how these relate to gender differences in recreational participation. Furthermore, this research may help university students make more productive and active use of their spare time. In conclusion, this study highlights the significant influence of gender, career consciousness, information and technology literacy skills, and social responsibility and leadership skills on young adults' preferences for various recreational activities, bringing valuable light on the factors shaping their choices in leisure activities.

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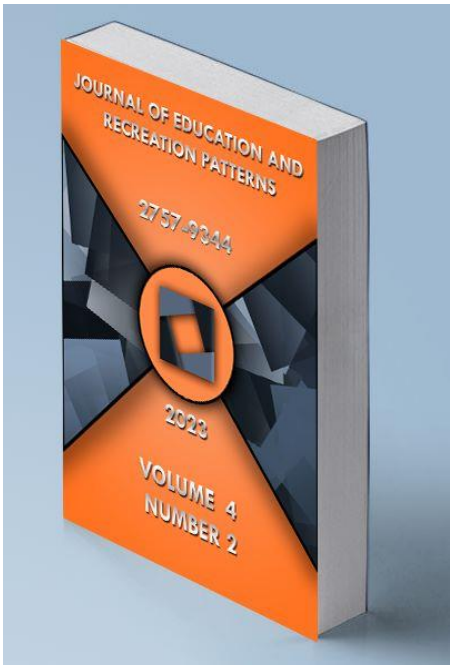
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Examining Innovation and Entrepreneurship in the Sports Sector

Erhan BUYRUKOĞLU[1], Mehmet ÖZDEMİR[2]
Aydan YURTSEVER[3]

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[1] Erhan Buyrukoğlu, Aydın Adnan Menderes University, Faculty of Sport Sciences, Aydın/Türkiye, erhanbuyrukoglu@gmail.com, https://orcid.org/ 0000-0002-8459-9270
[2] Mehmet Özdemir, Aydın Adnan Menderes University, Faculty of Sport Sciences, Aydın/Türkiye, ozdemirim69@gmail.com, https://orcid.org/0000-0003-2213-6403
[3] Aydan Yurtsever, Aydın Adnan Menderes University, Faculty of Sport Sciences, Aydın/Türkiye, aydanyurtsever09@gmail.com, https://orcid.org/ 0009-0008-5025-7054

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Examining Innovation and Entrepreneurship in the Sports Sector

Erhan Buyrukoğlu[1], Mehmet Özdemir[2], Aydan Yurtsever[3]

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ABSTRACT

This study aimed to examine innovation and entrepreneurship in the sports sector. The study group of our research consisted of 151 participants including coaches, sports managers, sports experts and club managers. In the first part of the data collection process, the personal information form created by the researchers was used. In the second part, innovation and entrepreneurship scales created by Tekin, M., Etlioğlu, M., and Tekin, E. (2018) were used. The data obtained in our research were evaluated at a 0.05 significance level using SPSS.25.00 package program at a 95% confidence interval. Descriptive statistics related to gender, age, specialization in the sports sector, graduation status, Professional experience, province of residence, and marital status were calculated. Skewness and kurtosis values were calculated to determine whether the data showed normality distribution. Statistically, t-test, Pearson correlation analysis, ANOVA analysis, percentage and reliability coefficient calculations, and frequency calculations were performed. As a result, while there was no statistically significant difference in the variables of gender, graduation status, province of residence, age, and Professional experience, a statistically significant difference was detected in the field of innovation and entrepreneurship in the sports sector according to the marital status, specialization in the sports sector, and the obtained general analysis results.

Keywords: Entrepreneurship, Innovation, Sector, Sport

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INTRODUCTION

Innovation, has an impact on sustainability as well as on the economy and entrepreneurship (Boons et al., 2013; Montalvo et al., 2011). Entrepreneurship through innovation provides development impact on the national economy (Ball, 2005) innovation, like entrepreneurship, aims to achieve both benefits and social missions (Hernandez-Vivanco et al., 2018). It is worth noting that entrepreneurship and innovation in the sport industry are key elements to maintain competitiveness in this sector and this field of study is gaining a high level of interest (Ball, 2005) it is important to emphasize that sport entrepreneurship in the sport industry is dynamic and influences various management areas such as business strategy, new sport development, performance management, product innovation, social issues, sustainability concerns and technological developments (Ratten, 2011), innovation is an important part of entrepreneurship (Hitt et al., 2001).

Innovation is the context of all factors with a holistic view within the organization to which individuals are attached (Bayındır & Buyrukoğlu, 2023; Perry, Anderson and Ohrbrg, 2022). Innovation is defined as novelty from past to present (Naktiyok, 2006). Buyrukoğlu and Şahin (2022) have defined sports and innovation as organizational innovation, marketing innovation and process innovation in their study. Innovation leads to the formation of new ideas of individuals in the field of entrepreneurship and the realization of innovations in the sports sector. Entrepreneurship is the act of perceiving opportunities in the social environment, dreaming with perception, turning dreams into reality, and putting the opportunity enriched with realities into practice (Buyrukoğlu, 2022). In the sports sector, entrepreneurship generally helps new products to be kept in the market, promoted, and new opportunities to be provided through advertising (Stubbs, 2008; Ibrahim, Aydoğmuş, 2023). In this context, innovation and entrepreneurship play crucial roles in driving growth and development in various sectors, including the sports industry. The sports sector is inherently entrepreneurial, as it requires constant adaptation to changing consumer demands and increased emphasis on innovation (Ratten, 2010). Entrepreneurship in the sports sector allows for the exploration of new opportunities and the creation of value for stakeholders (Ratten, 2010). Innovation is a tool used to reach large masses today. Innovation in the sports sector provides the opportunity to present the innovations of sports to many audiences with its combination with sports. Technological innovations that play sports more entertaining and sportive organizations bring the presence of innovation to the spotlight (Crawford & Gosling, 2009). The development of sports mega-events has been found to be linked to urban entrepreneurship (Ratten, 2010). These events provide opportunities for entrepreneurs to create and capitalize on new ventures, such as hospitality services, transportation, and merchandise. Additionally, entrepreneurship in the sports sector has been recognized as a critical factor in responding to crises, such as the COVID-19 pandemic (Ratten, 2020). Sport businesses, athletes, managers, fans, and consumers need to utilize entrepreneurial thinking to act creatively and combat the uncertainty associated with such crises (Ratten, 2020). However, in addition to this sustainable entrepreneurship and innovation have also gained attention in the sports sector (González-Serrano et al., 2020). In recent times the integration of sustainability principles into sport entrepreneurship and innovation has become a focus for academics and practitioners (González-Serrano et al., 2020).

When the literature was examined, it was seen that there were many studies on innovation and entrepreneurship in general, but the two concepts were not evaluated together in the sports sector. Considering this situation, our research was performed to examine innovation and entrepreneurship in the sports sector. In line with this purpose, the fact that there are innovative innovations in the sports sector every day and that many sportive activities are carried out in the field of entrepreneurship support the problem of our research. In the literature, it has been observed that entrepreneurship and innovation studies have not been together.

Considering this situation, this study in the field of innovation and entrepreneurship in the sports sector is thought to complete the academic gap in the field of sports sector.

It is thought that our research will have an impact on stakeholders in the sports sector working in the field of innovation and entrepreneurship in the field of sports. In our research, it is aimed to examine innovation and entrepreneurship in the sports sector. The fact that the sports sector has a wide network has led us to examine the effects of these two scopes on the concepts of innovation and entrepreneurship in the sports sector. The researchers statistically analyzed the variables to determine the gender, age, specialization area in the sports sector in which you work, your most recent graduation status, years of working in the profession, the province where you live and marital status of the participants and the effects of these variables were included in the results of the research. In the general literature review, it is seen that there are many studies on entrepreneurship and innovation, but these two concepts cannot be included together in the sports sector. In this case, we think that our research is unique and will lead similar studies after our research and will make a great contribution to the literature. In addition, our research is thought to close the gap in the literature by leading individuals who will work on innovation and entrepreneurship in the sports sector.

METHOD

Research Model

In this study, since it is aimed to determine the determination of innovation and entrepreneurship in the sports sector, descriptive survey design from quantitative research designs was used (Karasar, 2009).

Population and Sample of the Study

The study population for our research comprised 151 individuals actively engaged in the sports sector within the Aydın and Muğla provinces. This sample encompassed a diverse group, including coaches, sports managers, sports experts, and club managers. The utilization of a random sampling method was a pivotal aspect of our research design. Through rigorous population sampling calculations, it was determined that 150 individuals from the Aydın and Muğla provinces would aptly represent the broader population sample for our study. This approach was meticulously employed to ensure the sample's representativeness and the generalizability of our findings to the larger population of interest.

Table 1. Demographic Variables

Variables		f	%
Gender	Male	54	35.8
	Female	97	64.2
	Total	151	100
Age	+ 35 years old	29	19.2
	25 years old	50	33.1
	23 years old	37	24.5
	20 years old	35	23.2
	Total	151	100.0
Area of Specialization in the Sports Sector	Coach	52	34.4
	Sport Manager	56	37.1
	Sport Expertise	29	19.2
	Club Manager	14	9.3
	Total	151	100.0
Graduation Status	Bachelor's degree	120	79.5
	Masters’ degree	31	20.5

	Total	151	100.0
Professional Experience	2 years	31	20.5
	3 years	17	11.3
	4 years	34	22.5
	+ 5 years	69	45.7
	Total	151	100.0
Province of Residence	Aydın	88	58.3
	Muğla	63	41.7
	Total	151	100.0
Marital Status	Married	78	51.7
	Single	73	48.3
	Total	151	100.0

When the variables with the highest categories in Table 1 were examined, female participants (N=91, 64.2%) were the majority in the gender variable; 25 years old participants (N=50, 33.1%) were the majority in the age variable; sports managers (N=56, 37. 1%) were the majority; bachelor's degree was the majority in the educational status variable (N=120, 79.5%); 5 years and more were the majority in the profession experience (N=69, 45.7%); Aydın in the variable of the province lived in (N=88, 58.3%); Married participants were the majority in the variable of marital status (N=78, 51.7%).

Data Collection Tools and Process

The data collection procedure consisted of two different stages. First, a personal information form developed by the researchers was applied to the participants. Second, innovation and entrepreneurship scales created by Tekin, Etlioğlu, and Tekin (2018) were used.

Personal Information Form: The first segment of the data collection process involved the utilization of a personal information form designed specifically for this study. This form consisted of seven meticulously crafted questions to elicit data related to participants' gender, age, specialization within the sports sector, professional experience, educational attainment, current province of employment, and marital status.

Innovation and Entrepreneurship Scales: The innovation scale developed by Yapar (2015) and the innovation and entrepreneurship scales adapted by Tekin, Etlioğlu, & Tekin (2018) from the intrapreneurship level scale developed by Naktiyok (2004) and validity and reliability were used in our research. These scales provide a structured framework for evaluating participants' responses. Participants rated their degree of agreement with the statements on a 5-point Likert scale ranging from (1) "Strongly Disagree" to (5) "Strongly Agree".

Notably, the original authors of these scales reported Cronbach's Alpha values of .940 for the innovation scale and .950 for the entrepreneurship scale in their 2018 study. In this study, reliability analyses yielded a Cronbach's Alpha value of .954 for the innovation scale and .946 for the entrepreneurship scale, affirming the internal consistency and reliability of these instruments within the context of the investigation.

Table 2. Reliability Analysis Results

Scales	Cronbach's Alpha Coefficient
Innovation Scale	,954
Entrepreneurship Scale	,946

Table 2 showed the reliability analysis results obtained from the scales. According to these results, it was seen that all dimensions were sufficiently reliable.

Data Analysis

In this study, SPSS 25.0 package programme was used to analyse the data. Outliers in the data set and whether the assumption of multivariate normality was accepted or not were analysed with the help of Mahalanobis distance values and 9 data showing outlier outliers were removed from the data set. The kurtosis and skewness coefficients were found to be between +2, -2 and parametric tests were used in the analysis (George & Mallery, 2010). Statistically, linear regression analysis, frequency, percentage and reliability coefficient calculations, ANOVA analysis, correlation analysis and t-tests were performed. The analyses were performed according to a 95% confidence interval. Significance level was determined as $p<0.05$.

Table 3. Descriptive Values Kurtosis Skewness Analysis

Variables	Minimum	Maximum	$\bar{x}$	Sd.	Kurtosis	Skewness
Innovation	15.00	75.00	49.19	13.20	-,443	-,305
Entrepreneurship	15.00	75.00	48.23	12.26	-,177	-,312

According to the descriptive statistics results of the scales in Table 3, it was seen that the dimension of the innovation scale was very high ($\bar{x}$=49.19) and the dimension of the entrepreneurship scale was very high ($\bar{x}$=48.23).

FINDINGS

In the findings section of our research, Gender, Graduation Status, Province of Residence, Marital Status, Age, Area of Specialization in the Sports Sector, Professional Experience, Pearson Correlation Analysis Statistical results of entrepreneurship and innovation are given in tables below.

Table 4. Independent Sample t-Test Results between Innovation and Entrepreneurship Regarding Participants' Gender Variables

Dimension	Gender	N	$\bar{X}$	Sd.	t	p
Innovation	Male	54	47.88	14.93	-,904	,367
	Female	97	49.91	12.15		
Entrepreneurship	Male	54	47.64	14.01	-,440	,661
	Female	97	48.56	11.24		

Table 4 showed that there was no statistically significant difference in the innovation and entrepreneurship scales according to the results of the independent sample t-test between innovation and entrepreneurship in the gender variable of the participants ($p>0.05$).

Table 5. Independent Sample t-Test Results between Innovation and Entrepreneurship in the Variable of Participants' Graduation Status

Dimension	Graduation Status	N	$\bar{X}$	Sd.	t	p
Innovation	Bachelor's degree	120	49.09	13.17	-,183	,855
	Master's degree	31	49.58	13.53		
Entrepreneurship	Bachelor's degree	120	47.95	12.16	-,551	,583
	Master's degree	31	49.33	12.82		

Table 5 showed that there was no statistically significant difference in the innovation and entrepreneurship scales according to the results of the independent sample t-test between innovation and entrepreneurship in the most recent graduation status variable (p>0.05).

Table 6. Independent Sample t-Test Results between Innovation and Entrepreneurship in the Variable of the Province in which the Participants Live

Dimensions	Province of Residence	N	$\bar{X}$	Sd.	t	p
Innovation	Aydın	88	50.09	13.27	,989	,324
	Muğla	63	47.93	13.10		
Entrepreneurship	Aydın	88	49.77	11.81	1,830	,069
	Muğla	63	46.09	12.66		

According to the results of the independent sample t-test conducted between innovation and entrepreneurship in the province in which the participants live in Table 6, there was no statistically significant difference in innovation and entrepreneurship scales (p>0.05)

Table 7. Independent Sample t-Test Results between Innovation and Entrepreneurship in the Marital Status Variable of the Participants

Dimensions	Marital Status	N	$\bar{X}$	Sd.	t	p
Innovation	Married	78	45.83	12.89	-3,338	,001*
	Single	73	52.78	12.65		
Entrepreneurship	Married	78	45.42	12.35	-2,991	,003*
	Single	73	51.24	11.51		

p<0,05*

Table 7 showed that there was a statistically significant difference in the innovation and entrepreneurship scales according to the results of the independent sample t-test between innovation and entrepreneurship in the marital status variable of the participants (p<0.05).

Table 8. Anova Analysis Results between Innovation and Entrepreneurship in the Age Variable of the Participants

Dimensions	Age	N	$\bar{X}$	Sd.	f	p
Innovation	35 years and older	29	50.24	12.53	,828	,481
	25 years	50	51.06	13.59		
	23 years	37	47.91	11.42		
	20 years	35	47.00	14.92		
Entrepreneurship	35 years and older	29	49.19	9.75	,817	,486
	25 years	50	47.27	13.14		
	23 years	37	50.16	11.37		
	20 years	35	48.40	13.74		

Table 8 showed that there was no statistically significant difference in the innovation and entrepreneurship scales according to the result of the ANOVA analysis between innovation and entrepreneurship in the age variable of the participants (p>0.05).

Table 9. Participants' Specialization in the sports sector Anova Analysis Results between Innovation and Entrepreneurship in Your Field Variable

Dimensions	Area of Specialization in the Sports Sector	N	$\bar{X}$	Sd.	f	p	Source Of Difference
Innovation	Coach	52	45.36	12.19	3,176	,026	1-2
	Sport Manager	56	52.01	13.08			
	Sport Expertise	29	48.17	14.83			
	Club Manager	14	54.21	10.35			
Entrepreneurship	Coach	52	46.48	11.91	,961	,413	
	Sport Manager	56	50.16	12.25			
	Sport Expertise	29	47.03	13.47			
	Club Manager	14	49.57	11.01			

p<0,05*

When Table 9 was examined, a significant difference was detected in the innovation scale according to the result of the ANOVA analysis between the participants' areas of specialization in the sports sector, innovation and entrepreneurship, and the innovation scores of the coaches were lower than the participants working as sports managers (p<0.05).

Table 10. Anova Analysis Results between Innovation and Entrepreneurship in the Variable of Participants' Professional Experience

Dimensions	Professional Experience	N	$\bar{X}$	Sd.	f	p
Innovation	2 years	31	53.48	15.05	2,204	,090
	3 years	17	46.00	13.00		
	4 years	34	45.91	12.60		
	+ 5 years	69	49.66	12.29		
Entrepreneurship	2 years	31	51.61	13.53	1,597	,193
	3 years	17	45.70	12.62		
	4 years	34	45.58	12.51		
	+ 5 years	69	48.65	11.28		

Table 10 showed that there was no statistically significant difference in the innovation and entrepreneurship scales according to the result of the ANOVA analysis between innovation and entrepreneurship in the variable of the participants' professional Experience (p>0.05).

Table 11. Pearson Correlation Analysis Results between Innovation and Entrepreneurship

		Age	Professional Experience	Innovation
Professional Experience	R	,017		
	P	,836		
	N	151		
Innovation	R	-,111	-,077	
	P	,175	,350	
	N	151	151	
Entrepreneurship	R	-,059	-,063	,874**
	P	,470	,440	,000
	N	151	151	151

The Table 11 displays the Pearson correlation analysis results between Innovation, Entrepreneurship, Age, and Professional Experience. The analysis shows that there is a weak and non-significant positive correlation between Professional Experience and Age (R = 0.017, p = 0.836). Regarding Innovation, there is a weak and non-significant negative correlation with both Age (R = -0.111, p = 0.175) and Professional Experience (R = -0.077, p = 0.350). However, Entrepreneurship exhibits a strong and statistically significant negative correlation with Innovation (R = -0.874**, p = 0.000), indicating that higher levels of Entrepreneurship are associated with lower levels of Innovation among the participants in this study.

DISCUSSION

In this study, to examine innovation and entrepreneurship in the sports sector on the basis of various variables; gender, age, specialisation area in the sports sector, graduation status, professional experience, province you have worked in, and marital status results were explained below.

When the statistical analyses of the participants based on demographic variables were examined in our research, it was found that the gender variable was in favour of male participants compared to female participants, the age variable was in favour of 25 years old compared to 20 years old, 23 years old, and 35 years old and older. Moreover, specialisation in the sports sector was in favour of the sports manager compared to the club manager, sports specialist, and coach, in the variable of graduation status was in favour of the bachelor's degree, in the variable of professional experience was in favour of the 5 years and above, in the variable of province of residence, it was found to be against Muğla compared to Aydin, and in the variable of marital status, it was found to be against single participants compared to married participants (Table 1). Besides, according to the results of descriptive statistics in our research, it was seen that the dimension of the innovation scale was very high and the dimension of the entrepreneurship scale was very high (Table 3).

In table 8, no statistically significant difference was detected in innovation and entrepreneurship scales in the age variable of the participants ($p>0.05$). In 2015, the study conducted by Öztürk also showed no statistically significant difference when the studies on innovation in the field of sports were analyzed based on age variable. These results support the results of our research (Öztürk, 2015). In the studies on entrepreneurship in the field of sport, no statistically significant difference was detected in the age variable in the study conducted by Çelik and Şahin (Çelik & Şahin, 2015). In the studies conducted by Senen and Basım and Karataş, a statistically significant difference was observed (Senen & Basım, 2012; Karataş, 2018).

There was no statistically significant difference between innovation and entrepreneurship in the most recent graduation status variable ($p>0.05$), (Table, 5). When the studies on innovation in the field of sports in the literature were examined based on the graduation status variable, it was seen that there was no statistically significant difference (Atalay, 2018; Demir, 2021). In addition, it was observed that there was a statistically significant difference on the basis of graduation status since the studies examined in the literature were conducted in different populations and sample groups (Özkan et al., 2020; Öztürk, 2015; Kulanşi, 2019; Karataş & Akıncı, 2022; Atılgan & Tükel, 2021). In the studies on entrepreneurship in the field of sports, it was observed that the graduation status variable in the studies on entrepreneurship was generally positive in the results of the analyses conducted on the students of the faculty of sports sciences (Mülhim, 2019; Yılmaz & Sünbül, 2009; Özmen, 2015; Karataş, 2018).

There was no significant difference in the results of innovation and entrepreneurship statistical analyses ($p>0.05$), (Table, 6).

Participants' years of working in the profession in the variable of innovation and no significant difference was observed in entrepreneurship scales ($p>0.05$), (Table, 10). In the literature, studies on innovation in the field of sports have shown that there was no statistically significant difference in the variable of professional experience (Demir, 2021; Demir, 2022). When the studies on entrepreneurship in the field of sport were examined, it was seen that there were no studies on entrepreneurship in the literature.

There was no statistically significant difference in the innovation and entrepreneurship scales in the gender variable of the participants ($p>0.05$), (Table, 4). When the studies on entrepreneurship in the field of sport were examined in the literature, it was seen that there was no statistically significant difference in the results of the analysis of these studies in general (Tiwari & Sanadya, 2018; Yılmaz & Sünbül, 2009; Otović et al., 2017; Bilge & Bal, 2012; Shinnar et al. 2009; Ardahaee, Noubatht, & Rostami, 2017; Radu et al., 2018). In the studies on innovation, it was observed that there was no statistically significant difference in the sports sector and gender. These results support the results of our research (Kushnirovich & Heilbrunn, 2013; Chen et al., 2018; Schneid et al. 2015). In addition, some studies in the literature showed that there was a positive statistical difference in terms of gender (Galia et al., 2014; Poggesi et al., 2016; Torchia et al., 2018; Chen et al., 2018; Dezso & Ross, 2012).

A statistically significant difference was observed in the innovation and entrepreneurship scales in the marital status variable of the participants ($p<0.05$), (Table, 7).

As a result of the analysis of the participants' specialization areas in the sports sector, innovation and entrepreneurship, a significant difference was detected in the innovation scale, and the innovation scores of the coaches were lower than the participants working as sports managers ($p<0,05$), (Table, 9).

In Table 11, according to the results of Pearson Correlation analysis to determine whether there was a significant relationship between innovation and entrepreneurship levels of the participants, a positive significant relationship was found between innovation and entrepreneurship scores.

González-Serrano et al. (2020) stated in their research that the field of entrepreneurship or sustainable innovation in sport has become a new sub-field of study in the field of sport entrepreneurship, but although it is a very young field of study since the first article was published at the beginning of the 11th century, academic studies in different parts of the world, especially in the USA, have attracted more and more attention of researchers.

Şahin, Demirci, and Güllü, S. (2021). in their research, they state that entrepreneurship is effective on the economy, especially in the 21st century, making e-sports policy and entrepreneurship activities have become an important factor in the sports sector. In addition, with the increase in competition in the sports sector and the introduction of technological innovations into the sports field, it is stated in the results of the research that the place of entrepreneurship activities in the sports sector has a strong positive factor.

Conclusion

As a result, while there was no statistically significant difference in the variables of gender, graduation status, the province of residence, age, and professional experience, there was a statistically significant difference in the field of innovation and entrepreneurship in the sports sector according to the marital status, the area of specialization in the sports sector and the obtained general analysis results.

Limitations

İt is recommended to support the studies to be carried out on the effect of postgraduate theses on sports in the field of innovation and entrepreneurship, to provide trainings to young individuals in the field of entrepreneurship in terms of contributing to the national economy, and to raise awareness of the society by increasing entrepreneurship and innovation youth clubs in the field of sports.

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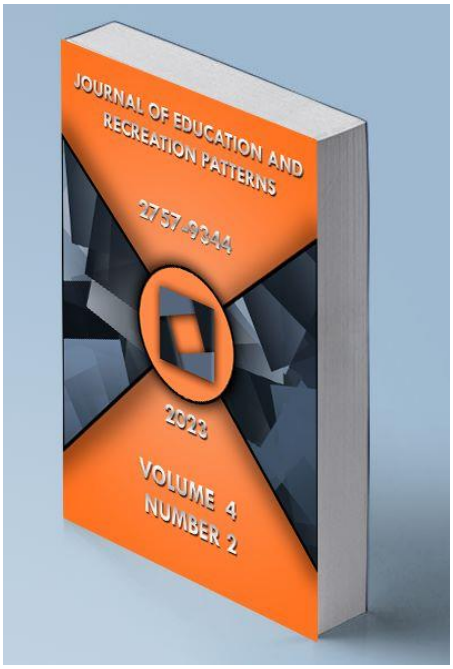
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Yunus Sinan BİRİCİK[1], Burak KARABABA[2], Mehmet Haluk SİVRİKAYA[3]

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[1] Yunus Sinan Biricik, Atatürk University Sport Science Faculty, Erzurum/Turkey, sinan.biricik@atauni.edu.tr, http://orcid.org/0000-0002-8579-9514

[2]Burak Karababa, Erzurum Technical University Sport Science Faculty, Erzurum/Turkey, burak.karababa@erzurum.edu.tr, http://orcid.org/0000-0001-5873-5796

[3] Mehmet Haluk Sivrikaya, Atatürk University Sport Science Faculty, Erzurum/Turkey, haluk@atauni.edu.tr, http://orcid.org/0000-0001-8268-3391

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The Relationships Between Emotional Reactivity and Psychological Adaptation Skills: A Study on Elite Level Athletes

Yunus Sinan Biricik[1], Burak Karababa[2], Mehmet Haluk Sivrikaya[3]

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ABSTRACT

In this study, it is aimed to examine the relationship between emotional reactivity, depression, anxiety and stress in elite athletes, considering that psychological qualities such as emotional reactivity and anxiety observed in athletes due to the heavy preparation conditions inherent in sports and the recent breaks in sports may increase the risk of psycho-social disorders. In this descriptive study, the relational survey model was used. The study group of the research consisted of a total of 209 elite level athletes, 59 women and 150 men, in different branches. As a data collection tool; "Emotional Responsiveness Scale" and "Turkish Short Form of Depression Anxiety Stress Scale (Dass 21)" were used. As a result of the study, there were significant differences between the emotional reactivity and depression, anxiety, and stress levels of the athletes involved in team sports compared to the athletes involved in individual sports, according to the sports branch. However, it has been determined that there is a positive and highly significant relationship between the emotional reactivity of the athletes and their depression, anxiety, and stress levels. As a result, considering the strong relationship between emotional reactivity and psychological adjustment skills, it is important to take protective measures in both social and professional lives of athletes for this concept, as an increase in the level of emotional reactivity may have positive relations with some psychological adjustment skills.

Keywords: Anxiety, Depression, Elite Athlete, Emotional Reactivity, Stress

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INTRODUCTION

Considering the studies on emotion, which has an important place in psychology, it is seen that important scientific researchers have been done to understand the structure of emotion (Ekman & Davidson, 1994). But despite these studies, there are countless unanswered questions in the study of emotions. Because individuals show different behavior patterns in various contexts, there is subjectivity and diversity in their emotional experiences (Schachter & Singer, 2000). When we look at the basic components of many psychiatric problems, exaggerated emotional reactivity and disturbances in emotion regulation are seen (Campbell-Sills & Barlow, 2007). Emotion regulation is a versatile and multidimensional process (Rosen & Epstein, 2010). When we look at the literature, there are many studies examining the relationships between various aspects of emotion, emotion regulation strategies and psychopathology. Few studies that examine individuals' susceptibility to problems related to emotion regulation focus on emotional reactivity. Several different theoretical models have emphasized the importance of both emotional regulation and emotional reactivity in the development and maintenance of psychopathology, but less attention has been paid to emotional reactivity and few studies have been conducted (Nock et al., 2008). There is considerable debate about the definition of emotion regulation, and with it the distinction between emotional reactivity and emotion regulation. However, when we look at most emotion regulation models, reactivity is seen as an emotional experience arising from the interaction with an emotion-inducing stimulus and the physiological, cognitive and behavioral mechanisms used to change the initial emotional reaction in line with environmental needs (Campos et al., 2004).

Emotional reactivity and the acquisition of psychological adaptation skills assume pivotal roles in the performance and well-being of athletes. This exposition provides a comprehensive overview of these constructs and their profound importance.

Emotional reactivity pertains to an individual's capacity to respond to emotional stimuli or triggers. In the realm of athletes, it encompasses their perception, processing, and expression of emotions in reaction to diverse situations, both within and outside the athletic domain. The degree of emotional reactivity can either augment or impede an athlete's performance, contingent upon their management of emotions. For instance, a moderate level of anxiety or excitement can propel performance, whereas excessive stress or anger can impair it. Athletes necessitate the cultivation of efficacious strategies to regulate their emotional reactivity, particularly in high-pressure circumstances. Techniques such as mindfulness, deep breathing, and visualization can enable emotional control and sustained focus.

Emotion reactivity is an important construct in the study of psychopathology; However, no measures to date have provided a comprehensive assessment of the subjective experience of emotional reactivity. Emotion reactivity refers to the degree to which an individual experiences emotion over a long period of time in response to a wide variety of stimuli, before returning to a strong or intense level of arousal (Nock et al., 2008). Individuals differ according to their emotional reactivity and emotion regulation capacities (Hessler & Katz, 2007). Individuals' reactivity and emotion regulation levels also vary from situation to situation and globally (Cole et al., 2004). Since effective regulation regulates negative emotional reactivity, the person does not experience destructive emotional stress, but the disorder that occurs in regulating negative emotional reactivity causes constantly increasing and damaging emotional stress (Rosen & Epstein, 2010).

Today, as a research area, depression, anxiety and stress have been the most studied and studied with different aspects together with other fields. When the studies are examined, it is stated that many people experience emotional problems due to various reasons (Akpınar,

2013; Durna, 2006). Depression can be defined as a situation in which the enjoyment and motivation of living decreases or is completely lost, a deep sadness and grief, feelings of anger, regret and guilt about past experiences, a pessimistic perception of the future, and a desire to die and commit suicide. In other words, depression; difficulty in thinking and concentrating, difficulty in memory, constant sadness and grief, feeling emptiness with anxiety, increase in nervous reactions, tendency to blame other individuals, change in appetite, questioning one's own worth with a sense of worthlessness, decreased interest in recreational activities and Decreased enjoyment of enjoyable activities, increased thoughts about death, increased smoking, coronary heart problems, difficulty in motivation (APA, 2000).

Anxiety and depressive disorders are ubiquitous and debilitating psychiatric conditions that collectively affect close to 10% of the global population every year (World Health Organization, 2017). Symptoms of anxiety and depression commonly co-occur, and high rates of comorbidity among anxiety and depressive disorders are well-established (Maser, & Cloninger, 1990). More than half of all individuals with major depressive disorder (MDD) develop an anxiety disorder during their lifetime (Kessler et al., 1996; Regier et al., 1998). Stress, on the other hand, can be defined as a state of constantly perceived mental tension. Stress occurs when the individual perceives the demands expected from him/her as excessive or feels that the capacity to adapt is insufficient (Cohen et al., 1995). It is known that the share of stress in the formation of diseases is large. While Lazarus (1966) states that stress arises when the individual feels threatened and cannot be successful enough, Raymond (2000) states that people feel anxiety about coping with situations. Selye (1936), on the other hand, defined the definition of stress as a physical, mental and emotional reaction to an unfamiliar situation during the adaptation process. According to the coping theories of Lazarus and Folkman (1984) regarding stress, it was stated that individuals constantly evaluate the stimuli around them, and emotions occur after this process. The common features of the definitions are that it is an individual-specific experience due to pressure, expectation or threat, and that the person's perception of competence is negatively affected. In this context, the common features of the definition of stress are as follows (APA, 2000); feelings of guilt, irritability, grief, anger, sleep disturbance, change in appetite and weight, difficulty concentrating when making decisions, negative thoughts, difficulty in attention, not feeling peaceful, having problems with other individuals, and difficulties in communication.

The potential for individuals to exhibit emotional responses to various events, circumstances, and individuals encountered throughout their lifetimes is subject to change. Should individuals experience elevated positive emotional reactions, their levels of affection, admiration, and personal self-assurance will correspondingly increase. Conversely, heightened negative emotional reactions can result in the emergence of aggressive tendencies, fear, anxiety, and even suicidal ideation (Wentzel, 1998). Understanding the capacity of emotional reactivity to forecast psychological maladjustment and the propensity for trait anger will contribute substantially to the psychological well-being and athletic performance of athletes. Emotions play a pivotal role in the realm of sports, constituting a vital component that largely determines the level of stimulation experienced during competition. Given the inherently competitive nature of sports, athletes are compelled to exert maximal effort while confronting the mental strain and significant physical exhaustion that invariably accompany such endeavors. This process primarily involves a sequence of purposeful and coordinated activities that hinge upon cognitive functioning (Bali, 2015; Kolayis & Sari, 2011). In summary, emotional reactivity and psychological adaptation skills are essential components of an athlete's mental toolkit. Developing these skills can lead to improved performance, greater resilience in the face of challenges, and overall well-being, both on and off the field.

In this study, it was aimed to examine the relationship between emotional reactivity and psychological adjustment skills of elite athletes according to various demographic

variables. In this context, answers to the following questions were sought;

1. Do the emotional reactivity and psychological adaptation skills of elite athletes differ according to the "gender" variable?

2. Do the emotional reactivity and psychological adaptation skills of elite level athletes differ according to the "sport branch" variable?

3. Do the emotional reactivity and psychological adaptation skills of elite athletes differ according to the "age" variable?

4. Do the emotional reactivity and psychological adaptation skills of elite athletes differ according to the "sport age" variable?

5. What is the relationship between emotional reactivity and depression, anxiety and stress?

METHOD

Research Design

In this study, the method of "correlational research from quantitative research methods" was used. Correlational research refers to studies that examine the relationship between two or more variables without interfering with these variables (Fraenkel & Wallen, 2006).

Population and Sample of the Study

The population of the study consists of elite level athletes who actively play sports in their clubs in Turkey (taekwondo, athletics, boxing, wrestling, curling, ice hockey, volleyball) and participate in at least one international competition. The sample group consists of 209 athletes who were randomly selected from the universe and agreed to participate in the research.

Table 1. Information on Demographic Characteristics

Gender	**N**	**%**
Female	59	28,2
Male	150	71,8
Sports Branches	**N**	**%**
Individual Sports	143	68,4
Team Sports	66	31,6
Age	**N**	**%**
18 years and under	48	23,0
19-23 years	84	40,2
24-28 years	45	21,5
29 years and over	32	15,3
Sport Ages	**N**	**%**
4 years and under	17	8,1
5-8 years	58	27,8
9-12 years	52	24,9
13 years and over	82	39,2
Total	209	100

Regarding the demographic information of the athletes participating in the study: 59 female and 150 male; 143 people take part in individual sports and 66 in team sports; 48 people are under the age of 18, 84 people are between the ages of 19-23, 45 people are between the ages of 24-28, and 32 people are over the age of 29; 17 people are 4 and less than 4 years old, 58 people are 5-8 years, 52 people are 9-12 years, 82 people are 13 years and above.

Data Collection Tools

In the study, a questionnaire consisting of three parts was used to collect data from the participants.

Personal Information Form: The first part is the personal information form created by the researcher. In this section, there are questions to determine the socio-demographic characteristics of the participants such as gender, sports branch, age and sports age.

Emotional Reactivity Scale: In the second part of the questionnaire, the Emotional Reactivity Scale developed by Nock et al. (2008) and adapted into Turkish by Seçer et al. (2013) was used to measure the emotional reactivity levels of the participants. The scale consists of 17 items in a 4-point Likert type (1 = strongly disagree, 4 = completely agree). The scale consists of 21 items, and three sub-dimensions: responsiveness, psychological resilience and emotional sensitivity. While the internal consistency coefficient was found to be 0.94 in the original study. The cronbach alpha values of this study were found to be .91.

DASS (Depression Stress and Anxiety) -21 Scale: In the third part of the questionnaire, the DASS (Depression Stress and Anxiety Scale) -21 scale, which was first developed by Lovibond and Lovibond in 1995 as 42 items and three sub-dimensions, and later revised to 21 items by Brown et al. in 1997, was used to determine the depression, anxiety and stress levels of the participants. The Turkish adaptation study was carried out by Yılmaz et al. (2017). Scale items are in 4-point Likert type; It is scored between 0 “not suitable for me” and 3 “completely suitable for me”. In the Turkish adaptation study of the scale, Cronbach's alpha values of the sub-dimensions were found between 0.75 and 0.81 (Yılmaz et al., 2017). The cronbach alpha values of this study were found to be .94.

Data Analysis

The data obtained from the participants in the study were transferred to digital media with SPSS 23.0 software. In the first stage, skewness and kurtosis values were checked in order to reveal whether the data collected after the frequency analysis showed normal distribution, and parametric tests were applied because the data showed normal distribution. It is said that the data within the limits explained by Tabachnik and Fidell (2015) (-1.5 to +1.5) show a normal distribution. T-test was used for demographic variables of gender and sports branch, and One Way Anova Test was used for demographic variables of age and sports age. Correlation analysis was conducted to reveal the relationship aimed in the research. In the study, the analyzes were carried out at a 95% confidence interval.

Table 2. Normality Test Results

Scale	N	Min.	Mak.	Mean	Sd.	Skewness	Kurtosis
Emotional Sensitivity	209	1.00	4.00	2.66	.739	.102	-.575
Responsiveness	209	1.00	4.00	2.52	.688	-.187	-.766
Resilience	209	1.00	4.00	2.16	.673	.193	-.460
Emotional Reactivity Total	209	1.00	4.00	2.41	.622	.057	-.582
Anxiety	209	1.00	4.00	1.95	.755	.539	-.336
Depression	209	1.00	4.00	1.99	.856	.548	-.811
Stress	209	1.00	4.00	2.17	.714	.087	-.748

As seen in Table 2, the test of normality was used to determine whether the data were normally distributed. It is said that the data within the limits explained by Tabachnik and Fidell (2015) (-1.5 to +1.5) show a normal distribution.

FINDINGS

The results of the analyses of the research findings are given in this section.

Table 3. Comparison of Emotional Reactivity and Psychological Adaptation Skills Related to Participants' Gender

Scale	Gender	N	x̄	Sd.	t	p
Emotional Sensitivity	Female	59	2.84	.779	2.253	**.025***
	Male	150	2.59	.712		
Responsiveness	Female	59	2.63	.700	1.336	.183
	Male	150	2.48	.682		
Resilience	Female	59	2.12	.551	-.517	.606
	Male	150	2.18	.716		
Emotional Reactivity Total	Female	59	2.48	.594	.983	.327
	Male	150	2.39	.632		
Anxiety	Female	59	1.82	.688	-1.515	.131
	Male	150	2.00	.776		
Depression	Female	59	2.02	.921	.361	.719
	Male	150	1.97	.832		
Stress	Female	59	2.15	.669	-.149	.882
	Male	150	2.17	.733		

As seen in Table 3, in the comparison of emotional reactivity and psychological adjustment skills according to the gender of the participants; There is a significant difference in the emotional sensitivity (p=.025) sub-dimension of the emotional reactivity scale. No significant difference was found between the other sub-dimensions and the total score of the emotional reactivity scale. According to this, In the sensitivity sub-dimension of the emotional reactivity scale, female participants ($\bar{x}$ =2.84±.779) compared to male participants ($\bar{x}$ =2.59±.712); appear to have higher sensitivity.

Table 4. Comparison of Emotional Reactivity and Psychological Adaptation Skills of Participants in Sports Branches

Scale	Sports Branches	N	x̄	Sd.	t	p
Emotional Sensitivity	Individual Sports	143	2.56	.719	-2.930	**.004***
	Team Sports	66	2.87	.740		
Responsiveness	Individual Sports	143	2.43	.655	-2.827	**.005***
	Team Sports	66	2.72	.723		
Resilience	Individual Sports	143	2.09	.670	-2.132	**.034***
	Team Sports	66	2.31	.662		
Emotional Reactivity Total	Individual Sports	143	2.33	.603	-2.903	**.004***
	Team Sports	66	2.59	.629		
Anxiety	Individual Sports	143	1.88	.751	-1.996	**.047***
	Team Sports	66	2.10	.745		
Depression	Individual Sports	143	1.95	.866	-1.029	.304
	Team Sports	66	2.08	.835		
Stress	Individual Sports	143	2.09	.724	-2.400	**.017***
	Team Sports	66	2.34	.665		

As seen in Table 4, in the comparison of the emotional reactivity and psychological adjustment skills of the participants according to the sports branch; There is a significant difference in all sub-dimensions except depression (p=.304).

According to this, In all sub-dimensions of sensitivity, reactivity, endurance, emotional reactivity total, anxiety and depression, the participants who are interested in team sports compared to the participants who are interested in individual sports; appear to have higher averages.

Table 5. Comparison of Emotional Reactivity and Psychological Adaptation Skills Related to the Ages of the Participants

Scale	Age	N	x̄	Sd.	F	p	Post hoc
Emotional Sensitivity	18 years and under[1]	48	2.40	.876	3.839	**.011***	**1<2,4**
	19-23 years[2]	84	2.73	.685			
	24-28 years[3]	45	2.61	.690			
	29 years and over[4]	32	2.93	.608			
Responsiveness	18 years and under[1]	48	2.30	.796	3.327	**.021***	**1<2,4**
	19-23 years[2]	84	2.65	.651			
	24-28 years[3]	45	2.45	.599			
	29 years and over[4]	32	2.63	.655			
Resilience	18 years and under[1]	48	2.03	.656	2.676	**.048***	**1,3<2**
	19-23 years[2]	84	2.28	.679			
	24-28 years[3]	45	2.00	.612			
	29 years and over[4]	32	2.27	.711			
Emotional Reactivity Total	18 years and under[1]	48	2.22	.693	3.678	**.013***	**1<2,4**
	19-23 years[2]	84	2.52	.602			
	24-28 years[3]	45	2.31	.535			
	29 years and over[4]	32	2.57	.596			
Anxiety	18 years and under[1]	48	1.90	.697	.702	.552	**-**
	19-23 years[2]	84	2.03	.772			
	24-28 years[3]	45	1.83	.670			
	29 years and over[4]	32	1.96	.902			
Depression	18 years and under[1]	48	2.02	.855	2.402	.069	**-**
	19-23 years[2]	84	2.14	.936			
	24-28 years[3]	45	1.85	.667			
	29 years and over[4]	32	1.72	.816			
Stress	18 years and under[1]	48	2.18	.735	3.097	**.028***	**3<2**
	19-23 years[2]	84	2.31	.695			
	24-28 years[3]	45	1.92	.663			
	29 years and over[4]	32	2.13	.731			

As seen in Table 5, in the comparison of emotional reactivity and psychological adjustment skills according to the age of the participants; There is a significant difference in all sub-dimensions except anxiety and depression sub-dimensions.

According to this; According to the total dimensions of sensitivity, responsiveness, emotional reactivity, the participants aged 19-23 and 29 and over compared to the participants under the age of 18; In the resilience sub-dimension, the participants aged 19-23 compared to the participants under the age of 18 and between the ages of 24-28; In the stress sub-dimension, it is seen that the participants in the 19-23 age range have higher averages than the participants in the 24-28 age range.

Table 6. Comparison of Emotional Reactivity and Psychological Adaptation Skills of Participants' Sports Ages

Scale	Sport Ages	N	x̄	Sd.	F	p	Post hoc
Emotional Sensitivity	4 years and under[1]	17	2.31	.990	2.898	**.036***	**1,2<3**
	5-8 years[2]	58	2.52	.719			
	9-12 years[3]	52	2.80	.757			
	13 years and over[4]	82	2.63	.653			
Responsiveness	4 years and under	17	2.20	.871	2.573	.055	-
	5-8 years	58	2.42	.692			
	9-12 years	52	2.62	.645			
	13 years and over	82	2.61	.651			
Resilience	4 years and under	17	1.96	.649	1.278	.283	-
	5-8 years	58	2.13	.643			
	9-12 years	52	2.30	.665			
	13 years and over	82	2.14	.699			
Emotional Reactivity Total	4 years and under	17	2.13	.752	2.355	.073	-
	5-8 years	58	2.33	.612			
	9-12 years	52	2.54	.619			
	13 years and over	82	2.45	.586			
Anxiety	4 years and under	17	1.95	.762	.297	.828	-
	5-8 years	58	1.87	.692			
	9-12 years	52	2.01	.740			
	13 years and over	82	1.96	.812			
Depression	4 years and under	17	2.13	.956	2.138	.097	-
	5-8 years	58	2.08	.907			
	9-12 years	52	2.12	.847			
	13 years and over	82	1.80	.783			
Stress	4 years and under	17	2.09	.829	1.097	.352	-
	5-8 years	58	2.21	.671			
	9-12 years	52	2.29	.737			
	13 years and over	82	2.08	.703			

As seen in Table 6, in the comparison of the emotional reactivity and psychological adaptation skills of the participants according to their sports ages; only the sensitivity (p=.036) sub-dimension appears to differ. According to this, in the sensitivity sub-dimension, participants with 9-12 years of sports age have higher averages than participants who are under 4 years and 5-8 years of sports age.

Table 7. The Relationship Between Emotional Reactivity and Psychological Adaptation Skills of the Participants

		1	2	3	4
Emotional Reactivity Total	r	1	-	-	-
	p	-			
	n	209			
Anxiety	r	.560**	1	-	-
	p	.000	-		
	n	209	209		
Depression	r	.524**	.687**	1	-
	p	.000	.000	-	
	n	209	209	209	
Stress	r	.676**	.728**	.718**	1
	p	.000	.000	.000	-
	n	209	209	209	209

As seen in Table 7, a positive and strong relationship was found between emotional reactivity and anxiety (r=.560**), depression (r=.524**) and stress (r=.676**) levels of the research group.

DISCUSSION

In this study, it was aimed to examine the relationship between emotional reactivity and psychological adjustment skills of elite athletes according to various demographic variables. Considering the findings of our study, a positive and strong relationship was found between the emotional reactivity of the participants and their anxiety, depression and stress levels. Emotional reactivity is the individual's reactions to emotions that arise in his relationships with other individuals throughout his life (Yurdakul & Üner, 2015). Therefore, experiencing negative emotions leads to the development of negative emotional reactivity. In this context, these emotional reactions in the individual can lead to psychopathic problems. The individual may become depressed, and this will lead to a decrease in the individual's satisfaction (Cavanagh et al., 2003). Negative emotions are important triggers of emotional reactivity (Berry et al., 2005; Edmondson, 2004).

It is thought that when an individual encounters an undesirable situation in his daily life, his reactions to this situation are closely related to his psychological resilience levels. Individuals with high resilience in the face of events will also be more likely to cope with the negative consequences of these events (Zaferoğlu, 2018). Rosen et al. (2010) stated that positive emotion regulation skills prevent exaggerated and destructive emotions, and therefore prevent emotional reactivity. It is consistent with the hypothesis that high-intensity positivity may be associated with some forms of maladjustment, while low-intensity positivity is more likely to be associated with well-being (Kochanska et al., 2007). Individuals with high psychological resilience feel more positive emotions such as hope and love and less negative emotions such as anger and anxiety in their daily lives, and these individuals see themselves as happier individuals (Chevans et al., 2016; Sahranç et al., 2017; Zhang et al., 2015). At above-average levels of emotional reactivity, there is a very strong relationship between stress and depressive symptoms. This suggests that emotional reactivity to stress is an important moderator of the relationship between stress and depression; As emotional reactivity increases, the relationship between stress and depression becomes stronger (Charbonneau et al., 2009). Also the study conducted by Çakır (2023) explored the relationship between physical activity, emotional well-being, and the perceived impact of COVID-19 on quality of life among students. The findings indicated that students who engaged in physical activities reported experiencing lower levels of negative emotions. Furthermore, the adverse impact of the COVID-19 pandemic on the quality of life was perceived to be less severe among physically active individuals compared to their less active counterparts.

Wåhlstedt et al. (2019) stated that negative emotional reactivity leads to impulsive behaviors, decreased attention, focusing problems and destructive behaviors. Henry and Dargel (2019) stated that difficulty in emotion regulation and emotional reactivity are effective in the etiology of mood disorders such as depression, anxiety and bipolar disorders. Studies have shown that perceived social support and psychological resilience are low; In case of any problem, stress, depression, anxiety and aggression lead to the emergence of emotional reactions in the individual. Increasing perceived social support leads to an increase in psychological resilience, control of emotions and a decrease in emotional reactivity (Töremen & Çankaya, 2008; Çubukçu et al., 2010; Kılıç et al., 2007; Yurdakul & Üner, 2015). It is beneficial to give appropriate reactions to situations and to develop positive coping and problem-solving skills. In this case, the person does not experience emotional reactivity and there is no exaggeration in his behavior (Campos et al., 2004).

Conclusion

There is an important relationship between emotional reactivity and the maintenance of psychological adjustment. In order to understand how these two concepts affect each other, we need to consider some points. Emotional reactivity and psychological adjustment: Emotional reactivity is about how an individual expresses and responds to emotional experiences. Psychological adjustment varies with an individual's ability to cope with stress, maintain emotional balance and adapt to life. The relationship between the two is important in how emotional reactions can change their psychological adjustment and how psychological adjustment skills can regulate their emotional reactions.

Recommendation

Athletes can be given seminars on emotional reactivity and psychological adaptation skills. Studies can be conducted with other sample groups. A meta-analysis can be done by examining research on emotional reactivity and psychological adjustment skills. Different demographic variables can be included in the study.

Limitations

The limitations of this study require careful consideration of its findings. First, the study is limited by its reliance on convenience sampling methods as well as its ability to establish cause and effect relationships as a result of its correlational and cross-sectional design. Furthermore, the absence of a clinical group within the sample should also be recognized as a limitation. In addition, the qualities of elite athletes were only assessed through self-report, thus introducing another limitation. Consequently, in future research, using a mixed research approach that includes the perspectives of both elite athletes and coaches through triangulation may provide a more comprehensive view. Finally, it is important to note that the research only focused on elite athletes from the Turkish sample.

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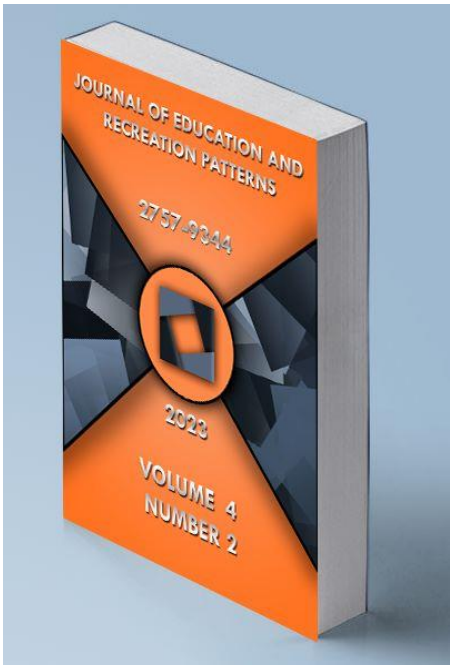
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Content Analysis of Academic Studies Related to Orienteering Sport in Türkiye Between 2001-2021

Barış DERİNCE[1], Mehmet GÜLLÜ[2]

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[1]Barış Derince, İnönü University Faculty of Sport Sciences, barisderince@hotmail.com, https://orcid.org/ 0000-0002-8824-301X

[2]Mehmet Güllü, İnönü University Faculty of Sport Sciences, mehmet.gullu@inonu.edu.tr, https://orcid.org/ 0000-0002-0930-7178

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Content Analysis of Academic Studies Related to Orienteering Sport in Türkiye Between 2001-2021

Barış Derince[1], Mehmet Güllü[2]

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ABSTRACT
The aim of this study is to examine the data on publication type, publication year, publication language, research method, data collection tools, sample type and research topics in academic studies related to orienteering sport in Türkiye between 2001-2021. Content analysis method, one of the qualitative research methods, has been used as the research model. The data were collected by literature review and analyzed using explanatory content analysis technique. As a result, it has been determined that the number of studies has increased as of 2017, the cognitive aspect of orienteering sports has come to the fore as a subject, and the number of doctoral dissertations is insufficient. In the studies examined, Turkish as a language, quantitative studies as a method, and athletes as a sample type are more numerous. According to the results of this study, the following suggestions can be made: The number of doctoral theses, the number of studies in English language that can be published in international refereed journals, the number of studies conducted by qualitative and mixed methods, studies related to different groups such as referees, coaches and managers should be increased. Orientation sport-specific attitude scale or questionnaire development studies should be done. A wider literature review should be made by considering the current developments and the relations of orienteering sports with different disciplines. Since orienteering sport has cognitive characteristics and can be used as an educational tool, studies related to different disciplines should be carried out.

Keywords: Academic Studies, Content Analysis, Orienteering

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INTRODUCTION

Orienteering, whose popularity and attraction increases day by day by many people from different walks of life, is an outdoor sport that aims to find the checkpoints chosen on the map in order. There are four major disciplines that the International Orienteering Federation recognizes (IOF). These are running, cycling, skiing and trail orienteering (IOF, 2021). It is also done in different ways and conditions such as underwater, canoeing, parachuting, horse-riding, motorcycling, sailing and mountain skiing (Derince & Güllü, 2020; Güngör, 2016). It involves not only physical activity, but also mental activity (Galan 3t al.,2019). It is a sport that does not limit participants in terms of age and physical strength in which the weak can surpass the strong, provides people of all ages with the opportunity to do sports and offers reasons to spend time in nature (Derince & Güllü, 2020). It has significant effects on individuals' socialization and stability levels (Kalkan ve Güzel, 2018). It is both a fun and educational teaching tool (Notarnicola ve ark., 2012; Di Tore, 2016). Since orienteering is a nature sport, it is also important in terms of its relationship with other living things such as plants and animals (Derince ve Güllü, 2020). It also has the function of being an educational tool (Kelly, 2014; Williams, Cliffe &Primary, 2011). In the literature, it has been revealed that orienteering sport has many physical, mental, social and psychological benefits for the individual (Blagi ve ark., 2018; Bektaş ve ark., 2019; Güllü ve ark., 2018a; Deniz, 2012). In addition, there are positive contributions to society, nature and the environment.

Türkiye is an advantageous country for orienteering with its favorable climatic conditions and geographical structure that allows competitions in different disciplines to be held (TOF, 2020; Güllü et al., 2018b). Every year, thousands of people participate in official and private competitions specified in the Annual Activity Calendar of the Turkish Orienteering Federation. In addition, there is significant participation in World Orienteering Day, promotional activities organized in schools and other orienteering-related activities (IOF, 2021; TOF, 2020; WOD, 2021). It can be said that more and more people are interested in this sport every year as the recognition of orienteering sport increases.

Orienteering activities, the social and economic effects they create in the regions where they are carried out and their contributions to the promotion of the region are remarkable. For this reason, the demand for orienteering organizations of local governments has increased. With the increase in the interest of local administrations, the recognition of orienteering sport has increased in the events held in different parts of the country. It is seen that the increase in the recognition of orienteering sports affects individuals who will do academic work.

By analyzing the academic studies on orienteering sport, the following contributions can be made:

- The trend in academic studies on orienteering in Türkiye can be determined.
- With the determination of which features of the orienteering sport are examined, less studied or unexplored areas can be revealed.
- Information can be obtained about how academic studies on orienteering sport affect the development level of orienteering sport in Türkiye.
- Information that will contribute to those who are interested in orienteering sports can be accessed.
- Central and local governments can access data that can be decisive in their activities and policies.
- It can guide the studies to be done about the orienteering sport or the disciplines it is related to orienteering.

The aim of this study is to analyze the academic studies related to orienteering in

Türkiye in a comprehensive way by focusing on parameters such as publication type, publication year, publication language, research method, data collection tools, sample type and research topics. Thus, we wish to reveal trends and patterns in academic research on orienteering sport, contribute to the development of this sport and guide for future research.

METHOD

Research Design

In this study, one of the qualitative research methods, which is content analysis methods was used (Yıldırım & Şimşek, 2016). Content analyses are a systematic form of study that aims to reveal general trends and research results in qualitative and quantitative studies on a designated research topic (Çalık &Sözbilir, 2014; Selçuk et al., 2014; Suri &Clark, 2009). The reason for choosing the content analysis method in this study; is the desire to reveal the trends, patterns in the academic research conducted in Türkiye on the sport of orienteering and to provide guidance for potential future research on the sport of orienteering. The results obtained; It can make various contributions to the people from different sections of life such as academic studies, athletes, coaches, educators, sports administrators, central and local administrators.

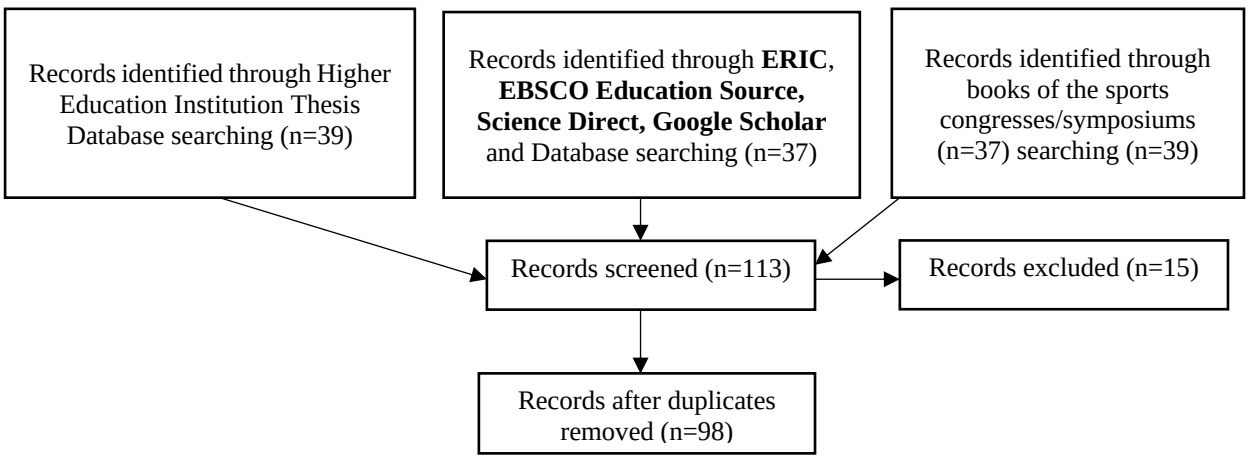
Data Collection Method

Data were collected by literature review. Higher Education Institution Thesis Database was scanned to reach graduate theses. Publication directories such as ERIC, EBSCO Education Source, Science Direct, Google Scholar and TRindex were scanned to reach the articles. In order to reach oral presentations, the proceedings books of the sports congresses/symposiums that were held between the years 2001 and 2021 were researched. While researching, the keywords "oryantiring", "orienteering" and "orient" were used.

Criteria for Inclusion in the Research

The research covers postgraduate theses on orienteering sport in Türkiye between 2001-2021, articles published in refereed scientific journals and oral presentations presented in sports congresses/symposiums. As a criterion for inclusion in the study, attention was paid to the fact that the studies were related to orienteering sports and were published in the relevant years. In addition, among the different types of published studies on the same subject written by the same author or authors only one was included in the study. For example, articles produced from published graduate theses and oral presentations published as articles or theses were excluded from the scope of research. In this context, 5 articles and 10 oral presentations were excluded from the scope of the study. In the study, 39 graduate theses, 32 articles and 27 oral presentations were examined.

Figure 1. Study Flowchart



Data Analysis

With the aim of the classify the data in the examined studies in an orderly manner, a special data classification form was prepared by the authors for this study. The opinions of two academicians who are experts in their fields were consulted about the suitability of the prepared form. Experts whose opinions were consulted confirmed that the form was appropriate within the scope of this research. The data classification form for each study examined in this study was filled out by the authors. Common data in the completed forms are accepted. In the data with different opinions, the opinions of two academicians who are experts in their fields were taken. Based on the opinions of the experts according to the majority of opinions the data were accepted or not accepted. All data determined in this context were transferred to the Excel sheet. The transferred data were classified according to parameters such as publication type, publication year, publication language, research method, data collection tools, sample type and research subjects. The classifications are intended to reveal trends and patterns in academic research related to the sport of orienteering.

FINDINGS

In this part of the study, the findings of the academic studies on orienteering sport in terms of different parameters are included.

Distribution of Academic Studies on Orienteering Sport by Type and Publication Years

Table 1. Distribution of Academic Studies by Publication Type and Years

	Years																	Total
Types	2001	2005	2006	2007	2008	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Doctoral Thesis											1				1	1	1	**4**
Master's Thesis	1	1	1	1	2	1	1	2	2			2	3	2	6	6	4	**35**
Articles					1		3	3	2	1	1	3	5	6	3	1	3	**32**
Oral Presentations			1		1	2		1		1	3	1	6	5	2	2	2	**27**
Total	**1**	**1**	**2**	**1**	**4**	**3**	**4**	**6**	**4**	**2**	**5**	**6**	**14**	**13**	**12**	**10**	**10**	**98**

The distribution of studies related to orienteering sports in Türkiye is meticulously defined in Table 1, showcasing the comprehensive spectrum of scholarly engagement based on both the publication type and the respective year. The data provide information on academic studies over the years involved. In particular, the year 2017 stands out with the highest number of publications, which corresponds to 14 different studies, including 3 master's theses, 5 articles, 6 oral papers. In addition, in the following years, 13 studies, including 2 master's theses, 6 articles, 5 oral papers, were exhibited in 2018, followed by 12 studies, including 1 doctoral thesis, 6 master's theses, 3 articles, 2 oral papers in 2019.

10 studies were conducted in each of the years 2020 and 2021 and solid scientific participation was ensured. in each of the years 2012 and 2016, 6 studies were conducted and a moderate scientific effort was observed. Significant contributions were made with 5 studies in 2015 and 4 studies for each of them in 2008, 2011 and 2013. There were 3 studies in 2010, 2 studies in 2006 and 2 studies conducted in 2014. These studies are noteworthy, although moderately low. One study was conducted in 2001, 2005 and 2007. In 2002, 2003, 2004 and 2009, no studies were found. It is especially noteworthy that there has been an increase in graduate theses since 2019 and that no doctoral thesis was published until 2015. When the master's theses are examined, the most scientific contributions were made by publishing 6 master's theses in 2019, 6 in 2020 and 4 in 2021. it is noteworthy that the increase in graduate theses has been observed since 2019. The number of articles and oral papers reached the highest

level in 2017 and 2018. Accordingly, 6 oral papers, 5 articles were published in 2017 and 6 articles, 5 oral papers were published in 2018. Based on these data, it can be said that academic studies conducted on orienteering sport have increased significantly since 2017 and have diversified as a genre.

Publication Languages of Academic Studies on Orienteering Sport

Table 2. Distribution of Academic Studies by Languages

Types	Turkish	English	Total
Doctoral Thesis	4	0	**4**
Master's Thesis	34	1	**35**
Articles	18	14	**32**
Oral Presentations	22	5	**27**
Total	**78**	**20**	**98**

The publication languages of the studies on orienteering sports in Türkiye are shown in Table 2. Accordingly, 78 of the 98 published studies are in Turkish. 14 of the studies published in English are articles, 5 are oral presentations and 1 is a master's thesis.

Research Methods Used in Academic Studies on Orienteering Sport

Table 3. Research Methods Used in Academic Studies on Orienteering Sport

Types	Quantitative	Qualitative	Mixed Research	Total
Doctoral Thesis	1	2	1	**4**
Master's Thesis	28	4	3	**35**
Articles	20	10	2	**32**
Oral Presentations	19	8	0	**27**
Total	**68**	**24**	**6**	**98**

The research methods used in academic studies on orienteering sport in Türkiye are shown in Table 3. Accordingly; 68 of the academic studies on orienteering sport have been conducted quantitative research methods, 24 academic studies are qualitative and 6 academic studies are mixed methods.

Data Collection Tools Used in Academic Studies Related to Orienteering Sport

Table 4. Data Collection Tools Used in Academic Studies

	f	%
Scale	41	34,8
Physical/Physiological Measurements and Tests	28	23,7
literature review	17	14,4
Interview	13	11
Observation	12	10,2
Survey	7	5,9
Total	**118**	**100**

Data collection tools used in academic studies related to orienteering sport in Türkiye are shown in Table 4. Accordingly, the most preferred data collection methods in studies on orienteering sports are scales. As a data collection tool, scales were used in 41 of the studies, physical/physiological measurements and tests in 28, literature review in 17, interviews in 13 studies, observations in 12 and questionnaires in 7.

Types of Samples Used in Academic Studies Related to Orienteering Sport

Table 5. Types of Samples Used in Academic Studies

Types	f	%
Athletes	53	63,9
Student	21	25,3
Administrator or Administrative Staff	4	4,8
Physically Disabled Individual	2	2,4
Referee	1	1,2
Individual	1	1,2
Teacher	1	1,2
Total	**83**	**100,0**

The types of samples used in academic studies on orienteering sport in Türkiye are shown in Table 5. Accordingly, the most preferred sample type in studies on orienteering sports are athletes. Academic studies on orienteering sports include 53 athletes, 21 students, 4 managers and administrative staff in 4. Other sample types are referees, children with physical disabilities, individuals and teachers.

Topics of Academic Studies on Orienteering

Table 6. Subject Distributions of Academic Studies

	Frequencies (f)				
Types	**Doctoral Thesis**	**Master's Thesis**	**Articles**	**Oral Presentations**	**Total**
Studies on Cognitive Properties	2	6	8	8	**24**
The Effects of Orienteering Sport on Individuals		12	7	1	**20**
Studies on Physical and Physiological Properties	1	6	4	6	**17**
Interactions of Cognitive and Motoric Characteristics		3	2	1	**6**
Introduction of Orienteering Sport		2	1	1	**4**
Studies on Orienteering in the Field of Sports Management	1			4	**5**
The Relationship of Orienteering Sport with Nature		1	2	1	**4**
Studies on Leisure and Socialization		1	2	1	**4**
Effects of Orienteering Sport on the Region			2	1	**3**
Reasons to Participate in Orienteering Sport				2	**2**
Review of Developed Applications			3		**3**
Studies on Route Selection		3			**3**
Problems of orienteering athletes		1			**1**
Examination of Studies with Orienteering Sport			1	1	**2**
Total	4	35	32	27	98

The subject distributions of academic studies on orienteering sport in Türkiye are shown in Table 6. Accordingly, the most frequently addressed issues in academic studies on orienteering are cognitive characteristics. Cognitive characteristics were examined in 24 of these studies, the effects of orienteering sport on individuals in 20 studies, and physical/physiological characteristics in 17.

DISCUSSION

In this part of the study, the findings of each of the research questions are discussed by comparing them with other studies.

According to the data of the Thesis Center of the Council of Higher Education (National Thesis Center, 2022), there are 19.27% of the doctoral theses published between 2001-2021 in Türkiye when the master's and doctoral theses are compared. In the same period, the rate of doctoral thesis in graduate theses within the scope of analysis related to orienteering sport was 10.25%. Compared to other studies: Yılmaz (2019), in his study for the hearing impaired in the field of sports science; Between 2008 and 2018, the rate of doctoral dissertations was 27.58%; Çetinkaya (2011) examined the graduate theses made in the field of recreation in Türkiye; It revealed that the doctoral thesis rate is 17.2%.

According to the records of the Thesis Center of the Council of Higher Education, the rates of doctoral theses in other sports branches between 2001-2021 are as follows: Weightlifting (36.4%), skiing (24.3%), Wrestling (20.7%), gymnastics (20.4%), archery (18.8%), taekwondo (14.1%), judo (11.8%).

According to these data, it can be said that the number of doctoral theses on orienteering sport is low. Since master's programs are more common than doctoral programs, it is usual for the doctoral thesis rate to be lower than the rate of master's thesis (Şahin et al., 2013). However, it is noteworthy that when compared to the doctoral thesis rates in other sports, it turns out that the doctoral thesis rate in orienteering sport is much lower. The possible causes of this condition are indicated below:

- Researchers may not have been able to afford the difficulties they were likely to face in collecting data.
- Researchers may not have been able to reach a sufficient number of equipped people required for orienteering events.
- It may be considered that individuals with sufficient equipment related to the sport of orienteering have not yet performed academic studies in sufficient numbers.
- Researchers may not have found the financial support that may be necessary for orienteering activities.

Doctoral theses are expected to fulfill certain qualifications, such as bringing a scientific innovation, the creation of a new method or the application of a method in a new field (Akbulut et al., 2013). Therefore, with the increase in the number of doctoral theses related to orienteering, it can be assumed that he will make the following contributions to the sport of orienteering:

- It can contribute to the recognition of the sport of orienteering
- New training techniques specific to the sport of orienteering can be developed.
- The effects of orienteering sport can be studied in a more comprehensive way.
- The relationship of the discipline with other disciplines can be studied in a comprehensive way.
- The effects of orienteering sport on daily life can be examined in more detail.

Only 5 of the graduate theses on orienteering sport have been translated into article format. These articles were published after 2017. There are studies that can contribute to the literature from the papers in the congresses and symposiums. It is evaluated that it would be appropriate to examine these papers and publish them in article format with more accessibility.

The first academic study on orienteering sport in Türkiye is a master's thesis which published in 2001. The year of the doctoral thesis carried out is 2015, the first article is 2008 and the first paper is 2006. 70 of the 98 studies examined were from 2015 and beyond. While the number of theses written until 2015 was 12, this figure has reached to 27 from 2015 to date. In the articles, while the number of studies written until 2015 was 10, this figure has reached to 22 from 2015 to date. In the oral presentations, while the number of studies until 2015 was 6, the number of studies carried out from 2015 to date has been 21. In particular, the obvious increase that has emerged since 2015 is noteworthy. It can be thought that the increasing number of studies trigger each other and cause the emergence of studies in different types. In addition, it is believed that orienteering sports attract the interest of local governments, activities are held in different parts of Türkiye, and the demand generated in this regard may be related to the increasing number of studies. Directly or indirectly, these studies can be said to cause orienteering sport to be recognized more, to reach more people and to increase the number of athletes. In recent years, the demand for organizations related to orienteering sports performed abroad has increased. Similarly, there is an increase in participation in organizations such as orienteering camps organized within the scope of sports tourism from abroad. The most important thing is that the studies form the basis for different applications and studies that will be carried out by creating a literature and contribute to the formation of new fields of study. For this reason, it is proposed that the studies to be carried out will be supported financially and spiritually by the federation authorities, local and central governments and the academic community.

The publication language of the studies on orienteering sports is mostly Turkish (79.6%). 14 of the studies in English are articles, 5 of them are oral presentations and one of them is a graduate thesis. Approximately 43.8% of the studies published as articles are in English. Graduate theses written in Türkiye are mostly published in Turkish. For this reason, almost all of the graduate theses examined within the scope of the research are in Turkish. The reason why only 5 of the 27 oral presentations examined within the scope of the research were in English may be that researchers tend to present their oral presentations more domestically for time, distance and economic reasons. When we examined it in terms of articles, a more balanced ratio emerged. Of the articles examined within the scope of the research, 18 of them are in Turkish and 14 of them are in English. The reasons for the high number of articles published in Turkish are; It may be that researchers want their studies to be published in Turkish or that researchers do not know enough English to write articles. Especially international refereed journals mostly publish in English and these publications are at the forefront in terms of scientific quality because of the citation indexes they find place in. Publications in journals of this nature provide a number of respects to the researcher and the universities they are affiliated with and contribute to performance measurements (Poyrazlı & Şahin, 2010). It is evaluated that the articles to be published in these journals will contribute to the performance of the researchers.

Quantitative research methods have been mostly used (69.4) in the academic studies on orienteering sport within the scope of the research. To compare with other studies; In a study examined the graduate theses and articles made in the field of sports sciences related to the hearing impaired between 2008-2018, there are 57 quantitative, 2 qualitative and 1 mixed method (Yılmaz, 2019); In a study examined the oral presentations in the international sports science congresses organized by the Sports Sciences Association in Türkiye; of the total 1624 papers, 89% are quantitative and 11% are qualitative (Bal & Pepe, 2016); In a study where the

analysis of academic studies on sports management in Türkiye was conducted; 70% of the 511 studies were prepared using quantitative method (Yavuz et al., 2018); In the theses on sports management in Türkiye, it is stated that 72.1% of them are prepared by using quantitative, 22.3% by qualitative and 5.6% by using mixed method (Biricik, 2020). According to these data, it is evaluated that there is a tendency towards quantitative research methods in general in the studies carried out in the field of sports sciences, including orienteering. In recent years, with the increase in the number of studies on orienteering sport, it is seen that the variety of methods used in studies have increased.

The ways data collected in academic studies on orienteering sport are asking questions (surveys, scales and interviews), making physical and physiological measurements, screening resources and making observations. In some of the academic studies on orienteering sport; it was seen that the fiction was not well established, the criteria for determining the questionnaires and scales, the introduction of the scale, the explanations about validity and reliability were not made adequately. Tuncel (2008); In his study, which examined the qualities of the researches sent from our country to the international sports sciences journals similarly stated that "Failure reveals the research objectives and determining the appropriate methods clearly affect the quality of the researches adversaly" (Tuncel, 2008). It is naturaly inevitable to have pros and cons for the data collection tools chosen (Sevencan & Çilingiroğlu). For this reason, the selection of data collection tools should be treated more sensitively and carefully.

The most frequently used sample type in academic studies on orienteering sport relies on athletes and students. Similarly, in a study examined by graduate theses in the field of sports sciences in Türkiye, it has been stated that athletes and students are the most used sample types (Temel et al., 2016). In a study in which the analysis of academic studies on sports management in Türkiye conducted, it has been stated that students have been preferred more because they are easily accessible as a working group (Yavuz et al., 2018). Orienteering is a sport, so it is natural to examine athletes in research. The examination of students' attitudes and behaviors related to orienteering may be related to the association of orienteering sport with education. There are studies in the literature stated that orienteering is not only a performance sport, but also an educational tool and a teaching technique (Kelly, 2014; Williams et al., 2011). Twilley, Holland, and Morris (2022) conducted a study investigating the disparities in subjective well-being and leisure satisfaction between participants in outdoor and indoor recreational activities. The findings revealed a notable difference in the subjective well-being scores between the two groups, with outdoor recreation participants scoring higher than their indoor counterparts. Additionally, individuals engaging in outdoor recreation reported higher levels of leisure satisfaction compared to those participating in indoor recreation. The number of studies carried out different groups such as coaches, managers and referees, which are other elements of orienteering sport, are very small. For this reason, it can be thought that increasing the studies related to other elements of orienteering sport can make positive contributions to the development of orienteering sport and to the managers of orienteering sport.

The main benefits of sport can be broadly characterized as physical, cognitive, psychological, and social (Mirzeoğlu, 2017; Yetim, 2000). These features have also come to the fore in academic studies on orienteering sports. In the academic studies examined within the scope of this study, the number of studies on the cognitive characteristics of orienteering sport is high. The effects of orienteering sport on individuals and the physical/physiological parameters of orienteering athletes have also been frequently examined. In order to compare this situation with other studies, similar studies in the field of sports sciences in Türkiye have been examined. Temel et al. (2016), in their studies examining the graduate theses made in the field of sports sciences in Türkiye; they found that movement and education, sports management, psycho-social areas in sports and sports education were heavily covered. Çifçi (2014), in his academic study on the sport of swimming; it was determined that physiological

compatibility and psychological studies with motoric and anthropometric features were predominant in the field of health. Bal and Pepe (2016), in the sports-related papers presented at the congresses; stated that the studies carried out in the field of psychosocial field, movement and training sciences, sports and health, physical education and sports teaching came to the fore in sports. Yılmaz (2019), in his study; It has been stated that psychosocial field studies are more common in studies on hearing impaired people in the field of sports science. In the academic studies on orienteering, it was determined that cognitive characteristics were examined more intensively than other studies in the field of sports sciences. Cognitive characteristics are necessary for every sport, but the most important difference that distinguishes orienteering from other sports is that cognitive competencies can often take more precedence over physical skills. It can be said that orienteering sport is also different from other sports branches and studies in the field of sports sciences due to the fact that it can be used as an educational tool and interacts with different fields. Therefore, it may be thought that it would be useful to examine the cognitive contributions of orienteering in particular in more detail. The data to be obtained; positive contributions can be made to the development of orienteering sport and disadvantaged individuals. Learning efficiency can be increased by conducting studies in accordance with different learning strategies with orienteering sports and practices. Considering the relationship of orienteering sport with other disciplines, contributions can be made in different areas such as geography, environmental awareness, nature awareness, ethical values acquisition, social solidarity. In the preliminary academic studies on orienteering sport, the promotion of orienteering sport was considered as a priority and it was determined that these studies also provided resources for following studies. In recent years, academic studies on orienteering have increased and with this fact, the relationships of orienteering sport with different fields have begun to emerge. In particular, it is thought that there is a need for further examination of its relations with other disciplines. The disciplines and suggestions that are considered to be missing in this regard are listed below:

- Related to Urban planning or municipality planning; issues such as the design of settlements, the creation of green areas.
- Related to Organizations and institutions related to the environment; applications designed in a way that can create awareness about the environment and nature.
- Related to management and organization; crisis management and management skills,
- Related to Sociology; the habits of coexistence of the individuals who make up the society and compliance with social rules,
- Related to health; correct movement habits, obesity, preventive measures
- Related to education; the development of orienteering practices that address different learning strategies and the effects of orienteering practices in education.

Conclusion

As a result; In the academic studies conducted on orienteering sport in Türkiye, it has been determined that the number of doctoral thesis studies is insufficient, the number of studies mainly in Turkish studies are on the rise, quantitative studies are more preferred, athletes are mostly examined as a sample type, and most importantly, the cognitive aspect of orienteering sport come to the fore as a subject in the studies.

Recommendation

According to the results of this study, the following suggestions can be made: The number of doctoral theses, the number of studies in English language that can be published in international refereed journals, the number of studies conducted by qualitative and mixed methods, studies related to different groups such as referees, coaches and managers should be

increased. Orientation sport-specific attitude scale or questionnaire development studies should be done. A wider literature review should be made by considering the current developments and the relations of orienteering sports with different disciplines. Since orienteering sport has cognitive characteristics and can be used as an educational tool, studies related to different disciplines should be carried out.

Limitations

In accordance with the criteria determined in this study, academic studies related to orienteering sports and practices were examined. However, there are also orienteering applications applied in different branches of science such as geography, engineering, science and technology. It is estimated that the examination of these studies will be useful in terms of revealing the relations of orienteering practices with different disciplines.

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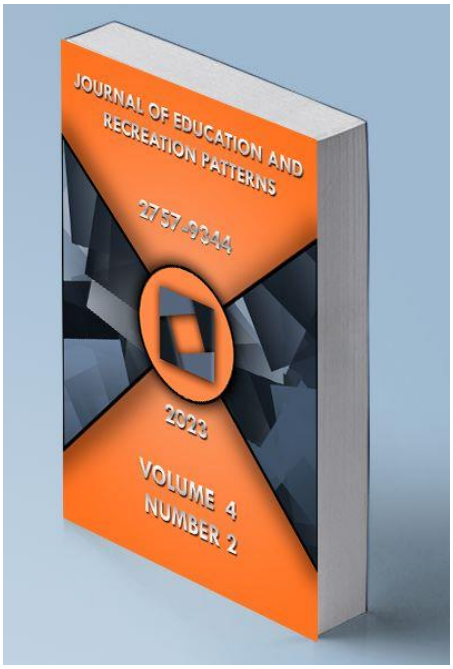
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Serpil AKÇINAR[1], Mahmut TOKCAN[2]

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[1]Serpil Akçınar, Inonu University, Department of Physical Education and Sports, Malatya/Türkiye, stimurkaanakcinar@gmail.com, https://orcid.org/0000-0001-9454-0582
[2]Mahmut Tokcan, Inonu University, Department of Physical Education and Sports, Malatya /Türkiye, mahmuttokcan@gmail.com, https://orcid.org/0000-0003-0462-8746

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Investigation of the Relationship between Liking of Children Levels and Attitudes Toward Teaching Profession of Physical Education Teachers

Serpil Akçınar[1], Mahmut Tokcan[2]

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ABSTRACT

This study examines the relationship between liking of children levels and attitudes toward teaching profession of permanent and contracted physical education teachers working in public schools within the Malatya Directorate of National Education, Turkey, in the 2021-2022 education period. In our study, age, gender, marital status, years of professional seniority, educational status, having children, and workplace locality were also examined in terms of subscales. 103 physical education teachers voluntarily participated in the study. The "Attitudes Toward Teaching Profession" scale developed by Demirel and Ünişen in 2015, the "Barnett Liking of Children" scale developed by Barnett and Sinsini in 1990 and adapted into Turkish by Duyan and Gelbal in 2008, and a personal information form were applied to the teachers who participated in the study based on volunteerism. Quantitative research methods and techniques were used in this study. The correlational survey model, one of the general surveying models, was used. Prior to analysis, data underwent a normality test confirming a normal distribution. Pairwise comparisons were assessed using Independent Samples t-test, and three-or-more-sample comparisons utilized One-Way Analysis of Variance (ANOVA). The Tukey test identified specific group differences in significant outcomes. The study revealed no significant difference in liking of children concerning the variables examined. Nonetheless, significant disparities were noted in attitudes toward teaching based on gender, marital status, parental status, age, and professional experience. Ultimately, a weak, positive linear correlation was identified between physical education teachers' liking of children and their attitudes toward teaching.

Keywords: Child, Love, Physical Education Teacher, Professional Attitude, Teacher Attitude

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INTRODUCTION

Every living thing wants to be loved and to know that it is loved. For children, love is as important as needs such as shelter, nutrition, and protection. A large part of human life is spent in schools. Therefore, the teacher is one of the most important people in a child's life. For this reason, it is critival and even essential for teachers to have love for children and to make their students feel their love for children (Özkal, 2020). Research shows that love for children is one of the important factors affecting the preference for the teaching profession (Kabaklı Çimen, 2015). Teachers' love for children, making them feel this love, and taking care of children minimizes discipline problems and ensures that the lesson is taught with pleasure (Ergün & Özdaş, 1999). When the studies conducted with teachers on the subject of child love are examined, it is seen that these studies are mainly conducted for preschool and classroom teaching branches. However, love is one of the basic needs of students at all levels (Turan & Yılmazer, 2019). In fact, children's love needs are not limited to their parents at home and teachers at school. Children need love and to feel loved in every aspect of life. One of the biggest proofs of this situation is that many professional groups other than the teaching profession also conduct studies on child love. When the studies conducted in all professional groups are examined, it is seen that the studies are mostly conducted in the nursing profession.

Attitude is an important concept that enables children to make sense of the feelings shown to them by the adults and teachers they deal with. In fact, the concept of attitude is used to explain people's behavior. Attitude is defined as the sum of feelings, thoughts, and beliefs that an individual forms about people or objects, good or bad (Recepoğlu, 2013). Teachers' attitudes toward their profession are reflected in their behaviors and classroom environment. This situation affects the personality development of students, the quality of education, and the teacher-student relationship. Therefore, teachers' attitudes toward their profession should be positive (Semerci & Semerci, 2004). The determinat of teachers' attitudes toward their profession is the level of acceptance of the society. At this point, there is a reciprocal and interesting relationship between the acceptance level of society and teachers' attitudes toward their profession. Because the most important factor affecting the acceptance level of society is the attitude of the teacher toward his/her profession. One of the most important factors that shape people's lives is their profession. This is because choosing a profession that is suitable for one's temperament and character will help one to have a positive attitude toward his/her profession and thus to be happy, and doing a job that makes him/her happy will benefit the development of society. In addition, a person's attitude toward his/her profession will also affect the way he/she performs his/her profession and the tasks required by his/her profession (Uğurlu & Polat, 2011). Also the approach of servant leadership plays a crucial role in maintaining consistent education and enhancing its quality (Katıtaş, Doğan, & Yıldız, 2022).

The concept of attitude is, of course, not a concept that concerns only teachers. When the studies on this subject were examined, it was seen that the attitudes of many professional groups toward their professions besides teaching were examined. Studies examining the attitudes of physical education teachers toward their profession were conducted with senior undergraduate students. Therefore, this study, which was conducted with the participation of physical education teachers who have graduated and gained work experience by working in the field, is important because it is one of the few studies on the matter and fills a gap in the literature.

Studies in this field showed that love for children is related to teachers' attitudes toward their profession. However, there are not many academic studies in which these two concepts are combined in terms of physical education teachers. For this reason, this study, which examines the relationship between physical education teachers' liking of children and their attitudes toward teaching, is important in terms of taking its place among the few studies

in the literature. The concepts of Liking of children and attitudes toward the teaching profession are as important for physical education teachers as they are for all branches. It is thought that physical education teachers, who are one of the most mentally and physically active lessons for children, should have positive attitudes toward their profession and love for children.

It is thought that the findings to be obtained as a result of the study will guide the students who want to study physical education teaching department in terms of professional preference, and it will be useful for the Ministry of National Education to add new criteria related to love for children and professional attitude to the teacher appointment regulation by taking into account the results of the current study and similar studies. For these reasons, the current study has an importance.

The current study aims to examine the relationship between the level of liking of children and attitudes toward the teaching profession of permanent and contracted physical education teachers working in public schools within the Ministry of National Education (MoNE) in Malatya during the 2021-2022 education period. The study also examines the effects of marital status, gender, having children, educational status, age, workplace locality, and professional seniority on physical education teachers' liking of children level and attitude toward the teaching profession according to these variables.

When similar studies conducted with the teaching profession and other professional groups were examined, it was found that love for children predominantly affects the attitude toward the profession. Thus, one of the aims of this study is to emphasize that physical education teachers' love for children is one of the factors affecting their attitudes toward their profession considering the data to be obtained. Teaching is a profession that is intertwined with children and it is predicted that the attitude of the teacher toward his/her profession will be proportional to the love of children. For this reason, it is thought that people who prefer the teaching profession should first consider this factor.

The problem statement of the research is the question, "Is there a significant relationship between physical education teachers' liking of children level and their attitudes toward the teaching profession?"

The research assumptions are that the physical education teachers who participated in the study provided accurate and truthful answers to the measurement tools used in the study and that the size of samples in the study represents the population.

METHOD

Research Design

In this study, quantitative research methods and techniques were utilized to examine the relationship between physical education teachers' liking of children level and their attitudes toward the teaching profession. The correlational surveying model was used in our study and the correlational surveying model is one of the general surveying models (Büyüköztürk, 2008).

Population and Sample

The population of the study consists of 504 permanent and contracted physical education teachers working in the Malatya Directorate of National Education (DNE) in the 2021-2022 education period. A random sampling method was used while forming study sample. The sample of the study consisted of 103 physical education teachers working in Malatya DNE, who were reached by the random sampling method.

Data Collection Tools & Process

In this study, two measurement tools were applied to the participants. The first measurement tool is the "Attitudes Toward Teaching Profession Scale (ATTPS)", the reliability and validity study of which was conducted by Demirel and Ünişen in 2015, and the second measurement tool is the "Barnett Liking of Children (BLC)" developed by Barnett and Sinsini in 1990 and adapted into Turkish by Duyan and Gelbal in 2008. Along with these two measurement tools, the "Demographic Information Form" developed to reach the variables about the participants was applied.

The data collection tools were organized in a single form via Google Forms and sent to the participants via email. The delivery of the data collection tools to the participants as an internet-based online form enabled the data to be transferred to the analysis software accurately and quickly and had significant benefits in terms of cost.

Table 1. Participants' Demographic Information

Variable		**n**	**%**
Gender	Male	78	75.7
	Female	25	24.3
	Total	**103**	**100**
Marital Status	Single	16	15.5
	Married	87	84.5
	Total	**103**	**100**
Having a Child	Yes	75	72.8
	No	28	27.2
	Total	**103**	**100**
Age	21-30	9	8.7
	31-40	43	41.7
	41-50	46	44.7
	51 and above	5	4.9
	Total	**103**	**100**
Educational Status	Undergraduate	85	82.5
	Master's Degree	16	15.5
	PhD	2	1.9
	Total	**103**	**100**
Workplace Locality	Province Center	46	44.7
	District Center	41	39.8
	Village	16	15.5
	Total	**103**	**100**
Professional Seniority	1-5 years	15	14.5
	6-10 years	24	23.3
	11-15 years	26	25.2
	16-20 years	23	22.5
	21 years and above	15	14.5
	Total	**103**	**100**

The majority of the 103 participants are male (75.7%), married (84.5%), have a child (72.8%), fall within the age range of 41-50 (44.7%), hold an undergraduate degree (82.5%), work in a province center (44.7%), and have professional seniority distributed fairly evenly across various ranges, with the 11-15 years group being slightly more represented (25.2%).

Data Analysis

Descriptive statistics were used to find the frequencies and percentages of the data. For the data analyses, SPSS 22.0 package software was used. Before analyzing the data, a normality test was performed. After checking the skewness and kurtosis values, and since the skewness and kurtosis values were between +1.5 and -1.5 according to Table 1, it was accepted that the distribution of the data was normal (Tabachnick et al. 2007). Due to the normal distribution of the data, the Independent Samples t-test was used for pairwise comparisons and the One-Way Analysis of Variance (ANOVA) test was used for three or more comparisons. In significant results, the Tukey test, one of the Post-Hoc tests, was applied to determine which group the difference originated from. Pearson correlation test was applied to determine the relationship between physical education teachers' liking of children level and their attitudes toward teaching.

Table 2. Normality Test Results

Scale	Subscale		Statistics
Attitude Toward Teaching Profession	**Appreciating**	$\bar{X}$	3.475
		Sd	1.301
		Skewness	-0.507
		Kurtosis	-0.931
	Occupational Burnout	$\bar{X}$	3.650
		Sd	1.149
		Skewness	-0.629
		Kurtosis	-0.742
	Indifference	$\bar{X}$	3.870
		Sd	1.337
		Skewness	-1.072
		Kurtosis	-0.233
	Openness to Professional Development	$\bar{X}$	3.820
		Sd	1.295
		Skewness	-1.049
		Kurtosis	-0.086
	Attitude Toward Teaching Profession Total	$\bar{X}$	3.704
		Sd	1.186
		Skewness	-0.854
		Kurtosis	-0.448
Liking of Children	**Liking of Children**	$\bar{X}$	6.353
		Sd	0.599
		Skewness	-1.217
		Kurtosis	1.054

According to Table 1, since the skewness and kurtosis values are between +1.5 and -1.5, it is accepted that the distribution of the data exhibits normality.

FINDINGS

In this section, the findings obtained within the framework of the study were presented.

Table 3. t-Test Results According to Participants' Gender

Scale/Subscale	Gender	N	$\bar{X}$	Sd.	t	p
Appreciating	Male	78	3.39	1.33	-1.050	0.269
	Female	25	3.71	1.17		
Occupational Burnout	Male	78	3.50	1.17	-2.660	**0.010**
	Female	25	4.11	0.93		
Indifference	Male	78	3.69	1.39	-2.819	**0.007**
	Female	25	4.40	0.97		
Openness to Professional Development	Male	78	3.70	1.34	-1.562	0.122
	Female	25	4.17	1.09		
Attitude Toward Teaching Profession Total	Male	78	3.57	1.23	-2.255	**0.028**
	Female	25	4.10	0.92		
Liking of Children	Male	78	6.32	0.60	-0.771	0.443
	Female	25	6.43	0.58		

According to Table 3, there was a significant difference between physical education teachers' attitudes toward their profession and gender status ($p=0.028$, $p<0.05$). There was no significant difference between the liking of children level and gender status ($p=0.443$, $p>0.05$).

Table 4. t-Test Results According to Participants' Marital Status

Scale/Subscale	Marital Status	N	$\bar{X}$	Sd.	t	p
Appreciating	Married	87	3.61	1.27	2.546	**0.012**
	Single	16	2.73	1.25		
Occupational Burnout	Married	87	3.70	1.10	1.204	0.231
	Single	16	3.33	1.35		
Indifference	Married	87	4.00	1.26	2.414	**0.018**
	Single	16	3.14	1.53		
Openness to Professional Development	Married	87	3.97	1.18	2.466	**0.024**
	Single	16	2.96	1.55		
Attitude Toward Teaching Profession Total	Married	87	3.82	1.13	2.476	**0.015**
	Single	16	3.04	1.29		
Liking of Children	Married	87	6.38	0.59	1.176	0.242
	Single	16	6.19	0.63		

According to Table 4, there was a significant difference between physical education teachers' attitudes toward their profession and marital status (p=0.015, p<0.05). There was no significant difference between marital status and the liking of children level (p=0.242, p>0.05).

Table 5. t-Test Results According to Participants' Having Children Variable

Scale/Subscale	Having Children	N	X̄	Sd.	t	p
Appreciating	Yes	75	3.65	1.23	2.270	**0.025**
	No	28	3.00	1.36		
Occupational Burnout	Yes	75	3.77	1.07	1.795	0.076
	No	28	3.32	1.29		
Indifference	Yes	75	4.06	1.21	2.288	**0.027**
	No	28	3.33	1.51		
Openness to Professional Development	Yes	75	4.03	1.14	2.534	**0.015**
	No	28	3.24	1.50		
Attitude Toward Teaching Profession Total	Yes	75	3.88	1.08	2.577	**0.012**
	No	28	3.22	1.32		
Liking of Children	Yes	75	6.39	0.57	1.126	0.263
	No	28	6.24	0.66		

According to Table 5, there was a significant difference between physical education teachers' attitudes toward the teaching profession and having children (p=0.012, p<0.05). There was no significant difference between the liking of children level and having children (p=0.263, p>0.05).

Table 6. ANOVA Results According to Participants' Age

Scale/Subscale	Age	N	X̄	Sd.	F	p	Sig.
Appreciating	21-30 years (a)	9	2.62	1.14	2.947	0.037	-
	31-40 years (b)	43	3.44	1.21			
	41-50 years (c)	46	3.76	1.29			
	51 years and above (d)	5	2.60	1.64			
	Total	103	3.47	1.30			
Occupational Burnout	21-30 years (a)	9	3.16	1.25	2.334	0.079	-
	31-40 years (b)	43	3.67	1.08			
	41-50 years (c)	46	3.83	1.09			
	51 years and above (d)	5	2.63	1.59			
	Total	103	3.65	1.14			
Indifference	21-30 years (a)	9	2.96	1.44	3.129	0.029	-
	31-40 years (b)	43	3.97	1.35			
	41-50 years (c)	46	4.06	1.14			
	51 years and above (d)	5	2.76	1.80			
	Total	103	3.87	1.33			
Openness to Professional Development	21-30 years (a)	9	2.75	1.58	3.805	0.013	a<c
	31-40 years (b)	43	3.78	1.26			
	41-50 years (c)	46	4.14	1.07			
	51 years and above (d)	5	3.10	1.94			
	Total	103	3.82	1.29			

Attitude Toward Teaching Profession Total	21-30 years (a)	9	2.87	1.13	3.374	0.021	-
	31-40 years (b)	43	3.71	1.16			
	41-50 years (c)	46	3.95	1.07			
	51 years and above (d)	5	2.77	1.69			
	Total	103	3.70	1.18			
Liking of Children	21-30 years (a)	9	6.11	0.56	1.091	0.356	-
	31-40 years (b)	43	6.29	0.64			
	41-50 years (c)	46	6.45	0.55			
	51 years and above (d)	5	6.27	0.61			
	Total	103	6.35	0.59			

According to Table 6, there was a significant difference between physical education teachers' attitudes toward their profession and age status ($p=0.021$, $p<0.05$). There was no significant difference between the liking of children level and age status ($p=0.356$, $p>0.05$).

Table 7. ANOVA Results According to Participants' Educational Status

Scale/Subscale	Educational Status	N	$\bar{X}$	Sd.	F	p	Sig.
Appreciating	Undergraduate	85	3.41	1.37	0.563	0.571	-
	Master's Degree	16	3.79	0.84			
	PhD	2	3.54	0.64			
	Total	103	3.47	1.30			
Occupational Burnout	Undergraduate	85	3.61	1.19	0.206	0.814	-
	Master's Degree	16	3.79	0.79			
	PhD	2	3.91	0.35			
	Total	103	3.65	1.14			
Indifference	Undergraduate	85	3.82	1.38	0.410	0.665	-
	Master's Degree	16	4.14	1.14			
	PhD	2	3.66	0.70			
	Total	103	3.87	1.33			
Openness to Professional Development	Undergraduate	85	3.77	1.34	0.384	0.682	
	Master's Degree	16	4.07	1.06			
	PhD	2	3.62	0.88			
	Total	103	3.82	1.29			
Attitude Toward Teaching Profession Total	Undergraduate	85	3.65	1.23	0.408	0.666	-
	Master's Degree	16	3.95	0.94			
	PhD	2	3.68	0.64			
	Total	103	3.70	1.18			
Liking of Children	Undergraduate	85	6.39	0.59	1.327	0.270	-
	Master's Degree	16	6.18	0.57			
	PhD	2	5.92	0.90			
	Total	103	6.35	0.59			

According to Table 7, no significant difference was found between physical education teachers' attitudes toward their profession and educational status ($p=0.666$, $p>0.05$). There was no significant difference between the liking of children level and educational status ($p=0.270$, $p>0.05$).

Table 8. ANOVA Results According to the Participants' Workplace Locality

Scale/Subscale	Workplace Locality	N	X̄	Sd.	F	p
Appreciating	Province Center	46	3.61	1.23	0.78	0.476
	District Center	41	3.28	1.32		
	Village	16	3.55	1.43		
	Total	103	3.47	1.30		
Occupational Burnout	Province Center	46	3.89	1.23	1.592	0.209
	District Center	41	3.80	1.42		
	Village	16	3.96	1.46		
	Total	103	3.87	1.33		
Indifference	Province Center	46	3.89	1.23	0.091	0.914
	District Center	41	3.80	1.42		
	Village	16	3.96	1.46		
	Total	103	3.87	1.33		
Openness to Professional Development	Province Center	46	3.91	1.10	0.379	0.686
	District Center	41	3.68	1.48		
	Village	16	3.90	1.33		
	Total	103	3.82	1.29		
Attitude Toward Teaching Profession Total	Province Center	46	3.77	1.10	0.553	0.577
	District Center	41	3.55	1.28		
	Village	16	3.86	1.19		
	Total	103	3.70	1.18		
Liking of Children	Province Center	46	6.32	0.61	0.191	0.826
	District Center	41	6.39	0.59		
	Village	16	6.32	0.59		
	Total	103	6.35	0.59		

According to Table 8, no significant difference was found between physical education teachers' attitudes toward their profession and the workplace locality ($p=0.577$, $p>0.05$). There was no significant difference between the liking of children level and the workplace locality ($p=0.191$, $p>0.05$).

Table 9. ANOVA Results According to Participants' Years of Professional Seniority

Scale/ Subscale	Professional Seniority	N	X̄	Sd.	F	p	Sig.
Appreciating	1-5 years(a)	15	2.37	1.30	3.690	0.008	a<b a<c a<d
	6-10 years(b)	24	3.76	1.05			
	11-15 years(c)	26	3.74	1.08			
	16-20 years(d)	23	3.61	1.42			
	21 years and above(e)	15	3.43	1.37			
	Total	103	3.47	1.30			
Occupational Burnout	1-5 years(a)	15	2.80	1.29	3.229	0.016	a<b a<c
	6-10 years(b)	24	3.97	0.96			
	11-15 years(c)	26	3.92	0.90			
	16-20 years(d)	23	3.53	1.17			
	21 years and above(e)	15	3.67	1.30			
	Total	103	3.65	1.14			
	1-5 years(a)	15	2.61	1.54	5.024	0.001	a<b a<c
	6-10 years(b)	24	4.28	1.18			

Indifference	11-15 years(c)	26	4.21	0.94			a<d
	16-20 years(d)	23	3.86	1.24			
	21 years and above(e)	15	3.86	1.45			
	Total	103	3.87	1.33			
Openness to Professional Development	1-5 years(a)	15	2.48	1.57	5.713	0.000	
	6-10 years(b)	24	4.15	1.03			a<b
	11-15 years(c)	26	4.05	1.04			a<c
	16-20 years(d)	23	4.06	1.02			a<d
	21 years and above(e)	15	3.83	1.44			a<e
	Total	103	3.82	1.29			
Attitude Toward Teaching Profession Total	1-5 years(a)	15	2.56	1.29	5.008	0.001	
	6-10 years(b)	24	4.04	0.97			a<b
	11-15 years(c)	26	3.98	0.92			a<c
	16-20 years(d)	23	3.77	1.12			a<d
	21 years and above(e)	15	3.70	1.32			a<e
	Total	103	3.70	1.18			
Liking of Children	1-5 years(a)	15	6.26	0.52	0.227	0.923	
	6-10 years(b)	24	6.41	0.64			
	11-15 years(c)	26	6.35	0.62			
	16-20 years(d)	23	6.29	0.69			
	21 years and above(e)	15	6.40	0.40			
	Total	103	6.35	0.59			

According to Table 9, a significant difference was found between physical education teachers' attitudes toward their profession and years of professional seniority (p=0.001, p<0.05). There was no significant difference between the liking of children level and professional seniority (p=0.923, p>0.05).

Table 10. The Relationship between Physical Education Teachers' Liking of children level and Their Attitudes toward Teaching

Scale	N	r	P
Attitude Toward Teaching Profession Total	103	0.309	0.002
Liking of Children			

According to the results of the Pearson correlation test conducted to determine the relationship between physical education teachers' liking of children level and their attitudes toward teaching, a weak, positive linear relationship was found between physical education teachers' liking of children level and their attitudes toward teaching (r=0.309, p=0.002).

DISCUSSION

According to the results of the t-test, there was no significant difference between the gender status of physical education teachers and the liking of children level (p=0.443, p>0.05). In line with these results, physical education teachers have love for children regardless of gender. In Ceylan's (2017)study with kindergarten teachers and Kapucu's (2019) study with kindergarten teachers, the results obtainedin terms of the liking of children level and gender variable did not demonstrate a significant difference in parallel with the current study.

According to the results of the t-test, a significant difference was found between the gender status of physical education teachers and their attitudes toward the teaching profession (p=0.028, p<0.05). When we examined the results between the attitudes of physical education teachers toward the teaching profession and gender variables, the attitudes of female physical

education teachers toward the teaching profession are at a higher level than male physical education teachers. The reason for this can be interpreted as the fact that female physical education teachers have also adopted the idea that the teaching profession is more suitable for women according to the general social opinion. In addition, since female teachers see their students as their children with their maternal instincts, they may see their profession not as a job but as a motherly duty. Unlike other professions, since teaching has a working and vacation schedule that allows women to spend time at home and with their families, women may see themselves as advantageous when they compare themselves with other professional groups. Demir Sarıer's (2020) study with teachers of all branches and levels and Üzüm's (2019) study with prospective physical education teachers found a significant difference between teachers' attitudes toward the teaching profession and the gender variable in parallel with the current study, with higher scores of female participants.

According to the t-test results, there was no significant difference between the marital status variable and the liking of children level ($p=0.242$, $p>0.05$). In terms of the results obtained, regardless of the marital status of physical education teachers, their liking of children level is not affected and their liking of children happy and high. Kömbeci's (2021) study with preschool teachers and Çağlayan Akça's (2019) study with secondary school teachers did not find a significant difference between marital status and love for children in parallel with the current study.

According to the t-test, there was a significant difference between the marital status variable of physical education teachers and their attitudes toward the teaching profession ($p=0.015$, $p<0.05$). The scores of married participants were higher than the scores of single participants. The reason for this situation is that married teachers have more positive attitudes toward their profession due to the responsibilities of the institution of marriage. The findings of Kardeşoğlu Ersoy (2020) in his study with primary school mathematics teachers and Korkmaz and Sadık (2011) in their studies with teachers working in primary schools are parallel to the current research and they did not find a significant difference between teachers' attitudes toward teaching profession and marital status variable.

According to the data obtained as a result of the t-test, there was no significant difference between the variable of having children and the liking of children level of physical education teachers ($p=0.263$, $p>0.05$). In terms of the results obtained, physical education teachers' having children variable does not affect their liking of children level and their liking of children level is high. Ataş (2020) obtained the same results in his study with preschool teachers and Ceylan (2017) obtained the same results in his study with kindergarten teachers and found no significant difference between the liking of children level and the variable of having children.

According to the data obtained as a result of the t-test, a significant difference was found between the variable of having children and the attitudes of physical education teachers toward the teaching profession ($p=0.012$, $p<0.05$). Participants with children received higher scores than participants without children. Since teachers with children are more experienced in terms of relationships with children than teachers without children, it can be said that their scores are higher than single teachers. The findings of Şahin (2010) in his study with preschool teachers are in parallel with the current study and a significant difference was found between the participants' attitudes toward the teaching profession and the variable of having children.

According to the results of the ANOVA test, there was no significant difference between the age variable of physical education teachers and the liking of children level ($p=0.356$, $p>0.05$). The results obtained can be interpreted as that physical education teachers of all age groups have love for children. The findings of Ayeş Aslan's (2018) study conducted with 3rd-4th grade students studying in preschool teaching and classroom teaching at Ağrı İbrahim

Çeçen University did not find a significant difference between the age variable and the liking of children level in parallel with the current study.

According to the results of the ANOVA test, a significant difference was found between the age variable of physical education teachers and their attitudes toward the teaching profession ($p=0.021$, $p<0.05$). It was seen that the highest score was obtained by the participants between the ages of 41-50 and the lowest score was obtained by the participants aged 51 and above. Participants aged 51 years and above had the lowest scores in the subscales of appreciating and professional burnout and attitude toward the teaching profession scale, which can be said to be due to professional fatigue and burnout. It is seen that the lowest score in the subscales of openness to professional development was obtained by the participants between the ages of 21-30. The reason for this situation can be explained as the fact that this age group consists of teachers who have recently graduated from school, who are full of up-to-date information in terms of knowledge and skills, and who consider themselves sufficient in terms of professional development for this reason. The findings of Demir Sarıer (2020) in his study with teachers of all branches and levels and Tarım (2020) in his study with classroom teachers found significant differences between teachers' attitudes toward their profession and the age variable in parallel with the current study.

According to the data obtained as a result of the ANOVA test, there was no significant difference between the educational status variable of physical education teachers and the liking of children level ($p=0.270$, $p>0.05$). In Kömbeci's (2021) study with preschool teachers and Tural Büyük et al.'s (2014) study with nurses working in the adult and pediatric departments, the findings obtained in parallel with the current research did not find a significant difference between the liking of children level and the educational status variable.

According to the results of the ANOVA test, no significant difference was found between the educational status variable of physical education teachers and their attitudes toward the teaching profession ($p=0.666$, $p>0.05$). According to the findings obtained, it can be interpreted that physical education teachers, regardless of their level of education, leave their titles outside the school gate when they enter the school gate. For this reason, their titles do not affect their attitudes toward the teaching profession. Bozca (2015) in his study with the participation of teachers from all levels and Gülüm (2019) in his study with physical education and sports teachers did not find a significant difference between the educational variable and professional attitude.

According to the data obtained as a result of the ANOVA test, there was no significant difference between the liking of children level and workplace locality of the physical education teachers ($p=0.826$, $p>0.05$). According to the findings obtained, physical education teachers have love for children whether they work in the village or the provincial center. In Kapucu's (2019) study with preschool teachers, Kömbeci's (2021) study with preschool teachers, and Turan and Yılmazer's (2019) study with pre-service social studies teachers, they concluded that there was no significant difference between the workplace locality variable and the love for children.

According to the results of the ANOVA test, there was no significant difference between the workplace locality of physical education teachers and their attitudes toward the teaching profession ($p=0.577$, $p>0.05$). In line with the results we obtained fromabout childce locality does not affect the professional attitudes of physical education teachers. The findings obtained by Tarım (2020) in his study with classroom teachers and İpek and İpek (2015) in their study with classroom and pre-school teachers did not find a significant difference between the attitudes of teachers toward the teaching profession and the workplace locality variable in parallel with the current study.

According to the results of the ANOVA test, there was no significant difference between the participants' professional seniority variable and the liking of children level ($p=0.923$, $p>0.05$). According to the results obtained, physical education teachers have love for children regardless of their years of professional seniority. The findings obtained by İnan (2021) in his study with preschool teachers and Ataş (2020) in his study with preschool teachers did not find a significant difference between the variable of professional seniority and love for children in parallel with the current study.

According to the results of the ANOVA test, a significant difference was found between the professional seniority variable of physical education teachers and their attitudes toward the teaching profession ($p=0.001$, $p<0.05$). In line with the results obtained, the professional seniority of physical education teachers affects their professional attitude. It can also be said that the reason for this is the lack of experience in the early years of the profession, and as the experience increases, the attitude toward the profession turns positive. After the 5th year, the situation between the attitudes of physical education teachers toward the teaching profession and the professional seniority variable has stabilized. In the early years of the profession, the realization that the physical education course does not receive the value it deserves in society can also be said to be the reason for these results. The findings of Dayı (2022) in his study with physical education teachers and Altay (2021) in his study with classroom teachers found a significant difference between the attitudes of teachers toward the teaching profession according to the professional seniority variables in parallel with the current research.

According to the results of the Pearson correlation test conducted to determine the relationship between physical education teachers' liking of children level and their attitudes toward teaching, a weak, positive linear correlation was found between physical education teachers' liking of children level and their attitudes toward teaching ($r=0.309$, $p=0.002$). Teaching is a child-centered profession, and love for children is a fundamental part of the teaching profession. For this reason, it can be considered as a natural result that the teacher's professional attitude and love for children are related to each other. As a result of our findings, we can say that as the liking of children level increases, the attitude score toward the profession increases, and as the liking of children level decreases, the attitude score toward the profession decreases. It can be said that love for children is one of the important factors that should be taken into consideration when choosing a teaching profession. A teacher who is intertwined with children all day and does not have a love for children cannot be expected to have a positive attitude toward his/her profession. Physical education classes are courses where children are taught to love sports, to accept losing with calmness, to experience the joy of winning without offending their opponents, and where cooperation, socialization, and mobility are at high levels. If the teacher of such a course does not have a love for children, it will both affect his/her professional attitude and cause many gains that should be gained by children to be incomplete. We can say that our findings show that physical education teachers' love for children and their professional attitudes are a whole. Kuşçu et al. (2015) found a moderate and positive significant relationship between attitude toward the teaching profession and love for children ($r=0.379$, $p=0.000$). Ayeş Aslan (2018) conducted a study with third and fourth-grade preschool and classroom teaching students and found a moderate and positive significant relationship between attitude toward the teaching profession and love for children ($r=0.46$, $p=0.01$). Kömbeci (2021) found a positive and moderately significant relationship between attitudes toward the teaching profession and love for children in his study with preschool teachers ($r=0.474$, $p<.01$). Çağlayan Akça (2019) found a high and positive significant relationship between attitudes toward teaching profession and love for children in his study with secondary school teachers ($r=0.548$, $p=0.00$).

Conclusion

As a result of the literature review, a positive linear relationship was observed between teachers' professional attitudes and love for children. According to the results, the teaching profession and love for children are a whole and that teachers in all branches have love for children regardless of branch.

Limitations

The research was limited to a survey answered by 103 contracted and permanent physical education teachers working in public schools within the Ministry of Education in the 2021-2022 academic year in Malatya province, with voluntary participation.

Recommendation

Since studies on professional attitudes in the field of physical education have been conducted mostly on senior students studying in the physical education teaching department, more studies can be done on the professional attitudes of physical education teachers who have graduated from university and started working. More studies can be done on physical education teachers' love for children. A study can be conducted on physical education teachers working at different levels and compared. Social studies can be carried out to ensure that physical education teachers feel and see the value they deserve in society. In line with the results we obtained in our study, in-service training can be conducted to positively increase the professional attitudes of male physical education teachers.

In other studies, the number of participants may be increased and different variables may be used. In order to increase the positive attitudes of physical education teachers who are new to the profession, internship studies at universities can be rearranged to prepare for the first years of the profession. An interview category can be added to the aptitude test for physical education and sports teaching at universities to measure prospective students' love for children and their professional attitudes. Seminars and in-service trainings on love for children and professional attitudes can be organized for teachers and teacher candidates in institutions.

Before the appointment of teachers, the Ministry of National Education may conduct a series of tests or interviews on candidate teachers' love for children.

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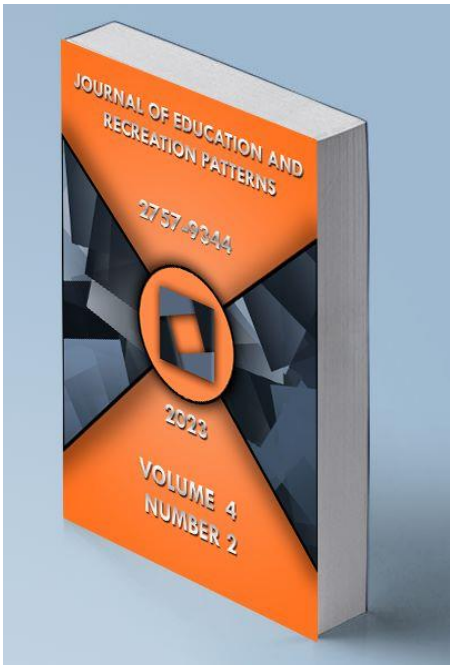
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Tahir Volkan ASLAN[1], Muhammed Zahit KAHRAMAN[2]

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[1]Tahir Volkan Aslan, Mersin University, tahirvolkanaslan@gmail.com, https://orcid.org/0000-0002-5839-1927
[2]Muhammed Zahit Kahraman, Muş Alparslan University, mzkahraman04@gmail.com, https://orcid.org/0000-0003-1295-7611

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The Effect of Core Exercise Program on Vertical Jump, Speed, Agility and Strength Parameters in Junior Male Soccer Players

Tahir Volkan Aslan [1], Muhammed Zahit Kahraman [2]

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ABSTRACT

This study was conducted to investigate the effect of core exercise program on vertical jump, speed, agility and strength parameters in junior male soccer players. In the study, pretest-posttest control group design, one of the experimental models of quantitative research method, was used. The experimental group of the study consisted of 12 male soccer players ($\bar{X}$year: 12,16±,83) who underwent core exercise 3 days a week for six weeks in addition to regular soccer training, while the control group of the study consisted of 12 male athletes ($\bar{X}$year: 12,25±,62) who underwent only regular soccer training. Leg strength, core strength, vertical jump, 30 m sprint and agility tests were administered to the athletes who voluntarily participated in the study before and after six weeks of training. The normality level of the data was determined by Shapiro-Wilk test. Independent Sample T Test for independent groups and Paired Sample T Test for dependent groups were used to analyze the normally distributed data. According to the findings of the study, there was a statistically significant difference between the pre-test - post-test measurement values of all performance tests of the experimental group and core strength, vertical jump, 30 m sprint and agility tests of the experimental and control groups ($p<0.05$), while no significant difference was found in the control group ($p>0.05$). According to the results of the study, it can be said that the core exercise program applied to male football players has positive effects on the development of vertical jump, speed, agility and strength parameters.

Keywords: Core exercise, Football, Jumping, Speed, Strength

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INTRODUCTION

The main purpose and focus of the research in the field of movement and training science is sportive performance. The primary aim is to identify all physical, physiological, cognitive and psychological elements that affect sportive performance positively or negatively and to try to keep the athlete's performance at the same level by increasing it to the optimum possible point (Gür, 2015). Sportive performance is the degree of formation of a certain sport motoric level. It includes specific factors due to its complex structure. There is a necessity to be versatile in the training for performance development. Maximum success is achieved with the harmonious development of the factors that determine performance (Günay & Yüce, 2008). Football is undoubtedly the most widespread and popular sport branch among the sports branches in the world. It has a unique place among other branches with its features such as the number of players, the size of the playing field and the ability to struggle (Marancı, 2001). According to the researches, it is not possible for athletes to reach the expected level of sportive performance if they do not have physical characteristics suitable for their branches. In addition, just having physical characteristics suitable for their branches does not mean that they will perform at the highest level (Özkan et al., 2005). There are many factors affecting performance and one of them is physical structure, that is, physical characteristics. The reason for this is that physical structure or physical characteristics directly affect the demonstration of physiological capacities. The branch-specific compatibility of physical structure and high physiological capacity are among the important criteria in terms of performance (Gürses and Olgun, 1996). Therefore, the lack of a certain level of physical structure, physiological capacity and biomotor components that make up the performance (Sevim, 1995) in athletes will prevent the expected values from being reached. Physical structure, which is one of the factors affecting the high performance expected from the athlete, positively affects the performance of the athlete by combining with other performance elements such as strength, power, flexibility, speed, endurance and quickness (Açıkada & Ergen, 1990). One of the features that increase this positive effect is the stabilisation of the core. Core stabilisation is generally defined as ensuring the postural continuity of the muscles around the lumbo pelvic region, which is the centre of the body in dynamic and static positions (static stability) or determining the trajectory of the movement to be revealed (dynamic stability). Core stabilisation also shows the role of the trunk muscles in maintaining balance and stabilisation of the spinal cord and even the whole body (Chabut, 2009). The functional importance of core stabilisation and force production is becoming increasingly evident in many sports. From throwing to running; trunk stabilisation plays a pivot role in an effective biomechanical function for power generation and reducing the load on the joints (Kibler, Press, & Sciascia, 2006). This region, defined as the central region of the body, is the point where the stabilisation of the abdominal, paraspinal and gluteal muscles, consisting of muscles, nerves, skeletal and other connective tissues that form the spine, pelvis, abdominal cavity and superstructures, is critical for optimal performance (Başandaç, 2014; Nadler, et al., 2002). The tasks of these muscles are to support posture, to enable movement, to control muscle activities, to provide stability, to absorb power, to generate power, to transfer power between extremities and joints (Handzel, 2003). It can be said that core stabilisation refers to the appropriate neuromuscular structure for force transfer and control of the upper and lower extremities within the entire kinetic chain for dynamic mobility and power generation (Takatani, 2012). The kinetic chain expressed here was defined by Steindler as "a combination of different well-organised joints that form the basis of a complex movement unit" (Steindler, 1955). Borghuis et al. (2008) state that motion at one segment will influence that of all other segments in the chain. A strong kinetic chain will increase the efficiency in the execution of movements or transitions between movements due to the increase in the strength of many muscles in the core region, prevention of injury risk and improvement in balance ability (Herrington & Davies, 2005). As a matter of fact, scientific studies have shown that core exercises provide improvements in performance parameters (Cosio-Lima et al., 2003; Carpes

et al., 2008). At this point, training without paying attention to the core area increases the risk of injury in the participants and may limit their technical skills, so a strong core area allows the athlete to load more, as well as making technical movements more efficient and flexible (Şatıroğlu, Aslan, & Atak, 2013). Altundağ et al. (2021) examined the effect of 8-week core and corrective exercises applied to female volleyball players on functional movement screening test scores. As a result of their study, they recommended that core and corrective exercises should be added to training programmes to reduce the risk of injury and improve functional movement patterns of athletes in volleyball.

Today's sports require participants to have an ideal level of physical fitness, which is a process that requires more loading. It is very important to develop core strength in order to improve the propulsive force produced by the legs and to get better performance with high performance output (Stanton et al., 2004; Şatıroğlu, Aslan, & Atak, 2013). It is known that core weakness may affect athletic performance as well as neurological injuries with vertebral problems. Therefore, it is thought that measures should be taken to eliminate these problems while making training plans. This multicomponent structure of the sportive performance phenomenon points to a multifaceted training programme that a footballer should apply in order to be successful. Core muscles and training for these muscles are an important part of this component. Based on the idea that the core exercise programme will increase the contraction endurance of the core region muscles one after the other, the body stabilisation will create resistance to fatigue in different positions and for a longer time, which will reduce the functional losses that may arise from the lack of stability in the athlete, and at the same time prevent the risk of injury and positively affect the athletic performances of the athletes, this study aimed to investigate the effects of core exercise activities on some motoric characteristics of male football players such as vertical jump, speed, agility and strength.

METHOD

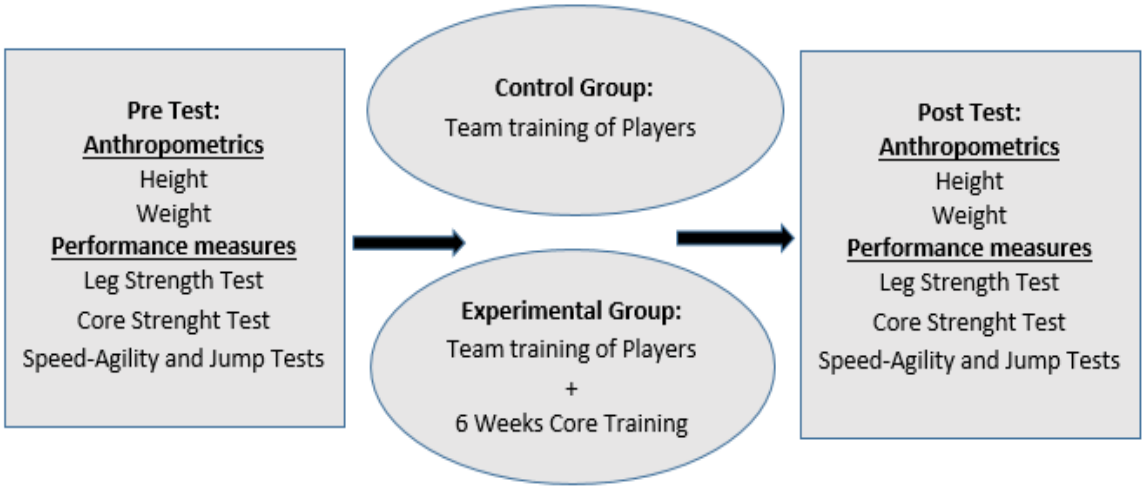
Participants

In the study, pretest-posttest control group design, one of the experimental models, was used. Twenty-four male soccer players, aged between 11-13 years and regularly practicing soccer, voluntarily participated in the study. These athletes were randomly divided into two groups, one experimental group (n = 12, mean age, 12.16±.83 years; mean height, 166.58±7.44 cm; mean body weight, 51.4±9.25 kg) and one control group (n = 12, mean age, 12.25±.62 years; mean height, 165.66±6.05 cm; mean body weight, 49.90±6.03 kg). The inclusion criteria were (a) playing soccer for at least 1 year; (b) not having any history of injury that would affect the outcome of the study; (c) participating regularly in the study; and (d) following the instructions of the researchers throughout the study. G*power (3.1.9.4) power analysis program was used to determine the number of participants to be included in the study. As a result of the power analysis (confidence interval=.95, alpha value=.05 and beta value=.80), it was determined that a total of 20 volunteers should be included in the research and the number of volunteers was determined as 24 (Experiment: 12 Control: 12) to increase the reliability of the research. In the research conducted in accordance with the Declaration of Helsinki, the participants who volunteered to participate in the research were interviewed and informed about the content of the research and the "Informed Voluntary Consent Form" was signed by the volunteers. Ethical approval was obtained from Muş Alparslan University Scientific Research and Publication Ethics Committee for the conduct of the research (Approval Number: 10.07.2023-99022).

Experimental Design of the Study

Pretests were applied to the athletes in the experimental and control groups before starting the study. While the athletes in the experimental group were applied a core strength training programme prepared by using the research of Willardson (2014), which included basic core exercises performed with their own body weight for 6 weeks in addition to football training three (3) days a week, the football players in the control group were not included in the core exercise programme and continued their routine football training programme for 6 weeks. After the end of the six-week training programme, post-tests were applied to both groups and the data collection phase was completed (Figure 1).

Figure 1. *Experimental Design Diagram*



Core Exercise Program

The scope of the exercise was applied as movement time. In the core exercise programme consisting of 10 exercises (Prone Plank, Side bridge, Scissor Flutter Kick, Sit Up, Jackknife, Superman, Leg Lower, Bird Dog, Bicycle Crunch, Swimmer) and prepared by using Willardson's (2014) research, the duration of each core movement is 30 s, resting time is 45 s and repetition is 2 for 1- 3 weeks. As the adaptation of the athletes was achieved, variables such as loading and scope were gradually increased in the context of the principle of increasing loading for subsequent adaptations (Bompa, 2009), and the application time of the movements was applied as 45 seconds, rest time as 60 seconds and repetition as 2 from the 4th week (Table 1).

Table 1. Core Exercise Program of 6 Weeks

Exercises	1.-3nd Week	4.-6th Week
	Time / Rest / Reps	Time / Rest / Reps
Prone Plank	30 sec x 2 reps x 45 sec	45 sec x 2 reps x 60 sec
Side bridge	30 sec x 2 reps x 45 sec	45 sec x 2 reps x 60 sec
Scissor Flutter Kick	30 sec x 2 reps x 45 sec	45 sec x 2 reps x 60 sec
Sit Up	30 sec x 2 reps x 45 sec	45 sec x 2 reps x 60 sec
Jackknife	30 sec x 2 reps x 45 sec	45 sec x 2 reps x 60 sec
Superman	30 sec x 2 reps x 45 sec	45 sec x 2 reps x 60 sec
Leg Lower	30 sec x 2 reps x 45 sec	45 sec x 2 reps x 60 sec
Bird Dog	30 sec x 2 reps x 45 sec	45 sec x 2 reps x 60 sec
Bicycle Crunch	30 sec x 2 reps x 45 sec	45 sec x 2 reps x 60 sec
Swimmer	30 sec x 2 reps x 45 sec	45 sec x 2 reps x 60 sec

Data Collection Tools

Height Measurement: Participants' height was measured with a stadiometer (SECA, Germany) with an accuracy of 0.01 meter (m). Height was measured with the head in the frankfort plane, following a deep inspiration, the distance between the vertex of the head and the foot was measured in a standing position without shoes, heels together, knees straight and tense, body and head upright and facing each other, the sliding caliper of the stadiometer was stopped when it touched the head of the volunteers, and the closest value was recorded as the height value in centimeters (cm).

Body Weight Measurement: The body weights of the participants were measured with an electronic scale (Tanita BC- 418 MA, Japan) with an accuracy of 0.1 kilogram (kg), the volunteers were wearing shorts or swimsuits that would not affect their weight, and the results were recorded in kilograms (kg).

Leg Strength Test: Leg strength was measured with Takei brand leg dynamometer adjusted according to the participant. After placing his/her feet on the dynamometer stand with knees bent, the participant pulled up the dynamometer bar vertically using his/her legs to the maximum extent with his/her arms stretched, back straight and trunk slightly tilted forward. This traction was repeated 2 times, and the best value was recorded for each athlete (Biçer and Akkuş, 2010).

Core Strength Test: Core strength of the participants was measured with the "Sport-Specific Core Muscle Strength & Stability Plank Test" protocol developed by Mackenzie (2005). The protocol consists of 8 steps with a total duration of 3 minutes. After the first step was started, if the athlete failed to stay in the appropriate plank position (hand, foot touching the ground, disruption of the initial shape of the trunk, etc.) at which second of each step, that time was recorded as the athlete's test score. When the athlete successfully completed all 8 steps, he/she was considered to have successfully passed the test and the duration of the test was recorded as the athlete's score.

Vertical Jump Test: It is a test used to determine the level of leg quick strength, jumping strength and alactacid anaerobic power. Vertical jump measurements of the athletes were measured with an electronic jump mat (Smart Jump; Fusion Sport, Australia). All athletes were asked to stand on the mat with their hands on their waist and when the athletes were ready, they were asked to jump to the highest point they could jump to and the athlete fell back on the mat after jumping. The athletes were given two attempts, and their jump heights were measured in cm and their best degrees were recorded (Atan, 2019).

30-m Sprint Test: A "30 m sprint test" was performed to determine the speed performance of the participants. Running scores were recorded in seconds with electronic gate timers (Smart Speed; Fusion Sport, Australia) placed at the start and finish line. Sufficient rest time (3 minutes) was allowed between measurements to demonstrate maximal performance. The test was repeated twice for each participant for reliability and the best performance score was recorded (Hopkins, 2000).

Illinois Agility Test: The Illinois test was applied to evaluate the agility performance of the participants. The test consists of a 40 m straight run with 180º turns every 10 m and a 20 m slalom run between cones. The test track, consisting of three cones arranged on a straight line with a width of 5 m, a length of 10 m and 3.3 m intervals in the middle section, was set up on an artificial turf football field. After the test track was prepared, a two-door photocell electronic stopwatch system (Smart Speed; Fusion Sport, Australia) with an accuracy of 0.01 s was placed at the beginning and end. The test was repeated twice for each participant for the reliability of the test and the best performance value was recorded in seconds (Hopkins, 2000).

Statistical Analysis

SPSS 22.0 package program was used for statistical analysis of the data. Normality levels of the data were determined by Shapiro-Wilk test. Parametric tests were preferred in the analysis of normally distributed data. Independent Sample T Test for independent groups and Paired Sample T Test for dependent groups were used and significance level was accepted as 0.05 in statistical comparisons. Effect sizes (ES) of mean differences were determined using Cohen's d-test and effect sizes were categorized according to Hopkins scale: 0.0-0.2 = insignificant; 0.2-0.6 = small; 0.6-1.2 moderate; 1.2-2.0 = large; > 2.0 = very large (Hopkins et al., 2009).

FINDINGS

In this part of the study, the findings of the research examining the effects of core exercise programmed on vertical jump, speed, agility and strength parameters are presented.

Table 2. Independent Sample t-Test Results Regarding General Characteristics of Groups

Parameters	Group	n	$\bar{x}$	Sd.	t	p
Age (year)	Experimental	12	12.16	.83	-.277	.784
	Control	12	12.25	.62		
Height (cm)	Experimental	12	166.58	7.44	1.415	.171
	Control	12	162.66	6.05		
Body Weight (kg)	Experimental	12	51.40	9.25	.481	.635
	Control	12	49.90	6.03		

cm: centimeters; kg: kilogram

According to Table 2, there was no statistically significant difference between the experimental and control groups in terms of general characteristics (p>0.05).

Table 3. Independent Sample t-Test Results Regarding the Pre-Test Values of the Groups

Parameters	Group	n	$\bar{x}$	Sd.	t	p
Leg strength (kg)	Experimental	12	77.38	6.61	-.759	.456
	Control	12	79.13	4.49		
Core strength (sec)	Experimental	12	108.91	28.05	.814	.425
	Control	12	101.25	16.67		
Vertical jump (cm)	Experimental	12	30.41	3.60	.344	.734
	Control	12	29.91	3.56		
30 m Sprint (sec)	Experimental	12	4.63	.21	-2.045	.053
	Control	12	4.82	.22		
İllinois agility (sec)	Experimental	12	17.32	.49	-1.638	.116
	Control	12	17.70	.63		

sec: second; cm: centimeters; kg: kilogram

According to Table 3, there was no significant difference between the leg strength, core strength, vertical jump, 30 m sprint and Illinois agility pre-test values of the athletes in the experimental and control groups (p>0.05). The fact that there was no significant difference between the baseline values of both groups (p>0.05) shows that these groups have similar characteristics.

Table 4. Independent Sample T-Test Results for the Post-test Values of the Groups

Parameters	Group	n	x̄	Sd.	t	p	ES
Leg strength (kg)	Experimental	12	84.59	7.32	1.667	.110	
	Control	12	80.56	4.06			
Core strength (sec)	Experimental	12	129.08	22.90	2.960	**.007***	1.20
	Control	12	104.33	17.73			
Vertical jump (cm)	Experimental	12	34.05	2.85	2.164	**.042***	0.88
	Control	12	30.87	4.22			
30 m Sprint (sec)	Experimental	12	4.54	.17	-3.497	**.002***	1.47
	Control	12	4.79	.17			
İllinois agility (sec)	Experimental	12	16.08	.35	-6.780	**.000***	2.80
	Control	12	17.46	.60			

*p<0.05; sec: second; cm: centimeters; kg: kilogram; ES: Effect Size

According to Table 4, while there was no statistically significant difference between the leg strength posttest values of the athletes in the experimental and control groups (p>0.05), statistically significant differences were found between the groups in core strength, vertical jump, 30 m sprint and Illinois agility posttest values (p<0.05). It was determined that the effect size of the significant difference seen in Core strength (Cohen's d=1.20) and 30 m sprint (Cohen's d=1.47) values was at a large level (Cohen's d=1.20). The effect size of the significant difference seen in vertical jump (Cohen's d=0.88) values was found to be at medium level, and Illinois agility (Cohen's d=2.80) values were found to be at very large level.

In the core strength test, the post-test values of the athletes in the experimental group (129.08±22.90) were higher than those in the control group (104.33±17.73). In the vertical jump test, the posttest values of the athletes in the experimental group (34.05±2.85) were higher than those in the control group (30.87±4.22). In the 30 m sprint test, the posttest values of the athletes in the experimental group (4.54±.17) were lower than those in the control group (4.79±.17). In the Illinois agility test, the post-test values of the athletes in the experimental group (16.08±.35 s) were lower than those in the control group (17.46±.60).

Table 5. Paired Sample t-Test Results for Experimental Group Pre-Test and Post-Test Values

Parameters	Group	n	x̄	Sd.	t	p	ES
Leg strength (kg)	Pre test	12	77.38	6.61	-4.428	**.001***	1.03
	Post test	12	84.59	7.32			
Core strength (sec)	Pre test	12	108.91	28.05	-5.793	**.000***	0.78
	Post test	12	129.08	22.90			
Vertical jump (cm)	Pre test	12	30.41	3.60	-7.240	**.000***	1.12
	Post test	12	34.05	2.85			
30 m Sprint (sec)	Pre test	12	4.63	.21	2.381	**.036***	0.64
	Post test	12	4.51	.16			
İllinois agility (sec)	Pre test	12	17.32	.49	8.520	**.000***	2.91
	Post test	12	16.08	.35			

*p<0.05; sec: second; cm: centimeters; kg: kilogram; ES: Effect Size

When the pre-test - post-test measurement values of the participants are analyzed in Table 5, a statistically significant difference was found between the leg strength, core strength, vertical jump, 30 m sprint and Illinois agility pre-test and post-test values of the athletes in the experimental group (p<0.05). The effect size of the significant difference in leg strength (Cohen's d=1.03), core strength (Cohen's d=0.78) and vertical jump (Cohen's d=1.12) values was found to be at a moderate level. The effect size of the significant difference in 30 m sprint

(Cohen's d=0.64) was found to be at a small level, and Illinois agility (Cohen's d=2.91) was found to be at a very large level.

The leg strength test posttest values (84.59±7.32) were higher than the pre-test values (77.38±6.61), core strength posttest values (129.08±22.90) were higher than the pre-test values (108.91±28.05), vertical jump posttest values (34.05±2.85) were higher than the pre-test values (30.41±3.60). The 30 m sprint test posttest values (4.51±.16) were lower than the pre-test values (4.63±.21) and the Illinois agility test posttest values (16.08±.35) were lower than the pre-test values (17.32±.49).

Table 6. Paired Sample t-Test Results for Control Group Pre-Test and Post-Test Values

Parameters	Group	n	x̄	Sd.	t	p
Leg strength (kg)	Pre test	12	79.13	4.49	-2.007	.070
	Post test	12	80.56	4.06		
Core strength (sec)	Pre test	12	101.25	16.67	-1.512	.159
	Post test	12	104.33	17.73		
Vertical jump (cm)	Pre test	12	29.91	3.56	-1.184	.261
	Post test	12	30.87	4.22		
30 m Sprint (sec)	Pre test	12	4.82	.22	.610	.554
	Post test	12	4.79	.17		
İllinois agility (sec)	Pre test	12	17.70	.63	1.356	.202
	Post test	12	17.46	.60		

sec: second; cm: centimeters; kg: kilogram

According to the results in Table 6, there was no significant difference between the pre-test and post-test values of leg strength, core strength, vertical jump, 30 m sprint and Illinois agility values of the athletes in the control group (p>0.05).

DISCUSSION

In order for soccer players to perform well, their basic motoric characteristics must be at a high level before the basic skills of soccer. For the desired elite level soccer success, it is necessary to determine the physical and mental requirements of soccer correctly and to train soccer players with scientifically correct methods. Therefore, in order to reach the desired levels, it is necessary to develop speed, agility, strength, flexibility, power, aerobic and anaerobic limits, for which regular training is important. In this study, the effects of core exercise practices on vertical jump, agility, speed and strength parameters of junior male soccer players were investigated. For this purpose, the parameters measured in the study were determined with a two-stage study as pre-test and post-test and the results were discussed and presented in the light of the literature.

Evaluation of Leg Strength Performance

Soccer players, who are always on the move during the competition, need strength for every action they perform in the game. Soccer strength includes many elements. As a matter of fact, researchers state that strength is an important parameter for success in soccer (Gissis et al., 2003; Mjolsnes et al., 2004; Reilly & Gilbourne, 2003). In the study, when the pre-test - post-test measurement values of the experimental group were analyzed, it was determined that the leg strength values showed a statistically significant difference. When the mean values were compared, it was seen that the post-test measurement values were better. Since core exercises provide more stability for proximal to distal movements of the lower extremities, improving core function can increase leg strength (Kibler et al., 2006). When the pre-test and post-test measurement values of the control group were examined, it was determined that the leg strength values did not show a statistically significant difference. When the post-test results of the

experimental and control groups were compared, it was determined that the leg strength measurement values did not show a statistically significant difference. In the study of Dello Iacono et al. (2016), in which they examined the effects of core stability training on muscle asymmetries and imbalances, a significant decrease was observed in strength asymmetries in the core exercise group, and it was stated that the exercises had positive effects on the development of optimal lower extremity power balance in young football players. In another study on the activation of core region and lower extremity muscles, it was found that core exercises improved the activity levels of core region (obliques externus abdominis and erector spinae) and lower extremity (tibialis anterior) muscles ($p \leq 0.03$) (Oshima et al. ,2019). A similar positive effect was observed in a study by Doğan et al. (2016), which showed a significant improvement in leg strength values of 44 soccer players after 8 weeks of core training. In another study, Drinkwater et al. (2007) reported an increase in leg strength after applying a core-based training programme with a bosu ball. Our study does not coincide with the data obtained from these studies in leg strength parameters. It is thought that this difference may be due to differences in age, training duration and exercise protocols.

Evaluation of Core Strength Performance

When the pre-test - post-test measurement values of the experimental group were analysed, it was determined that the core force values showed a statistically significant difference. When the mean values are compared, it is seen that the post-test measurement values are better. When the pre-test and post-test measurement values of the control group were analysed, it was determined that the core strength values did not show statistically significant difference, and when the post-test results of the experimental and control groups were compared, it was determined that the vertical jump measurement values differed. When the mean values were compared, it was determined that the core exercise group had better measurement values.

D'Isanto et al. (2019) concluded that strength training is the most important component of an athlete's performance. Another researcher suggested that core training improves force transmission, coordinated combination and muscle control ability (Yu et al., 2008). It embodies a new concept such as whole-body integrity and the participation of multiple muscle groups in sports in multiple dimensions at the same time (Yu et al., 2008). In fact, core training that integrates multiple muscle groups requires more coordination, which may improve power strength adaptation and thus on-field performance (Yu et al., 2008; Suchomel et al., 2018).

The core region consists of the abdominal muscles in the front, the back muscles in the back, the diaphragm at the top and the pelvic floor muscles at the bottom, and it is known that core strength accelerates the upper and lower extremity muscles during sportive activities and may also form the basis for force transfer between distal and proximal body parts. Therefore, core strength protects the spine and ensures the sustainability of the pelvic neutral position (Samson et al., 2007; Standaert et al., 2008). This may be important in terms of preventing sports injuries and improving body control and balance (Koz & Ersöz, 2010). Boyacı and Tutar (2018) reported that "core muscle strength and endurance improved with the Quad-Core training programme protocol" applied on child athletes. However, in a study, it was reported that core training had significant effects on abdominal muscles and rectus femoris activation (Cowley et al., 2007; Kean et al., 2006). In another study, it was found that a group performing static and dynamic exercises on a moving floor improved in core (plank, penknife and back extension) tests (Parkhouse & Ball, 2011). In another study in which the effects of core exercises on athletic performance were examined, it was stated that core exercises improved trunk muscle strength, sprint and shooting performances when applied with regular football training (Prieske et al., 2015). When the findings of the evaluation of the core strength tests of the study and control groups are compared with the literature, our research findings are in parallel with the results of many studies. In these studies (Moffroid et al., 1969; Dendas, 2010;

Saeterbakken et al., 2011; Cuğ et al., 2012; Weston et al., 2015), positive increases in core strength measurements were observed in the groups in which core exercises were applied.

Evaluation of Vertical Jump Performance

Vertical jumping, which is a physical characteristic that should be taken into consideration for high-level performance, varies in importance depending on the position in football. Explosive strength, which is associated with high level performance, is important in sports such as football (Stolen et al., 2005).

When the pre-test - post-test measurement values of the experimental group were analysed, it was determined that the vertical jump values showed a statistically significant difference. When the mean values are compared, it is seen that the post-test measurement values are better. When the pre-test and post-test measurement values of the control group were analysed, it was determined that the vertical jump values did not show a statistically significant difference. When the post-test results of the experimental and control groups were compared, it was found that the vertical jump measurement values differed. When the mean values were compared, it was determined that the core exercise group had better measurement values.

It was reported that 8-week core exercise practices combined with plyometric exercises increased jump performance and explosive power (Cabrejas et al., 2023). Dilber et al. (2016) found statistically significant differences in terms of vertical jump value because of their study applied to university football team players. Sannicandro et al. (2015) examined 42 young basketball players and found a significant difference in jump performance after 4 weeks of core training (2 times a week, 1 hour/session). Many studies have revealed that core exercises create significant differences in long jump or vertical jump values of footballers (Boyacı & Afyon, 2017). Hoshikawa et al. (2013) reached similar results with our study and stated that adding core training to athlete training in early adolescence will increase hip extensor strength and vertical jump values. Sharma et al. (2012) examined the effect of core strengthening training programme on body imbalance through vertical jump performance and static balance variables of volleyball players. They found that a nine-week core training programme had a positive effect on static balance and vertical jump values. In another study, Sztruzik et al. (2014), in a study on 20 basketball players, found that regular lower extremity core strength exercises performed by athletes contributed positively to vertical jump and shooting performance (Struzik, Pietraszewski, & Zawadzki, 2014). Civan, A., Karhan, A., & Civan, A.H. (2022) suggest that 8 weeks of regular and planned plyometric training may contribute to improvements in vertical jump, anaerobic power, and explosive strength in athletes. The findings obtained in the study are similar to the findings in the literature.

Evaluation of 30 m sprint performance

The product of the body's strength and speed reflects power (Baker & Nance, 1999). Most coaches agree that many explosive tasks such as sprinting, jumping, throwing and kicking require strength for successful performance (Young & Bilby, 1993). This is because these sports require high-speed movement and power production (Young & Bilby 1993; Young, 2006). Speed plays a critical role in football and core strength is important for athletic performance (Faude et al., 2012; Jeffreys et al., 2018); this can be explained by the theory that a stronger core enables the spine and pelvis to maintain stability (Handzel, 2003). However, it increases the stability of the centre of gravity during fast running and reduces fluctuations in this centre. By increasing the stability and flexibility of the hip joint, the athletes' range of motion, stride and stride frequency increase during the actual movement process (Meng et al., 2009).

When the pre-test - post-test measurement values of the experimental group were analyzed, it was determined that the speed values showed a statistically significant difference.

When the mean values are compared, it is seen that the post-test measurement values are better. When the pre-test and post-test measurement values of the control group were analyzed, it was determined that the speed values did not show statistically significant difference, and when the post-test results of the experimental and control groups were compared, it was determined that the speed measurement values differed. When the mean values were compared, it was determined that the measurement values of the core exercise group were better. Bora and Dağlıoğlu (2022), examined 18 young male volleyball players and found that there was a significant difference in the speed test after 6 weeks of core training (3 times a week, 1 hour/session). A similar positive effect was found in a different study after 4 weeks of core training (3 times a week) increased speed performance among 23 male students (Akbulut et al., 2020). In a study conducted by Mendes (2016) on 31 football players aged 18-30 years, it was stated that core strength training positively affected the speed parameters (10 m and 20 m sprint) of football players and may contribute to speed performance. In another core study, it was reported that core training improved 10-metre sprint ability (Sannicandro et al., 2020). Tamer et al. (2017) found statistically significant differences between 10-30 m speed, pre-test and post-test values as a result of 8-week exercise programme. In the study of Kurtay (2023), which examined the "effect of core training on physical performance", it was determined that there was no significant difference in the control group when the 30 m run analysis results were evaluated, but a significant difference was observed in the core exercise groups. In the study conducted by Gök (2021), it was determined that a significant difference occurred in dynamic and static core exercise groups. The findings obtained in the study are similar to the findings in the literature.

Evaluation of Agility Performance

Agility refers to the capacity to change body direction and position rapidly (Draper, 1985). The core can be considered the centre of the kinetic chain in sport. Developed core muscles result in improved motor recruitment, nerve recruitment and neural adaptation (Sever & Zorba, 2018). Thus, core strength, balance and movement control maximise the function of the lower and upper extremities. It should be predicted that athletes' motor skills such as coordination, agility, speed and balance in sports such as football will improve as their core strength and stability improve. Turns or changes in direction are important in agility assessments. Rotation indicates energy loss, which means decreased performance. In the core muscle groups, the external oblique, along with the hip and upper back muscles, creates and controls the rotation necessary to perform these actions (Shinkle et al., 2012). Therefore, strong lateral core muscles not only facilitate rotational movement in a number of tasks, but also resist rotational pressure in other activities (Shinkle et al., 2012). This may help footballers to improve their agility.

When the pre-test - post-test measurement values of the experimental group were analyzed, it was determined that the agility values showed a statistically significant difference. When the mean values are compared, it is seen that the post-test measurement values are better. When the pre-test post-test measurement values of the control group were examined, it was determined that the agility values did not differ statistically significantly, and when the post-test results of the experimental and control groups were compared, it was determined that the agility measurement values differed. When the mean values were compared, it was determined that the core exercise group had better measurement values. Sighamoney et al. (2018) showed that 4-week core training (5 times a week) improved agility performance among badminton players. Another study identified a significant difference in agility performance among runners after 4 weeks of core training (3 times per week) (Werasirirat et al., 2022). Akçınar and Macit (2020), suggested that 8 weeks of core training (3 times a week, 25-30 minutes) improved agility performance in male handball athletes. As a result of the agility tests performed by Yang (2014) in the groups to which he applied core exercise for 12 weeks, it was stated that there

was a significant difference between pre-test and post-test values. In the study of Balaji and Murugavel (2013), in which core exercise was applied to the subjects for 8 weeks, it was determined that there was a significant difference when the pretest-posttest results of agility values were evaluated. The findings obtained in the study are similar to the findings in the literature. When the results of our study and the literature were compared, it was determined that there were similar results as well as results that were not parallel to our study (Aslan, 2014; Camcıoğlu, 2018). It is thought that this difference in the studies may be due to reasons such as the variety of subject groups included in the studies, differences in the duration and intensity of the application of the preferred methods.

Conclusion

According to the results of this study, it can be said that core exercise program has positive effects on the development of vertical jump, speed, agility and strength performance parameters. Therefore, the inclusion of core exercises similar to those in this study in training plans may allow athletes to improve their performance.

Recommendations

Future studies that will determine the effects of different types and durations of core exercises on different sports performance parameters of different sport types will provide important contributions to sports performance.

Limitations

The fact that male football players participated in this study can be considered as a limitation. Therefore, future studies should include evaluations that allow comparison of the effects of core exercises on the performances of different groups.

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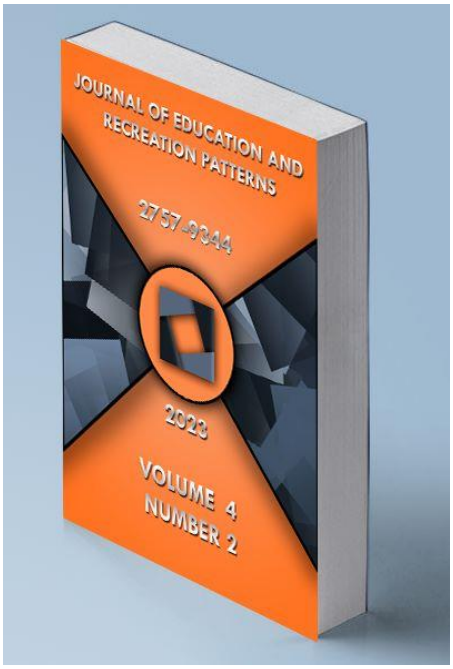
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Baha Engin ÇELİKEL[1]

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[1] Baha Engin Çelikel, Fırat University/Faculty of Sports Science, becelikel@firat.edu.tr,
https://orcid.org/0000-0002-8429-969X

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Examination of Exercise Addictions in Sedentary Individuals

Baha Engin Çelikel[1]

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ABSTRACT
In order to ensure that individuals can maintain a healthy lifestyle, it is essential to establish a regular exercise routine. This research aims to investigate a sedentary exercise programme and contribute to a healthy life in the years to come. The population of the research consists of sedentary individuals living in Elazığ province. The sample consists of 283 sedentary individuals, of which 168 are female and 115 are male. Our study consists of two parts. In the first part, a personal information form is used for the participants, while in the second part, a 21-item exercise scale (EDS-21) is used. The results show significant symptomatic indications in individuals ($p<0.05$). Asymptomatic individuals were found among those involved in active sports, while symptomatic cases were identified in both individual and team sports. For the EDS-21 sub-dimensions, there was a statistically significant difference in gender, with males scoring higher than females, and active sports participants scoring higher than non-active individuals ($p<0.05$). Although no statistically significant differences were found between the groups in terms of body weight, a statistically significant difference was found based on weekly exercise status ($p<0.05$).
In conclusion, the EDS-21 symptoms of sedentary individuals indicated that females were asymptomatic while males were symptomatic, and that active exercisers were symptomatic while non-exercisers were asymptomatic. In terms of the sub-dimensions of the EDS-21, males were found to be more exercise dependent than females, and active sports participants had higher scores than non-exercisers. In light of this research, informing individuals about exercise dependence could contribute to the healthy upbringing of future generations.

Keywords: Dependent, Exercise, Sedentary, Sport

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INTRODUCTION

When we think of a sedentary life, we think of individuals who do not do sports, spend their time eating at home, and constantly spend their time on television and the internet. The inactivity of individuals staying at home makes weight gain inevitable, followed by low energy. Sports science faculties of some universities in Turkey have developed exercise programs through various online or video lessons, considering supporting the physical and mental health of the society. Additionally, individuals who are not motivated to exercise at home may experience physical changes by becoming more inactive during the day (Akyol, Başkan, & Başkan, 2020). As the course of history progresses, individuals develop interest and excitement towards substances, objects, behaviors, and phenomena in their lives. With the intensification of these feelings, leading to individuals' attachment, dependency emerges (Babaoğlu, 1997). Despite the harm caused by this attachment and excitement, the dependent individual cannot relinquish their dependency (Tamar, Ögel & Çakmak, 1997). In cases of physical dependency, when an individual interacts with the substance they are dependent on, they excessively focus on the substance and consequently exhibit abnormal symptoms. In instances of psychological dependency, the individual expresses emotional satisfaction (Tamar, Ögel & Çakmak, 1997, Cited in: Cicioglu, Demir, Bulğay, & Çetin, 2019). Examining the literature, various types of addiction come to the forefront, including food and beverage addiction, alcohol addiction, internet addiction, tobacco addiction, gambling addiction, and exercise addiction (Öyekçin & Deveci, 2012; Karataşoğlu, 2013; Arısoy, 2009; Argüder et al., 2013; Yeltepe, 2007; Hausenblas & Downs, 2002).

Exercise is defined as planned and systematic activities performed regularly and continuously to maintain or improve desired aspects of individuals' physical fitness characteristics. Recently, sports experts have highlighted that exercise, alongside its benefits, could also have harmful aspects, leading to extensive research in this area. Exceeding the level of exercise recommended by experts is said to create physical, physiological, and psychological dependency in the body. Building on this perspective, sports scientists have indicated that excessive exercise can lead to dependency in individuals (Hausenblas & Downs, 2002). Exercise Addiction is defined as the uncontrollable escalation of regular exercise, characterized by factors such as increasing duration, intensity, and frequency of the exercise, affecting social interactions with the environment, and centering one's life around exercise (Adams & Kirkby, 2002; Hausenblas & Downs, 2002). According to researchers, exercise addiction encompasses both positive and negative definitions. Positive addiction elicits pleasure, positive psychological effects, and relaxation for the individual (Glasser, 2012; Biddle, 1995). Negative addiction, on the other hand, involves two key features. These are;

The belief of the exercising individual that exercise is the only way to cope with life problems and the conviction that life cannot continue without exercise.

Experiencing a sense of withdrawal when not engaging in exercise. As symptoms of this withdrawal, the individual may feel irritability, laziness, guilt, tension, indifference, restlessness, and anxiety. This situation can lead to symptoms such as muscle aches, often referred to as "exercise dependence syndrome" (Biddle, 1995). Exercise is a practice that enhances physical health and psychological well-being (Bouchard & Shephard, 1994; Shephard, 1997). While exercise is universally defined as a healthy habit, it is acknowledged that exercise behavior has the potential to become a harmful obsession for a small minority. The most prevalent viewpoint is that excessive or compulsive exercise constitutes a form of addiction (Garman et al., 2004; Griffiths, 1997). Based on a review of various studies on exercise addiction, it is estimated that the prevalence in the general population is close to 3% (Sussman et al., 2014).

Sedentary individuals shape their lives according to their exercise routines and often engage in irregular exercise practices. It is believed that individuals who exercise in such a manner might experience health problems and lead to certain negative outcomes. This study aims to investigate the levels of exercise addiction among individuals based on certain demographic characteristics.

METHOD

Research Model

In this study, a descriptive survey model, one of the quantitative research models, was used. Survey models are suitable for research that aims to describe a past or present situation as it exists (Büyüköztürk et al., 2014).

Population and Sample of the Study

The population of the research consists of sedentary individuals living in Elâzığ province. The sample consists of 283 individuals, with 168 females and 115 males, selected from among sedentary individuals.

Data Collection Instrument

In this study is divided into two parts. In the first part, participants completed a "personal information form," and in the second part, the Exercise Dependency Scale (EDS-21) consisting of 21 questions was used.

Personal Information Form: In the first part of our study, demographic information of individuals is included: gender, weight, active sports activity, your sports branch, how many days a week do you exercise? A personal information form containing questions was used.

Table 1. Demographic Characteristics of Individuals

		Frequency	%
Gender	Female	168	59,4
	Male	115	40,6
Body Weight	50 and below	48	17,0
	51-60	72	25,4
	61-70	70	24,7
	71-80	53	18,7
	81 and above	40	14,1
Active Sports Participation Status	Yes	127	44,9
	No	156	55,1
Your Sport Discipline	Individual	180	63,6
	Team	103	36,4
How Many Days a Week Do You Exercise	1-2	163	57,6
	3-4	87	30,7
	5-6	33	11,7

Upon examining Table 1, it is evident that the research group consisted of 59.4% females and 40.6% males. In terms of weight distribution, 17% had weights below 50, 25.4% fell within the 51-60 range, 24.7% within 61-70, and 18.7% had weights above 81. Among the participants, 55.1% did not engage in active sports, 63.6% were involved in individual sports, and 57.6% exercised 1-2 days a week.

Exercise Dependency Scale (EDS-21): The Exercise Dependency Scale (EDS-21), consisting of 21 items, was developed by Hausenblas and Downs and adapted into Turkish by Yeltepe & İkizler (2013). EDS-21 was administered to athletes to assess exercise addiction. It

is a Likert-type scale (ranging from never-1 to always-6) comprising 21 questions, designed to determine exercise addiction. EDS-21 consists of seven sub-dimensions: (1) Withdrawal (I exercise to avoid tension), (2) Continuance (I exercise even if injured), (3) Tolerance (I continuously increase exercise intensity to achieve desired effects), (4) Loss of Control (I do not reduce exercise frequency), (5) Reduction in Other Activities (I consider exercising even if I need to focus on work or studies), (6) Time (I spend a lot of time on exercise), and (7) Intention Effect (I exercise longer than planned). Higher scores on EDS-21's total average indicate a higher degree of exercise addiction symptoms. Individuals falling within the range of 3 or more are classified as exercise dependent. The dependency range is operationalized to score 5 or 6 for that item. Those scoring within the range of 3 to 4 are classified as symptomatic, suggesting a potential risk for exercise addiction. Finally, those scoring within the range of 1 to 2 are classified as asymptomatic. The total score on EDS-21 ranges from a minimum of 26 to a maximum of 126 points. Individuals scoring between 0 and 42 are classified as asymptomatic, those scoring between 43 and 84 are symptomatic, and those scoring between 85 and 126 are classified as exercise dependent. A cutoff score of 85 or higher identifies individuals at risk for exercise addiction. The internal consistency coefficient (Cronbach's Alpha) of the scale was found to be 0.95 by Hausenblas and Downs and 0.97 by Yeltepe and İkizler. The internal consistency coefficient of this study was found to be 0.97.

Data Analysis

The analysis of data was conducted using the SPSS 22 statistical software package. During the analysis, a normality test was initially performed, and it was observed that the data followed a normal distribution. To examine the relationship between age, weight, education level, and exercise addiction, a one-way ANOVA test was employed. For determining the specific groups in which the differences exist, a post-hoc analysis using the Tukey test was conducted. The significance level was set at $p<0.05$ for all analyses.

FINDINGS

The data collected on the questions to be addressed in accordance with the overall goal of the research, the findings gained, and the conclusions drawn based on these findings are reported in this section.

Table 2. Mean Score of Exercise Addiction Scale for Sedentary Individuals

	N	Min.	Max.	Mean	Sd.
Average Exercise Addiction Score	283	21,00	126,00	51,87	21,96

When examining table 2, the average score of the exercise addiction scale for the research group was determined to be 51.87±21.96.

Table 3. Comparison of Exercise Addiction Symptoms of Sedentary Individuals with Variables (Chi-Square)

		Asymptomaticn (105)	Symptomaticn (159)	Dependant (19)	df	p
Gender	Female	81	80	7	2	0,000
	Male	24	79	12		
Active Sports Participation Status	Yes	9	100	18	2	0,000
	No	96	59	1		
Your Sport Disciplin	Individual	77	87	16	2	0,001
	Team	28	72	3		

When table 3 was examined, it was determined that 81 of the women were asymptomatic, 80 were symptomatic and 7 were exercise addicts, while 24 of the men were asymptomatic, 79 were symptomatic and 12 were exercise addicts. Of the individuals doing active sports, 9 were asymptomatic, 100 were symptomatic and 18 were exercise addicts. Of the individuals doing individual sports, 77 were asymptomatic, 87 were symptomatic and 16 were exercise addicts. Of those participating in team sports, 28 were asymptomatic, 72 were symptomatic, and 3 were exercise addicts. Statistically significant differences were determined by chi-square test analysis ($p<0.05$).

Table 4. Comparison of Exercise Addiction Symptoms of Sedentary Individuals with Certain Variables (Chi-Square)

		Asymptomaticn (105)	Symptomaticn (159)	Dependant (19)	df	p
Body Weight	50 and below	22	23	3	8	0,663
	51-60	31	38	3		
	61-70	24	41	5		
	71-80	17	32	4		
	81 and above	11	25	4		
How Many Days a Week Do You Exercise	1-2	96	65	2	4	0,000
	3-4	5	75	7		
	5-6	4	19	10		

When examining table 4, while in the variable of body weight, individuals were found to be symptomatic, yet no statistically significant difference was identified. Looking at the weekly training frequency, a statistically significant difference was found in individuals being asymptomatic ($p=0,000$) ($p<0.05$).

Table 5. t-Test Analysis of Exercise Addiction Scale Sub-Dimensions in Sedentary Individuals by Gender

	Gender	N	$\bar{x}$	Sd	t	p
Loss of Control	Female	168	2,24	1,17	-2443	0,015
	Male	115	2,58	1,13		
Back off	Female	168	2,68	1,30	-4,401	0,000
	Male	115	3,36	1,25		
Tolerance	Female	168	2,48	1,23	-4,113	0,000
	Male	115	3,09	1,23		
Continuity	Female	168	2,01	1,06	-4,379	0,000
	Male	115	2,58	1,11		
Time	Female	168	2,15	1,13	-4,653	0,000
	Male	115	2,80	1,16		
Decreased Other Activities	Female	168	1,88	1,04	-3,840	0,000
	Male	115	2,37	1,08		
Intention Effect	Female	168	2,20	1,23	-4,353	0,000
	Male	115	2,84	1,2		

When examining Table 5, it has been determined that there is a statistically significant difference in the analysis of exercise addiction scale sub-dimensions according to the gender variable, in terms of loss of control (female $\bar{x}= 2,24$, male $\bar{x}= 2,58$, $p=0,015$) , back off (female $\bar{x}= 2,68$, male $\bar{x}= 3,36$, $p=0,000$), tolerance (female $\bar{x}= 2,48$, male $\bar{x}= 3,09$, $p=0,000$), continuity (female $\bar{x} =2,01$, male $\bar{x}= 2,58$, $p=0,000$), time (female $\bar{x} =2,15$, male $\bar{x}= 2,80$, $p=0,000$), decreased (female $\bar{x}= 1,88$, male $\bar{x} =2,37$, $p=0,000$) other activities, and intention effect (female

x̄= 2,20, male x̄= 2,84, p=0,000).

Table 6. t-Test Analysis of Exercise Addiction Scale Sub-Dimensions in Sedentary Individuals According to Engagement in Active Sports Status

Active Sports Participation Status		N	x̄	Sd.	t	p
Loss of Control	Yes	127	3,00	1,10	9,218	0,000
	No	156	1,87	,95		
Back off	Yes	127	3,80	1,17	11,819	0,000
	No	156	2,27	,99		
Tolerance	Yes	127	3,55	1,07	12,148	0,000
	No	156	2,06	,98		
Continuity	Yes	127	2,80	1,18	8,364	0,000
	No	156	1,79	,83		
Time	Yes	127	3,15	1,04	11,274	0,000
	No	156	1,82	,93		
Decreased	Yes	127	2,52	1,08	6,569	0,000
Other Activities	No	156	1,72	,94		
Intention Effect	Yes	127	3,25	1,14	11,589	0,000
	No	156	1,81	,94		

When examining Table 6, it has been determined that there is a statistically significant difference in the analysis of exercise addiction scale sub-dimensions according to the variable of engagement in active sports, in terms of loss of control (Yes x̄ =3,00, No x̄= 1,87, p=0,000) , back off (Yes x̄=3,80, No x̄= 2,27, p=0,000), tolerance (Yes x̄= 3,55, No x̄= 2,06, p=0,000), continuity (Yes x̄= 2,80, No x̄= 1,79, p=0,000), time (Yes x̄= 3,15, No x̄= 1,82, p=0,000), decreased (Yes x̄= 2,52, No x̄= 1,72, p=0,000) other activities, and intention effect (Yes x̄= 3,25, No x̄= 1,81, p=0,000).

Table 7. t-Test Analysis of Exercise Addiction Scale Sub-Dimensions in Sedentary Individuals According to Sports Disciplines

	Your Sport Discipline	N	x̄	Sd.	t	p
Loss of Control	Individual	180	2,36	1,25	-,387	0,699
	Team	103	2,42	1,01		
Back off	Individual	180	2,84	1,35	-1,888	0,060
	Team	103	3,15	1,24		
Tolerance	Individual	180	2,66	1,29	-1,236	0,217
	Team	103	2,85	1,20		
Continuity	Individual	180	2,24	1,16	-,002	0,998
	Team	103	2,24	1,05		
Time	Individual	180	2,35	1,23	-1,150	0,251
	Team	103	2,52	1,09		
Decreased Other	Individual	180	2,03	1,12	-1,056	0,292
Activities	Team	103	2,17	1,00		
Intention Effect	Individual	180	2,41	1,34	-,931	0,351
	Team	103	2,55	1,09		

When examining Table 7, it has been determined that there is no statistically significant difference in the analysis of exercise addiction scale sub-dimensions according to the sports

discipline's variable, in terms of Loss of Control, Withdrawal, Tolerance, Continuance, Time, Reduction in Other Activities, and Intention Effect (p>0.05).

Table 8. Analysis of Variance by Body Weight Variable in Sedentary Individuals

	Body Weight	**N**	**x̄**	**Sd.**	**f**	**p**
Loss of Control	50 and below	48	2,37	1,27	,296	0,880
	51-60	72	2,26	1,15		
	61-70	70	2,47	1,14		
	71-80	53	2,43	1,18		
	81 and above	40	2,39	1,10		
	Total	283	2,38	1,16		
Back off	50 and below	48	2,70	1,54	2,261	0,063
	51-60	72	2,68	1,23		
	61-70	70	3,07	1,16		
	71-80	53	3,23	1,37		
	81 and above	40	3,18	1,28		
	Total	283	2,96	1,32		
Tolerance	50 and below	48	2,54	1,36	,823	0,511
	51-60	72	2,59	1,25		
	61-70	70	2,80	1,16		
	71-80	53	2,85	1,33		
	81 and above	40	2,90	1,25		
	Total	283	2,73	1,26		
Continuity	50 and below	48	2,27	1,22	,411	0,801
	51-60	72	2,10	1,05		
	61-70	70	2,28	1,09		
	71-80	53	2,32	1,15		
	81 and above	40	2,30	1,14		
	Total	283	2,24	1,12		
Time	50 and below	48	2,21	1,24	,882	0,475
	51-60	72	2,31	1,15		
	61-70	70	2,50	1,16		
	71-80	53	2,52	1,27		
	81 and above	40	2,57	1,08		
	Total	283	2,42	1,18		
Decreased Other Activities	50 and below	48	1,90	1,07	1,188	0,316
	51-60	72	1,94	1,03		
	61-70	70	2,26	1,12		
	71-80	53	2,17	1,14		
	81 and above	40	2,11	,99		
	Total	283	2,08	1,08		
Intention Effect	50 and below	48	2,36	1,39	1,046	0,384
	51-60	72	2,27	1,16		
	61-70	70	2,49	1,20		
	71-80	53	2,55	1,34		
	81 and above	40	2,74	1,23		
	Total	283	2,46	1,26		

When evaluating Table 8, it has been determined that there is no statistically significant difference in the exercise addiction scale sub-dimensions according to the body weight variable (p>0.05).

Table 9. Analysis of Variance for Sedentary Individuals According to Weekly Exercise Status

How Many Days a Week Do You Exercise		N	x̄	Sd.	f	p	Tukey
Loss of Control	1-2 day[a]	163	1,84	,88	59,602	0,000	c>a
	3-4 day[b]	87	3,07	,84			
	5-6 day[c]	33	3,26	1,60			
	Total	283	2,38	1,16			
Back off	1-2 day[a]	163	2,40	1,09	45,097	0,000	c>a
	3-4 day[b]	87	3,71	1,02			
	5-6 day[c]	33	3,73	1,65			
	Total	283	2,96	1,32			
Tolerance	1-2 day[a]	163	2,14	,99	61,380	0,000	c>b, a
	3-4 day[b]	87	3,37	,94			
	5-6 day[c]	33	3,90	1,56			
	Total	283	2,73	1,26			
Continuity	1-2 day[a]	163	1,79	,81	42,062	0,000	c>b, a
	3-4 day[b]	87	2,77	1,00			
	5-6 day[c]	33	3,10	1,58			
	Total	283	2,24	1,12			
Time	1-2 day[a]	163	1,79	,84	88,043	0,000	c>b, a
	3-4 day[b]	87	3,14	,85			
	5-6 day[c]	33	3,58	1,41			
	Total	283	2,42	1,18			
Decreased Other Activities	1-2 day[a]	163	1,67	,84	34,248	0,000	c>b, a
	3-4 day[b]	87	2,57	,96			
	5-6 day[c]	33	2,79	1,48			
	Total	283	2,08	1,08			
Intention Effect	1-2 day[a]	163	1,83	,92	73,003	0,000	c>a
	3-4 day[b]	87	3,29	,90			
	5-6 day[c]	33	3,38	1,63			
	Total	283	2,46	1,26			

When Table 9 was examined, it was determined that there was a statistically significant difference in the sub-dimensions of the Exercise addiction scale according to the weekly exercise variable. (p<0.05). It was determined that individuals who exercised for 5-6 days had the highest scores in the loss of control, withdrawal, tolerance, continuity, time, reduction of other activities and intention effect subscales of the exercise addiction scale, while individuals who exercised for 1-2 days had the lowest scores.

DISCUSSION & CONCLUSION

The research group consisted of a total of 283 individuals, including 168 females and 115 males, residing in Elazığ province. The mean score of the exercise addiction scale was determined to be 51.87±21.96, indicating a moderate level of exercise addiction. When the symptoms of exercise addiction were examined, it was found that female individuals were asymptomatic, while males were symptomatic. Moreover, active sports participants were symptomatic, whereas inactive individuals were asymptomatic. Individuals engaged in team and individual sports were found to be symptomatic, showing statistically significant differences ($p<0.05$). In terms of age, those in the 17-21 age range and in terms of body weight, those in the 61-70 weight range were symptomatic, while individuals who exercised 1-2 days a week were asymptomatic. Statistically significant differences were found in terms of age and weekly exercise frequency ($p<0.05$). However, no statistically significant difference was found in terms of body weight. Berczik et al. (2012) reported that men are more likely to exhibit exercise addiction symptoms compared to women. Orhan et al. (2019) indicated that individuals attending fitness centers are symptomatic in terms of exercise frequency. This might be due to the perception that exercise is necessary for men to achieve a muscular physique, while women may believe that they cannot achieve their desired physique without simultaneous calorie reduction (Hausenblas & Fallon, 2002). Costa et al. (2013) investigated the role of exercise frequency in exercise addiction and found that men are more symptomatic than women. Some studies have found that women exhibit significantly higher levels of exercise addiction compared to men (Masters & Lambert, 1989; Pierce et al., 1997; Summers et al., 1983). Cicioglu et al. (2019) found that male athletes have significantly higher exercise addiction scores compared to other groups. When examining the sub-dimensions of the EDS-21, statistically significant differences were observed based on gender ($p<0.05$). Male individuals had higher average scores than females in the EDS-21 sub-dimensions. Üstün and Öz (2022) examined the exercise addiction levels of students at a fitness center and found that males have higher exercise addiction levels than females. This is parallel to our study. Similarly, Katra (2021) conducted a study on the relationship between exercise addiction and self-esteem among exercisers, which aligns with our findings. Also, according to Ajibua, Bewaji, & Olatunde (2021), while the pregnancy period is often viewed as a time of inactivity, maintaining an active lifestyle during this phase can offer substantial health advantages for both the mother and the fetus. Statistically significant differences were found in the analysis of the EDS-21 sub-dimensions based on the status of active sports participation ($p<0.05$). The values of active sports participants were found to be higher than those of inactive individuals. Üstün and Öz (2002) found statistically significant differences in the sub-dimensions of the EDS-21 based on regular exercise participation. Erdoğan et al. (2023) conducted a study on university students' exercise addiction and reported statistical significance in terms of exercise participation status. According to these results, individuals who engage in regular sports tend to exhibit behaviors related to exercise addiction. No statistically significant difference was observed in the analysis of the EDS-21 sub-dimensions based on the sport type variable ($p>0.05$). The values of team sports participants were found to be higher than those of individual sports participants. In terms of body weight variable, no statistically significant difference was observed ($p<0.05$). Dervişoğlu et al. (2022) found no statistically significant difference in body weight in their study on exercise addiction among amateur athletes. In a study by Güneş (2020) on the relationship between exercise addiction and quality of life among individuals who regularly exercise, it was found that exercise addiction increases as weight increases. Uzun (2020) conducted a study on 320 students who had been exercising for at least 1 year at Gaziantep University's School of Physical Education and Sports, and found no significant difference between exercise addiction and body weight. Statistically significant differences were found in the analysis of the EDS-21 sub-dimensions based on weekly exercise frequency ($p<0.05$). Arslanoğlu et al. (2021) reported statistically significant differences in

most sub-dimensions of the exercise addiction scale except for the excessive focus and emotion development sub-dimensions. Temel and Tukel (2021) reported that preliminary results revealed university students scored highest in the "improvement condition" of health outcomes, suggesting a greater likelihood of them participating in physical activities for health reasons. Nassar and Shaheen (2014) found that university students have low levels of physical activity and health-promoting behaviors. Başoğlu (2018) reported that exercise addiction levels increase with increasing weekly exercise frequency.

In conclusion, In the research group, it was determined that male participants had higher exercise addiction than female participants, individuals who do active sports compared to individuals who do not do sports, and individuals with individual sports branches compared to individuals with team sports branches.

Recommendation

In line with this research, it will contribute to informing individuals about exercise addiction and the healthy upbringing of future generations, and meetings and seminars can be organized by some public institutions and institutions to explain the benefits of exercise to sedentary individuals.

Limitations

The study is limited to people who are sedentary. This limitation reveals the views of sedentary people on exercise, although it adds to the uniqueness of the study.

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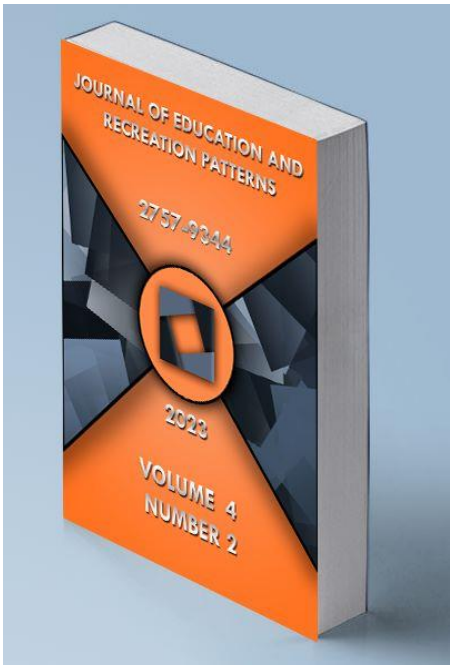
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Musa ŞAHİN[1], Mahmut Esat UZUN[2]

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[1]Musa Şahin, Karabük University,High School of Physical Education and Sports, musasahin@karabuk.edu.tr, https://orcid.org/0000-0001-9031-3665
[2]Mahmut Esat Uzun, Karabük University, High School of Physical Education and Sports, mahmutuzun@karabuk.edu.tr, https://orcid.org/0000-0001-6304-0227

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The Effect of 8 Weeks Preparatory Training Program on Body Composition and Blood Parameters in Elite Wrestlers

Musa Şahin[1], Mahmut Esat Uzun[2]

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ABSTRACT
The aim of this study is to evaluate the effects of an 8-week training program applied during the preparatory period of elite-level wrestlers on blood parameters and body composition. This study involved the voluntary participation of 10 Greco-Roman wrestlers competing at the national team level and achieving rankings in international tournaments. The participants had an average age of 22.00 ± 3.2 years, an average height of 172.00 ± 8.4 cm, and an average weight of 80.50 ± 11.9 kg. These wrestlers had approximately 12 years of wrestling experience. An 8-week preparatory training program, prepared by experts and coaches, was implemented for participant wrestlers. This training program was applied at the national team level and in the adult category. It was carried out following a 20-day active rest period during the offseason. The following tests and measurements were conducted at the beginning and end of the training program. The data obtained were statistically analyzed using SPSS version 10.0. The mean values and standard deviations of the measured parameters for all participants were calculated. The paired-sample t-test was applied to identify differences between pre and post 8-week preparatory training program. When the participants' blood lipid values were examined, no significant difference was observed in HGB and HCT values between the pre-test and post-test, while RBC and WBC values showed a statistically significant increase ($p<0.05$). When the participants' body composition values were examined, a significant decrease was observed in body fat percentage (BFP) and body fat mass (BFM), while there was a significant increase in lean body mass (LBM) ($p<0.05$). In conclusion, it has been determined that the 8-week preparatory training program has positive effects on weight, body fat percentage, lean body mass, MaxVo2, strength, and immune health.

Keywords: Body Composition, Hematological Parameters, Training Program

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INTRODUCTION

Wrestling is one of the oldest combat sports in the world and dates back to as early as 708 BC, being a part of the ancient Greek Olympic Games (Chaabene, et al., 2017; Khalili-Borna & Honsik, 2005; Zaccagni, 2012). Wrestling remains a sport of great significance to people today, much like it was in the past (Petkov & Angelov, 1978). Elite wrestlers typically train for 5 or 6 days a week, often having two or more sessions per day (Demirkan et al., 2015; Horswill, 1992). As competition periods approach, the amount of technical and tactical training increases (Demirkan et al., 2015; Horswill, 1992; Yoon, 2002).

In recent years, changes in the rules of wrestling have led to an increase in the duration, tempo, intensity, and number of matches a wrestler has to participate in. Therefore, training programs and practices have become crucial (Brodthagen et al., 1985; Schwandt et al., 1991). Elite wrestlers' ability to adapt to this intensity depends on undergoing adequate preparation periods. Without sufficient preparation, the short recovery times between training sessions, combined with the physical demands of wrestling, can lead to unwanted fatigue during the weekly cycle and training phase (Chaabene et al., 2017; Yoon, 2002). As a result, it is necessary to conduct a detailed analysis of wrestlers' energy systems, strength, body mass, and blood values, especially in their preparatory training, and adjust training programs accordingly (Akbal, 1998).

In a study conducted on elite wrestlers, the variable maxV02 was found to be significantly different between successful and unsuccessful wrestlers, with first-place wrestlers reported to have lower body fat percentages and higher strength and speed compared to second-place wrestlers (Ziyagil, 1994). These results indicate that subcutaneous fat thickness and weight control are important criteria for success (Yoon, 2002). This is because body fat can have a negative impact on motor skills, and athletes are expected to have low body fat levels (Malina & Geithner, 2011). Wrestlers' off-season body fat values range from 8% to 16%, while during preparatory training, these values range from 3% to 13% (Horswill, 1992; Yoon, 2002).

When we look at changes in blood values, hematological parameters can vary in response to exercise, and these changes can depend on factors such as the type, intensity, and duration of the exercise (Wardyn et al., 2008). During exercise, there is an increase in the concentration of hemoglobin, erythrocytes, and plasma proteins in the blood. This increased concentration assists the body in meeting the elevated oxygen demand during exercise by speeding up blood flow and diverting it from the liquid vessels into the tissues (Karacabey, 2004; Özdengül, 1998). Due to the increased blood flow and rapid circulation during exercise, there is an increased participation of leukocytes (white blood cells) in the bloodstream, leading to an increase in the number of leukocytes in the blood. Hormonal changes induced by exercise can also play a role in this increase (Waern et al., 1993; Akgün, 1994).

Finally, providing a comprehensive examination of the training outcomes regarding body composition and blood parameters during the preparatory period of elite wrestlers will assist coaches and strength and conditioning experts. In conclusion, the aim of this study is to investigate the effects of an 8-week training program applied during the preparatory period of national-level wrestlers on specific hematological parameters and body composition. The goal of this study is to ensure that elite wrestlers undergo a sufficient preparatory period to adapt to the increased intensity in recent times and to analyze their body masses and blood values for the development of training programs accordingly. This study is structured around the following hypotheses:

Hypothesis 1: The preparatory training program for elite wrestlers has an effect on Hemoglobin and Hematocrit parameters.

Hypothesis 2: The preparatory training program in elite wrestlers has an effect on Eritrosit and Lökosit parameters.

Hypothesis 3: The preparatory training program in elite wrestlers has an effect on Body Fat Percentage (%).

Hypothesis 4: The preparatory training program in elite wrestlers has an effect on Body Fat Mass (kg).

Hypothesis 5: The preparatory training program in elite wrestlers has an effect on Lean Body Mass (kg).

These hypotheses form the basis of the research and aim to evaluate the effects of an 8-week training program applied during the preparatory period of elite-level wrestlers on blood parameters and body composition.

METHOD

Research Design

An 8-week preparatory training program, prepared by experts and coaches, was implemented for participant wrestlers. This training program was applied at the national team level and in the adult category. It was carried out following a 20-day active rest period during the offseason. The following tests and measurements were conducted at the beginning and end of the training program. A one-week sample training program is shown in Table 1.

Table 1. Training Program

Week	Day	Training	
		Hour	**content**
An 8-Week Implemented Training Program	Monday	17:30 19:30	Maximal Strength Training, Intensity: 80-100%.
	Tuesday	17:30 19:30	Technical Tactical Practice, Intensity: 60-70%.
	Wednesday	17:30 19:30	Active Recovery
	Thursday	17:30 19:30	Maximal Strength Training, Intensity: 80-90%
	Friday	17:30 19:30	Partnered Strength Training, Intensity: 60-70%.
	Saturday	09:30 11:30	Cross Training and Interval Workouts.
	Sunday		Rest

Research Group

This study involved the voluntary participation of 10 Greco-Roman wrestlers competing at the national team level and achieving rankings in international tournaments. The participants had an average age of 22.00 ± 3.2 years, an average height of 172.00 ± 8.4 cm, and an average weight of 80.50 ± 11.9 kg. These wrestlers had approximately 12 years of wrestling experience. Before measurements were taken, the athletes were informed about the procedures. They willingly agreed to participate in the study, and voluntary participant forms were completed in accordance with the Helsinki Declaration. Prior to measurements, the athletes engaged in a warm-up session that lasted about 10 minutes (consisting of running and stretching). Body composition measurements were taken before the warm-up. The athletes were instructed not to eat, consume caffeine, or take medication for at least 4 hours before the measurements. After being informed about the study and potential risks and discomforts associated with the research and test procedures, written informed consent was obtained according to the Helsinki Declaration (World Medical Association Helsinki Declaration, 2000). All measurements for the research group were conducted by trained professionals in the Laboratory of Hasan Doğan School of Physical Education and Sports at Karabük University and the Public Health Laboratory of the Karabük Provincial Health Directorate.

Table 2. Physical Parameters of Participating Athletes

	Min	Max	Mean ± Sd.
Age (Years)	19,00	26,00	22,00 ±3,2
Height (Cm)	162,00	184,00	172,00 ±8,4
Weight (Kg)	63,00	106,00	80,50 ±11,9

When Table 2 is examined, the average age of the athletes was found to be 22.00 ± 3.2 (years), the average height was 172.00 ± 8.4 (cm), and the body weight was 80.50 ± 11.9 (kg).

Data Collection Tools

Height and Body Weight Measurement: The participants' body weights were measured on a weighing scale with a sensitivity of 0.01 kg, in kilograms (kg), barefoot and wearing wrestling singlets. Their heights were measured while standing upright with bare feet, using a metal meter with a sensitivity of 0.01 cm fixed on the weighing scale.

Body Composition Analysis: Body fat percentage and body muscle mass measurements of the participants were obtained using the Inbody 120 Bioimpedance Body Composition Analyzer. Body composition analysis involves sending a mild electrical current through electrodes that come in contact with the hands and feet, and the body analysis device is used to measure parameters such as body fat tissue, muscle tissue, body water, and soft tissue.

Determination of Lipid Blood Parameters of Participants: Blood samples of the participating wrestlers were collected into K3-EDTA tubes with purple caps (Becton Dickinson VACUTAINER disodium EDTA) by a phlebotomist on an empty stomach before the start of the training program and after its completion. The collected blood samples were sent to the laboratory within 1 hour for the determination of hemogram values, including WBC, RBC, HGB, and HCT, using the Sysmex XN-1000 (Sysmex Corporation, Kobe, Japan) device. The obtained results were evaluated by a biochemistry specialist.

Statistical Analysis

The data obtained were statistically analyzed using SPSS version 10.0. The mean values and standard deviations of the measured parameters for all participants were calculated. The paired-sample t-test was applied to identify differences between pre and post 8-week preparatory training program (Özdamar, 1997).

Research Ethics

The study was reviewed and approved by the Karabük University Non-Interventional Clinical Research Ethics Committee (Approval Date: December 20, 2022; Approval No. 2022/1202). Relevant ethical principles were followed throughout the research process, and all participants were informed about the purpose and procedures of the study, and their voluntary participation was ensured.

FINDINGS

The findings of this study focus on the comparisons between the blood lipid values and body composition of athletes before and after their training periods.

Table 3. Comparative Analysis of Blood Lipid Values Before and After Training in Athletes

		N	Mean ± Sd.	*t*	*p*
Hemoglobin HGB	Before	10	14,49 ±1,9	-1,266	,237
	After	10	14,65 ±2,1		
Hematocrit HCT	Before	10	44,41 ±3,2	,679	,514
	After	10	43,91 ±3,5		
Red blood cells RBC	Before	10	5,12 ±0,6	-2,749	**,023***
	After	10	5,54 ±0,71		
White blood cells WBC	Before	10	6,57 ±2,7	-2,492	**,034***
	After	10	7,27 ±2,9		

When Table 3 is examined, before training: The mean hemoglobin level before training was 14.49 g/dL with a standard deviation of 1.9. After Training: The mean hemoglobin level after training was 14.65 g/dL with a standard deviation of 2.1. Interpretation: There was no statistically significant difference in hemoglobin levels before and after the training program ($p = 0.237$). This suggests that the training program did not have a significant impact on hemoglobin levels in the participating athletes. Before Training: The mean hematocrit level before training was 44.41% with a standard deviation of 3.2. After Training: The mean hematocrit level after training was 43.91% with a standard deviation of 3.5.

Interpretation: Similar to hemoglobin, there was no statistically significant difference in hematocrit levels before and after the training program ($p = 0.514$). This indicates that the training program did not significantly affect hematocrit levels. Before Training: The mean red blood cell count before training was 5.12 million cells/μL with a standard deviation of 0.6.

After Training: The mean red blood cell count after training was 5.54 million cells/μL with a standard deviation of 0.71. Interpretation: There was a statistically significant increase

in red blood cell count after the training program (p = 0.023*). This suggests that the training program led to an increase in the number of red blood cells in the participating athletes, which can be important for oxygen transport and overall endurance. Before Training: The mean white blood cell count before training was 6.57 thousand cells/μL with a standard deviation of 2.7.

After Training: The mean white blood cell count after training was 7.27 thousand cells/μL with a standard deviation of 2.9. Interpretation: There was a statistically significant increase in white blood cell count after the training program (p = 0.034*). This indicates that the training program resulted in a higher number of white blood cells, which are important for immune function and response to exercise-related stress.

Table 4. Comparative Analysis of Body Composition Values in Participating Athletes Before and After Training

		N	Mean ± Sd.	*t*	*P*
Body Fat Percentage (%)	Before	10	12,00 ±2,1	3,92	,003*
	After	10	10,87 ±1,8		
Body Fat Mass (kg)	Before	10	11,15 ±2,9	2,39	,040*
	After	10	10,01 ±2,5		
Lean Body Mass (kg)	Before	10	75,56 ±7,7	-10,07	,000*
	After	10	76,55 ±9,1		

When Table 4 is examined, before training: The mean body fat percentage before training was 12.00% with a standard deviation of 2.1. After Training: The mean body fat percentage after training was 10.87%. Interpretation: There was a statistically significant decrease in body fat percentage after the training program (p = 0.003*). This indicates that the training program led to a reduction in body fat percentage among the participating athletes, which is a positive outcome in terms of improving body composition. Before Training: The mean body fat mass before training was 11.15 kg with a standard deviation of 2.9. After Training: The mean body fat mass after training was 10.01 kg. Interpretation: There was a statistically significant decrease in body fat mass after the training program (p = 0.040*). This suggests that the training program resulted in a reduction in the absolute amount of body fat in the participating athletes. Before Training: The mean lean body mass before training was 75.56 kg with a standard deviation of 7.7. After Training: The mean lean body mass after training was 76.55 kg. Interpretation: There was a statistically significant increase in lean body mass after the training program (p < 0.001*). This indicates that the training program led to an increase in lean muscle mass among the participating athletes, which is a positive outcome for strength and athletic performance.

DISCUSSION

The aim of this study is to ensure that elite wrestlers undergo a sufficient preparatory period to adapt to the increased intensity and to analyze their body weights and blood parameters for the development of training programs accordingly. The participants in the research had their parameters evaluated, including Hemoglobin, Hematocrit, Erythrocyte, Leukocyte, Body Fat Percentage (%), Body Fat Mass (kg), and Lean Body Mass (kg), and these results were compared with similar studies.

Numerous studies have been conducted regarding the effects of exercise on hematological parameters (Guyton and Hall, 1996; Çavuşoglu, 1991). Furthermore, it is emphasized that the type and intensity of exercise can impact blood parameters and that exercise itself can influence these parameters (Çavuşoğlu, 1991). In the results of our study, while there were no significant changes in hemoglobin and hematocrit levels, the training program had a notable positive effect on red blood cell (RBC) and white blood cell (WBC) counts. The increase in RBCs may contribute to improved oxygen transport and endurance, while the increase in WBCs may indicate a positive immune response to exercise. These findings are scientifically important as they provide insights into the physiological responses of elite wrestlers to their preparatory training program.

In a study conducted on elite male Taekwondo athletes during a 4-week training camp, certain hematological blood parameters were examined. According to this study, no significant differences were found in HGB, WBC, and HCT values, while a statistically significant increase was observed in RBC values (Spodaryk, 1993). While HGB, HCT, and RBC values were similar to our study, WBC values showed differences, which were thought to be due to the shorter duration of the training. In a study on Olympic athletes, it was found that sports emphasizing endurance had higher RBC levels, and athletes had higher RBC levels compared to sedentary individuals. The results of this study support our findings. Telford and Cunningham (1991) reported a significant increase in WBC levels in 12 male athletes after a 6-week intense training program. This aligns with our study. In another study, Patlar (2010) found that especially resistance exercises led to an increase in stress and cortisol levels, which in turn resulted in an increase in leukocyte levels. Additionally, Patlar (2010) reported a significant increase in HCT values in 10 athletes after a 20-day chronic exercise program. Other studies, such as Günay et al. (2006), Nieman et al. (1999), Freund et al. (1991), Ersöz et al. (1995), and Wade et al. (1987), have also reported changes in hemoglobin levels due to exercise. Nieman and colleagues observed an increase in hemoglobin levels in sedentary individuals after exercise (Nieman et al., 1999). Also, Bayer, Eken, Yağın ve Ilkim (2022) found that the act of fasting during Ramadan can have detrimental effects on anaerobic performance, particularly when individuals experience high levels of hunger. The difference in these studies could be attributed to the significantly lower number of training days.

Achieving optimal body composition is a significant concern for wrestlers, and body fat percentage is believed to be of particular importance to athletes and coaches. Furthermore, it has been noted that "wrestlers are among the athletes with the lowest body fat percentages in categorized weight sports activities" because having a low body fat percentage is believed to be advantageous for optimal performance (McArdle et al., 1998). In our study, we observed a statistically significant decrease in body fat percentage and body fat mass after the training program. This indicates that the training program led to a reduction in body fat percentage and the amount of body fat among the participating athletes, which is a positive outcome for improving their composition.

In one study, they observed a decrease in fat mass and an increase in lean body mass with only regular exercise, without implementing any specific diet (Karakaş et al., 2005). In another study, the impact of strength training on body composition was examined, and significant reductions in body fat percentage and body fat mass, as well as a significant increase in lean body mass, were observed before and after the training period (Harbili et al., 2005). In a similar study, the effects of continuous interval running training on body composition were investigated, and they found a significant decrease in body fat percentage. These findings support the results of our study (Revan et al., 2008).

As mentioned by Peterson et al. (2006), muscle strength allows a specific muscle to produce the same amount of work in a shorter amount of time, which is crucial for activities like sprinting, jumping, and rapid changes in direction (Civan et al., 2022). These

characteristics are also relevant to wrestlers, as both offensive and defensive maneuvers in wrestling require high-level and maximum strength (Mirzaei et al., 2011; Mirzaei et al., 2009; Passelergue & Lac, 2012; Yoon, 2012). In this study, there was a statistically significant increase in lean body mass after the training program. This indicates that the training program led to an increase in lean muscle mass among the participating athletes, which is a positive outcome for strength and athletic performance. Many studies have reported that high muscular endurance is one of the key fitness factors contributing to wrestling performance success (Horswill, 1992). It has been stated that training experience significantly influences performance achievements in strength-endurance tests in wrestlers, with longer training experience (over 9 years) leading to higher values compared to those with average (7-9 years) or shorter training experience (up to 6 years) (Sterkowicz & Starosta, 2005). This finding emphasizes the importance of a wrestler's training history on their level of muscular endurance (Chaabene et al., 2017). Our findings are consistent with the results in the literature.

Conclusion

In conclusion, it has been determined that the 8-week preparatory training program has positive effects on weight, body fat percentage, lean body mass, MaxVo2, strength, and immune health.

In light of all this information and based on our study and literature review, it is clear that our findings indicate positive improvements in the performance of elite wrestlers who participated in the designated training program and were exposed to high-intensity exercise. Furthermore, the 8-week wrestling training not only did not cause an increase in red blood cell and white blood cell counts, but it also had a positive impact on body composition, leading to a decrease in body fat percentage and body fat mass, while increasing lean body mass (muscle mass). These findings suggest that the training program positively influenced oxygen transport, high muscular endurance, which is considered one of the key fitness factors contributing to wrestling performance, and, in light of the literature, may have a positive effect on immune health. Therefore, it is recommended that all wrestlers regularly participate in preparatory training programs. Future research may explore whether there are effects beyond physical fitness, such as autophagy (cell renewal), in wrestlers.

Limitations

In this study, 10 elite-level wrestlers with an average age of 22 years who trained wrestling for 8 weeks and 5 days a week and who obtained degrees in international tournaments participated.

One limitation of this study is the sample size. The study may have been strengthened with a larger and more diverse group of elite wrestlers. A larger sample could provide a broader perspective on the effects of the training program. The study's 8-week preparatory training program may not capture the long-term effects of such training. Longer-term follow-up assessments could offer insights into the sustainability of the observed changes in body composition and blood parameters.

Future research could benefit from monitoring and controlling athletes' diets during the training period to isolate the effects of exercise. The absence of a control group in this study makes it challenging to attribute changes solely to the training program. Including a control group that does not undergo the training could help establish causation.

Recommendations

Conduct long-term studies to assess the sustainability of the observed improvements in body composition and blood parameters. This would provide a more comprehensive understanding of the training program's impact on elite wrestlers' health and performance.

Incorporate dietary analysis and control into future research to differentiate the effects of exercise from diet. This would offer a more comprehensive view of the factors influencing body composition.

Include a control group in future studies to better establish the causal relationship between the training program and the observed changes. A control group would help account for external factors that might influence the results.

Expand the participant demographics to include a more diverse group of elite wrestlers. This would enhance the generalizability of the findings to a broader population of athletes.

Explore additional health assessments beyond physical fitness, such as autophagy or immune function, to gain a more comprehensive understanding of the holistic impact of training programs on wrestlers' health.

In summary, while this study provides valuable insights into the positive effects of an 8-week preparatory training program on elite wrestlers, it is important to acknowledge its limitations. Future research can build upon these findings by addressing these limitations and conducting more extensive and comprehensive investigations into the impact of training on athletes' health and performance.

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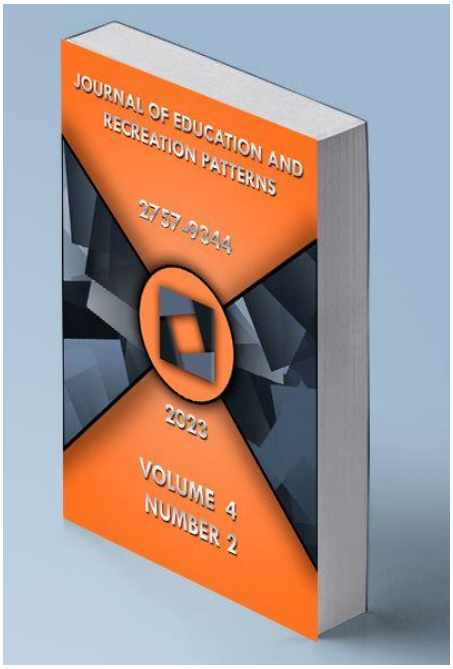
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The Effect of Myofascial Release Technique Applied with Foam Roller on Jumping, Flexibility and Short Distance Swimming Performance in Swimmers

Tahir Volkan ASLAN[1], Muhammed Zahit KAHRAMAN[2]

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[1]Tahir Volkan Aslan, Mersin University, tahirvolkanaslan@gmail.com, https://orcid.org/0000-0002-5839-1927
[2] Muhammed Zahit Kahraman, Muş Alparslan University, mzkahraman04@gmail.com, https://orcid.org/0000-0003-1295-7611

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The Effect of Myofascial Release Technique Applied with Foam Roller on Jumping, Flexibility and Short Distance Swimming Performance in Swimmers

Tahir Volkan Aslan[1], Muhammed Zahit Kahraman[2]

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ABSTRACT

Myofascial release techniques, particularly when applied using foam rollers, have gained prominence in sports science due to their potential benefits in enhancing athletic performance. This study delves into the impact of this technique on swimmers, a group where flexibility, jump capacity, and short-distance speed are paramount.The research engaged 12 male swimmers, all of whom had been active in the sport for a minimum of three years. Their average age stood at 19.58±.66 years, with an average height of 176.83±8.49 cm and body weight of 75.43±6.62 kg. Following a 5-minute low-intensity warm-up run, participants underwent 10 minutes of dynamic stretching exercises targeting major muscle groups involved in swimming. This was followed by a self-myofascial release (SMR) protocol using foam rollers, focusing on muscle areas most prone to tension and strain in swimmers. These protocols were applied consecutively at 48-hour intervals and at consistent times of the day to ensure uniformity.Post-protocol assessments revealed varying impacts on performance metrics. While the countermovement jump measurements remained statistically unchanged ($p>0.05$), significant improvements were observed in the 15 m swimming (t: 2,307, p: ,041), squat jump (t:,-2,541, p:,027), and flexibility (t:-2,491, p:,030) tests ($p<0.05$).These findings underscore the potential of integrating myofascial release techniques with foam rollers into swimmers' training regimens. Not only does this approach enhance specific performance parameters like squat jump and flexibility, but it also offers broader implications for the athletic community, emphasizing the importance of muscle relaxation and flexibility in achieving peak performance. Future research could delve deeper into the long-term impacts of such techniques and explore their efficacy across different athletic disciplines.

Keywords: Flexibility, Foam roller, Jumping, Myofascial Release, Swimming

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INTRODUCTION

Swimming is one of the sports branches that is performed in water and provides the best development of physical capacity. While it is preferred by all age groups, it provides good cardiovascular endurance without the need for physical activities and weight training that cause stress on the skeletal-muscular system (Çelebi, 2008). However, the pressure in the water has an effect on breathing that makes breathing difficult, so the energy required to swim a distance is four times the energy required to run the same distance (Odabaş, 2003). In swimming, the arms and legs move by pushing against the passive resistance of the water. In swimming, the resistance of the water against the driving force and the difficulty of oxygen intake in the water environment cause more energy expenditure compared to other sports (Maglischo, 1993). In other words, the most important feature that distinguishes swimming from other sports is the energy spent to move horizontally in water. Since friction prevents movement, it is tried to be minimised. It is known that the energy required is much more than other sports due to the fact that water makes breathing difficult with the effect of pressure (Günay, 2008). At this point, recovery practices are very important for sportive performance.

Self-myofascial release (SMR) is an intensive self-treatment with rigid foam rollers (FR) and other small hand tools based on the application of compressive force on soft tissue (Macdonald et al. 2014). Fascia acts as a support, stability and cushioning mechanism for bones and muscles and surrounds many different organs and muscles (Barnes, 1997). Muscle fascia has been found to aid muscle mobility, cellular circulation in the body and muscle flexibility and it is vital that the fascia is loose and malleable (Aboodarda et al., 2015). Injuries, inflammation, overuse (training, competition, etc.) cause disruption of the fascia structure and dehydration of the fascia. The deterioration in the structure of the fascia leads to decreased flexibility and loss of range of motion and performance (Cheatham, 2015).

Recently, myofascial release technique (MFR) has become an increasingly preferred technique, especially among sports scientists and trainers. MFR, a technique used in manual therapy, is used as an effective application to reduce pain and increase function by creating low load, long stretching in the myofascial complex and restoring optimal length (Ajimsha et al., 2015). MFR techniques provide soft tissue formation by relaxing the tense connective tissues (Prentice, 2003). In this technique, a cylinder is usually used in which a person puts his/her body on the FR (foam roller) and moves it back and forth to apply pressure to the fascia surrounding the muscles. This relaxes the fascia (Curran et al., 2008; Healey et al., 2014; Renan-Ordine et al., 2011). Self-myofascial release technique is a technique applied to restore the appropriate tension of tissues, increase their flexibility (Bradbury-Squires et al., 2015; Halperin et al., 2014; Macdonald et al., 2013; Mauntel et al., 2014), eliminate trigger points (Barnes, 1997; Schleip, 2003) and increase muscle recovery after exercise (Cheatham et al., 2015; MacDonald, et al., 2014; Weerapong et al., 2005).

The most important feature of the myofascial release technique, which is widely used among athletes before exercise, is the increase in flexibility without a decrease in anaerobic power performance (Renan-Ordine et al., 2011). Flexibility has an important place in sports in order to reach the desired motoric power and constitutes the basic element of training. Decreased flexibility prevents the movement from being fast and efficient. Many studies reveal that flexibility is one of the most important parameters affecting swimming performance and anaerobic muscle performance in swimming (Keleş, 2016; Shrier, 2004; Zakas et al., 2003). Flexibility can affect the reduction of foot strike time by enabling the swimmer to increase speed. This improvement is realised by increasing the applied force in terms of distance and level. To improve swimming performance, it is important to improve shoulder, spine, knee and ankle flexibility (Güler, 2000). Improving ankle flexibility in swimmers can also be effective in improving performance (Škarabot et al., 2015). Flexibility is also important to prevent injury.

The continuous repetition of movements in swimming creates tension in the muscles and these tensions can lead to injuries. For this reason, it is stated that it will be beneficial to include swimmers to perform static flexibility exercises after dynamic training before training while arranging the training programme (Geyik, 2019; Uçak, 2019).

In this direction, due to the relatively small number of studies on myofascial release technique applied with foam rollers and the lack of consensus in the studies, it is thought that our study will be useful in enlightening the mechanism of action of foam roller application in terms of its effects on sportive performance, and at the same time, it will be useful in terms of creating an infrastructure by shedding light on other scientific studies on fascia techniques within manipulative treatments. In the study, it was aimed to investigate the effect of myofascial relaxation technique applied with foam rollers on jumping, flexibility and short distance swimming performance in swimmers.

METHOD

Participants

The study group consisted of 12 male swimmers who had been swimming for at least three years, had an average age of 19.58±.66 (years), height 176.83±8.49 (cm), and body weight 75.43±6.62 (kg) (Table 1). In order to be included in the study, swimming athletes must have the following characteristics: (a) have at least 3 years of experience in swimming; (b) not have any functional limitations that may affect test performance; (c) not have any medical condition that may affect the tests; (d) maintain regular physical activity during the study period. All athletes were informed about the requirements and risks of the study and signed an informed consent form stating that they voluntarily participated in the study. Participants were also asked to sleep for 7-8 hours before the tests. The study was initiated after the approval of Muş Alparslan University Scientific Research and Publication Ethics Committee (05.06.2023-95181) and was conducted in accordance with the Declaration of Helsinki. All tests and exercise practices were performed at the same time of the day (09.00-11.00).

Table 1. Descriptive Statistics Table of Athletes Participating in the Study

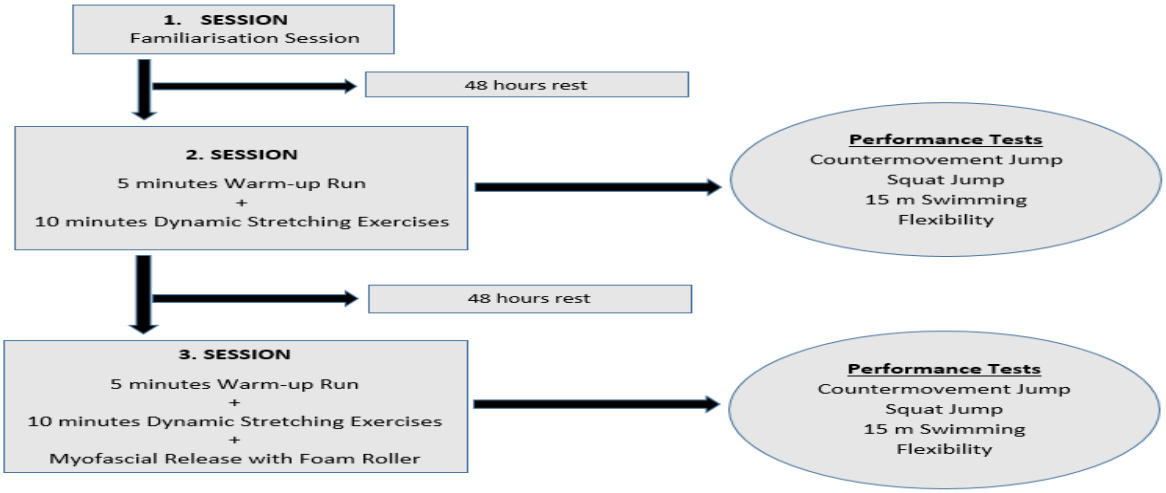
Parameters	N	x̄±Sd.
Age (year)	12	19.58±.66
Height (cm)	12	176.83±8.49
Body Weight (kg)	12	75.43±6.62

Experimental Design of the Study

This study consists of a single group of twelve male swimming athletes and there is no control group. Prior to data collection, all swimmers were recruited to a familiarization phase session in which they practiced stretching exercises and a self-myofascial release technique and test parameters. This familiarization session was designed to minimize learning effects caused solely by the mechanics of performing the study protocols. In the second session of the study, participants performed a 5-minute low-intensity warm-up run at an average heart rate of 120 beats/min followed by 10 minutes of dynamic stretching (DS) exercises targeting the major muscle groups involved in swimming (Table 2). Then, jumping (Countermovement Jump (CMJ), Squat Jump (SJ)), 15 m swimming and flexibility performance tests were performed. In the third session, the athletes underwent the same protocol as in the second session plus self-myofascial release (SMR) with a foam roller focusing on the muscle areas most prone to tension and strain in swimmers. These protocols were applied consecutively at 48-hour intervals and at consistent times of the day (09.00-11.00) to ensure uniformity. The same tests were performed again after the last session and the measurement results were compared with each other after

both applications (Figure 1).

Figure 1. *Experimental Design Diagram*



Dynamic Stretching Exercise Protocol

In the second session of the study, participants performed a 5-minute low-intensity warm-up run at an average heart rate of 120 beats/min followed by 10 minutes of dynamic stretching (DS) exercises targeting the major muscle groups involved in swimming (Table 2). The heart rate (HR) values of the athletes during the 5-minute warm-up run were monitored using Polar brand H10 (Polar Electro, Finland) model chest bands and IOS Polar Team application using a tablet. In dynamic stretching exercises consisting of 10 different movements performed between two 15 m lines, 1 movement lasted 1 minute. At the beginning of the 15 m line, the movement was started, the movement was continued for 20 seconds (s), the end of the line was reached and after resting on the line for 10 (s), the same movement was repeated. When returning to the starting line, after resting for 10 seconds, the second movement was started and 10 different movements were applied in this way (Çolak & Çetin 2010).

Table 2. Dynamic Stretching (DS) Exercises

DS Exercises	Description	10 min
High Knee Run	Knees are pulled to the chest and arms are waved while running.	1 min
Butt Kick	The heels touch the hips and run with running steps.	1 min
Power Skip	One leg is jumped with running steps and the knee is pulled up. Arms join the movement rhythmically.	1 min
Straight Leg Kick	With walking steps, the hands are kept parallel to the front and the toes of the feet touch the hands without bending the knees.	1 min
Carioca	With running steps, the right foot is taken diagonally in front of the left foot. Then the left foot takes a step, and the opposite of the same movement is done and the movement is continued in this way.	1 min
A- Skip	Knees are pulled to the chest with running steps. Arms are rhythmically folded and progress with light jumps.	1 min
B- Skip	In addition to the A-skip, the legs are swung straight forward after the knees are pulled to the chest.	1 min
Walking Lunge	Step forward with walking steps and move forward with the knee of the back leg touching the floor.	1 min
Rapid high knees	Fast knee is pulled to the abdomen with running steps.	1 min
High knees pull	When walking, one knee is pulled up while the arms are moved down.	1 min

Foam Roller Protocol

Myofascial relaxation technique with foam roller was applied to hamstring, quadriceps, gluteal and gastrocnemius muscles by the participants themselves (Grid Foam Roller). For each selected muscle group, the athlete was asked to move from the starting point to the end point of that muscle region by applying pressure with their own body weight. The protocol was applied for 30 seconds (s) for each muscle group and once for each region. There was a 15 s transition time between the two exercise applications. Each technique was performed bilaterally with no rest period when changing limbs.

Data Collection Tools

Height Measurement: The height of the participants was measured with SECA brand height meter with bare feet.

Body Weight Measurement: The body weights of the individuals participating in the study were measured with Tanita BC 730 Body Analysis Scale with bare feet, wearing only shorts and t-shirt.

Countermovement Jump Test (CMJ): The athlete was informed that he/she should stand on the jumping mat and keep his/her hands on his/her waist during the jump. While the athlete was standing in an upright position with hands on waist, he/she first squatted 90 degrees to the squat position and suddenly made a vertical jump at any time. The CMJ of the athletes was measured with an electronic jump mat (Smart Jump; Fusion Sport, Australia). Each athlete was given enough rest time (3 minutes) between repetitions and two trials were performed; the higher performance was recorded (Gezer, 2020).

Squat Jump Test (SJ): When performing the SJ test, arm swing will not be allowed as in the countermovement (CMJ) test. The athlete made a squat jump at a time of his/her choice while waiting with his/her hands on the waist and knee bent 90 degrees. Each athlete was given enough rest time (3 minutes) between repetitions and two attempts were made and the higher performance was recorded. SJ measurements of the athletes were measured with an electronic jump mat (Smart Jump; Fusion Sport, Australia) (Gezer, 2020).

Flexibility Test: A sit and reach bench measuring 35 cm long, 45 cm wide, by 32 cm high was employed in the sit and reach test to measure the flexibility of the hamstring and back muscles. The athletes stood with the soles of their feet on the bench and reached forward as far as they could reach without bending their knees; the distance reached was recorded in centimeters. The test was repeated, and the better result was accepted as the flexibility value (Hopkins, 2000).

15- meter Swimming Test: The 15 m swimming test measurements of the athletes were performed in a semi-Olympic indoor swimming pool with a water temperature of 27 ^{o}C, pool dimensions of 25 × 12.50 m and an ambient temperature of 30 ^{o}C. The participants were asked to complete the 15 m distance as soon as possible after the exit command using the freestyle swimming method. A 'Seiko' brand stopwatch was used in the measurements of the participants in the 15 m swimming performance and their degrees were taken.

Statistical Analysis

SPSS 22.0 package programme was used for statistical analysis of the data. Normality levels of the data were determined by Shapiro-Wilk test. Parametric tests were preferred in the analysis of normally distributed data. Paired Sample T Test was used in the evaluation of in-group changes before and after the application, and the significance level was accepted as 0.05 in statistical comparisons. Effect sizes (ES) of mean differences were determined using Cohen's d-test and effect sizes were categorized according to Hopkins scale: 0.0-0.2 = insignificant; 0.2-0.6 = small; 0.6-1.2 moderate; 1.2-2.0 = large; > 2.0 = very large (Hopkins et al., 2009).

FINDINGS

In this part of the study, the findings of the research examining the effect of myofascial relaxation technique applied with foam rollers on jumping, flexibility and short distance swimming performance are presented.

Table 3. Paired Sample t-Test Results Regarding the Performance Abilities of the Study Group

Parameters	Group	n	x̄± Sd.	t	p	ES
15- m Swimming (sec)	DS	12	7.87±1.13	2.307	**.041***	0.29
	DS+SMR	12	7.54±1.09			
Countermovement Jump (CMJ) (cm)	DS	12	33.49±3.80	-.306	.765	-
	DS+SMR	12	33.71±3.91			
Squat Jump (SJ) (cm)	DS	12	31.39±2.85	-2.541	**.027***	0.34
	DS+SMR	12	32.35±2.72			
Flexibility (cm)	DS	12	27.37±5.61	-2.491	**.030***	0.28
	DS+SMR	12	28.83±4.62			

*P<0,05, DS: Dynamic Stretching, SMR:Self-Myofascial Release, sec: second, cm:centimetres ES: Effect Size

Performance values of different protocols are presented in Table 3. When Table 3 is analyzed, it is seen that there is no statistical difference between the countermovement jump measurement values of the group in which myofascial release technique was applied in addition to dynamic exercises (p>0.05), while there is a statistically significant difference between the 15 m swimming (t: 2.307, p: .041), squat jump (t: -2.541, p: .027) and flexibility (t: -2.491, p: .030) measurement values (p<0.05). 15 metre swim (Cohen's d=0.29), Squat jump (Cohen's d=0.34) and Flexibility (Cohen's d=0.28) values, the significant difference effect size was found to be at a small level.

DISCUSSION

This study was conducted to determine the effect of myofascial release technique applied with foam rollers on swimmers' jumping, flexibility and short distance swimming performance parameters. Myofascial release is a form of manual soft tissue therapy used to treat somatic dysfunction leading to pain and limitation of movement. The self-myofascial release (SMR) technique uses a stick (Mikesky et al., 2002), foam roller (Macdonald et al., 2013) or roller massager (Sullivan et al., 2013) to massage one's own muscles. To demonstrate the effect of SMR, studies have focussed on how foam rolling affects range of motion (ROM), muscle soreness and lower limb biomechanical performance. Thus, the first effect is associated with recovery, while the second effect is associated with performance (Laffaye, 2019).

When the research findings were analysed, it was determined that there was no statistical difference between the countermovement jump measurement values with myofascial release technique, but there was a statistically significant difference between the 15 m swimming, squat jump and flexibility measurement values. According to these findings, it was determined that myofascial release technique using foam rollers in combination with dynamic stretching improved 15 m swimming performance and increased squat jump and flexibility values.

Flexibility can be defined as the ability of body tissues to reach full range of motion (ROM) without any injury to joints or groups. Range of motion is regulated by the proper extension of all soft tissues surrounding the joints (Heyward, & Gibson, 2014; Thacker et al., 2004). The main role of flexibility is to reduce the risk of injury. Appropriate muscle flexibility increases the ability to move joints through the highest possible range of motion. Furthermore, flexibility exercises or techniques used before a main training activity can improve physical performance, especially muscle strength. This is achieved by increasing the utilisation of elastic strain energy during the performance of movements (Shivalingaiah et al., 2016). One technique

whose aim is to increase the flexibility of soft tissues is myofascial release (MFR). Myofascial release is based on manual therapy and helps to reduce restrictions or adhesions within the fascial tissue layers (Barnes, 1997). Laffaye et al. (2019) examined the effect of self-myofascial release with foam rolling on recovery after high-intensity intermittent exercise and found that self-myofascial release reduced delayed onset muscle soreness (DOMS) by 50%, increased hip range of motion by approximately 4.2%, and may be useful for reducing DOMS after high-intensity interval training. Le Gal et al. (2016) examined the effects of self-myofascial release in adolescent tennis players and found that self-myofascial release of the infraspinatus and pectoralis muscles 3 times a week for 5 weeks improved the dominant glenohumeral internal rotation range of motion in tennis players and can be used as a strategy to maintain the mobility of this joint. Pożarowszczyk et al. (2018) found that the use of foam rollers (8-10 repetitions to the back group leg, back and neck muscles, total 15 min) acutely increased trunk flexibility (fingertip contact distance test-metric measurement) in 12 swimmers aged 14 years but did not change muscle tone and stiffness in the muscles where the application was performed. Škarabot et al. (2015) examined the effects of static stretching and foam roller exercise models on ankle range of motion in 11 trained adolescent swimmers. The researchers found that each combination of static stretching, foam roller and foam roller static stretching applied to plantar flexor muscle groups (30 seconds x 3 sets of 10 seconds rest between sets) was effective in the acute increase of passive ankle dorsiflexion range of motion. Mazzei (2019) reported that the use of vibrating and non-vibrating foam rollers (30sec x 3set to calf muscles, 15sec rest between sets, metronome 30bpm, dominant leg) increased the flexibility of plantar flexor muscle groups in female university swimmers (18-23 years).When literature studies are examined, there are many studies similar to our research findings showing that myofascial release technique acutely increases flexibility (MacDonald et al, 2013; Sullivan et al, 2013, Roylance et al, 2013, Jay et al, 2014, Halperin et al, 2014, Bradbury-Squires et al, 2015, Peacock et al, 2014 , Grieve et al, 2015). In this context, in our study, it was observed that the group in which myofascial relaxation was applied showed more improvement in flexibility values compared to the group that was not applied. The results obtained are consistent with the aforementioned research and point to the positive effect of the technique on muscle flexibility.

When the 15 m swimming performances of the participants were examined, it was determined that the 15 m swimming degrees of the group with myofascial application were better than the group without myofascial application. In studies investigating the effects of myofascial relaxation method on the vascular system, it was found that the amount of nitric oxide in the blood increased after the application of pressure by the baroreceptors in the vessel through the central nervous system, and as a result of this increase, the vessel wall allows 256 times more blood flow to pass through the vessels based on Poiseuille's law (Hall et al., 2011; Okamoto et al., 2014). In one of the studies supporting our study, it was reported that ankle internal rotation range of motion (ROM) was highly correlated with maximal performance in frog swimming style (Kippenhan, 2002). In the other study, the combination of knee external rotation and ankle supination flexibility improved 100 m breaststroke results by 24.4% (Jagomägi & Jürimäe, 2005). In the study of Ekmekci (2020), which examined the effect of foam roller application on flexibility and swimming performance values in swimming branch, it was stated that myofascial relaxation method made significant positive contributions to the performances of swimmers compared to dynamic warm-up from classical warm-up methods. Between the pre-test and post-test values of the experimental group, 3,88% in 50 m freestyle, 7,3% in 50 m backstroke, 14,81% in 50 m frog style, 8,90% in 50 m butterfly style and 17,36% in sit - lie flexibility test were found to improve positively. Our results coincide with the findings in the literature. It is thought that with the positive increase in flexibility values, the range of motion of the joints improves positively and this contributes to the swimmers' better reaching and better application of branch-specific techniques. As a matter of fact, this difference arising from myofascial release technique contributed to the 15 m swimming degrees

of the myofascial application group to be at better levels compared to the non-myofascial application group. Therefore, it can be said that myofascial release method improved the performance of the swimmers.

One of the best physical performance indicators is the vertical jump, which directly corresponds to strength and power (Maulder & Cronin, 2005; Morin & Samozino, 2018). Also, Civan, Karhan & Civan (2022), athletes' parameters like vertical jump, anaerobic power, and explosive strength can benefit from an 8-week plyometric training program that is regularly planned and structured. These parameters are reliable predictors of performance in many sports. Richman et al. (2019) showed that there was an improvement in squat jump (SJ) performance parameters after myofascial release application. Peacock et al. (2014) examined the effects of self-myofascial relaxation techniques on performance and found that the programme combined with myofascial relaxation techniques improved jump performance compared to dynamic warm-up. Dynamic stretching + vibrating foam roller application (28 Hz, 20 s × 1 set on bilateral rotator cuff, quadriceps femoris, hamstrings, gastrocnemius, and back muscles) significantly increased active vertical jump height, agility, and knee extension ROM and decreased quadriceps muscle stiffness in university badminton athletes (Lin et al., 2020). In another study, it was reported that foam roller exercises significantly increased depth jumps and hip strength in college volleyball players (Tsai et al., 2021). In another study in which myofascial relaxation techniques were examined, it was stated that foam roller application increased jumping and flexibility performances (Sağıroglu, 2017). In a study similar to our research results conducted by Yıldız et al. (2018), it was determined that flexibility values increased significantly more after vibrating foam roller application (26.40±4.38cm vs. 23.00±3.91 cm, $p < 0.05$). The results of the literature and our research findings support each other. When the literature studies and our study were compared, it was determined that there were similar results as well as results that were not similar to our study. MacDonald et al. (2014) investigated the effect of foam rolling of the thigh and hip muscles on vertical jump after 0, 24, 48 and 72 hours and found that vertical jump did not acutely increase after FR intervention. It can be stated that the reason for these differences may be due to variables such as the content of the exercise model applied with foam roller (frequency, duration, vibration speed, muscles to be applied and hardness/softness of the materials to be used). However, the lack of an optimal protocol for foam roller exercise models and the selection of participants (students, recreationally active adults, elite athletes, and child athletes) may be another important factor in the differences between the results of the studies. At the same time, it is possible that the expected performance improvement in range of motion and performance kinematic components may not have been achieved due to the inability to apply sufficient and equal pressure on the muscle during foam roller exercises and the difficulty in standardizing the pressure during the application.

Conclusion

In conclusion, acute warm-up with myofascial release in addition to dynamic exercises improved squat jump, flexibility and swimming performance test results compared to acute dynamic warm-up without myofascial release. These findings underscore potential of integrating myofascial release techniques with foam rollers into swimmers' training regimens. Not only does this approach enhance specific performance parameters like squat jump and flexibility, but it also offers broader implications for the athletic community, emphasizing the importance of muscle release and flexibility in achieving peak performance. Therefore, incorporating foam rolling into dynamic warm-up may be a useful method to improve physical performance and can be considered when implementing efficient training routines.

Limitations

Future studies that will determine the effects of different myofascial relaxation types and durations on different sports performance parameters of different sports types will provide important contributions to sports performance. At the same time, future research may investigate the long-term effects of such techniques in more depth and explore their effectiveness in different athletic disciplines.

Recommendations

The fact that male swimmers participated in this study can be considered as a limitation. Therefore, future studies should include evaluations that allow comparison of the effect of myofascial release technique on the performance of different groups. In addition, since our research was designed to reveal acute effects, it cannot be generalized for chronic effects. With this approach, the chronic effects of foam roller protocols on land and water performance can be examined in future studies with research models covering a long period of time.

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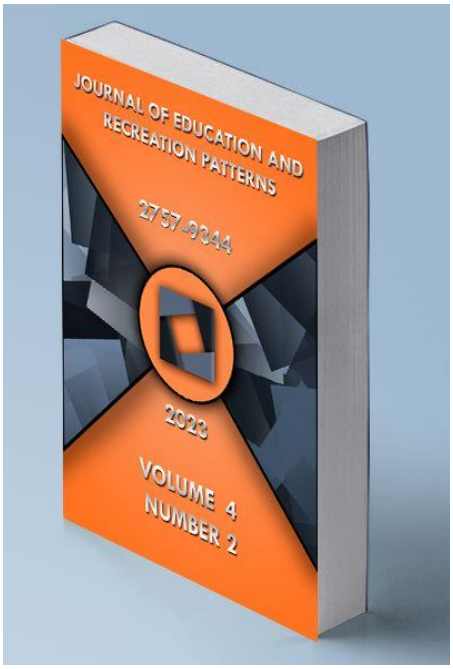
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Samet SİTTİ[1], Yaşar KÖROĞLU[2]

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[1] Samet Sitti, Siirt University Faculty of Sport Sciences, samet_sitti@hotmail.com,
https://orcid.org/0000-0002-8014-915X
[2] Yaşar Köroğlu, Sivas University Faculty of Sport Sciences, korogluyasar38@gmail.com,
https://orcid.org/0000-0003-4662-3353

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The Effect of Plyometric Training on Speed, Agility and Balance Performance of Adolescent Volleyball Players

Samet SİTTİ[1], Yaşar KÖROĞLU[2]

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ABSTRACT

It is aimed in this study to analyze the effect of plyometric trainings on the speed, agility and balance performance of adolescent volleyball players. The sample of the study includes 15 female licensed players playing in the leagues established by the Turkish Volleyball Federation. The average age of the participants was determined as 16,33±1,17, average height as 167,53±,08 cm, average body weight as 53,67±6,11 kg, average body mass index as 19,11±1,64 kg/m^2 and average training age as 4,00 ± ,092 years. The group participated in the research was applied plyometric training method 3 days a week for 6 weeks, a total of 18 days. The performance data of the participants were obtained through flamingo balance test, 30 m sprint test and 10x5 shuttle run test. The normality of the data was analyzed by Shapiro-Wilk Test and it was seen that the data were revealed a normal distribution. Pretest and posttest measurements of within group were calculated by using Paired Sample T Test and the significance level was accepted as 0.05. The study was organized according to the pre-test and post-test results. As a result of the study, after the 6-week plyometric training program, it was determined that there was no significant difference in the mean values of the height, body weight, body mass index, flamingo balance test and 30 m sprint test ($p>0,05$). It was found that there was a statistically significant difference in the mean values of the 10x5 shuttle run test in the comparison of the pretest and posttest results of the research group ($p<0,01$). Consequently, we can state that plyometric exercises to be applied in the trainings of adolescent volleyball players will contribute the agility performance of the players in a positive way. The fact that trainers include plyometric exercises in the certain periods of the trainings will contribute to the increase of the performance of the athletes. It is recommended that plyometric exercises to be applied within a determined program and appropriate for the age groups of the athletes, especially in branches that require anaerobic performance.

Keywords: Adolescent, Plyometric Training, Volleyball Players

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INTRODUCTION

An athlete aims to continue his/her performance for a long time achieving successes in the sport branch s/he plays. This goal can be achieved under the light of science and through appropriate training (Hacıcaferoğlu et. al, 2017). If the physical characteristics of an athlete are not suitable for the sport being played, then it is difficult to achieve the desired performance no matter how much training s/he does. When physical structure and psychomotor skills are combined, the desired performance will emerge. Genotypes, age, ethnic structure, the sport branch performed, diet and gender can affect the physical characteristics (Yaprak and Durgun, 2009). In addition to improving the physical and physiological performance of training athletes, it also contributes positively to the development of their psychosocial characteristics. (Hacıseferoğlu & Güner, 2013).

Although volleyball is played in our country (Türkiye), it is also widely played. It has become a part of life by attracting attention of many young people especially through schools and clubs. It contributes the increase in the communication between individuals as well as creating fun and group dynamic and bringing physical and educational values besides it provides individuals to be healthy (Hacicaferoglu, 2022). It is seen that the performance of athletes who have the physical characteristics of the sports branch they practice increases faster.

Together with these characteristics, intense and appropriate training systems and a perfect technique increases the level of performance (Sevim, 2010). It is difficult to achieve the desired performance if an athlete is not suitable physically (Hacıcaferoğlu et. al, 2017).

Jumping skill is important for volleyball. Jumping skill is continuously used during hits, blocks and jump serve in the game. Athletes should jump to the highest point for success and a good performance. Jumping skill should produce strength in the quickest way in a very short time (Anıl, et al.,2001; Apaydın & Kaya, 2022). The purpose of jumping in volleyball is to reach the highest point in the shortest and fastest way. Jumping can be performed by one or both feet (Brittenham, 1994).

Plyometric training is one of the muscles strengthening exercises that individuals perform using their own body weight. It is easily performed by body weight without the necessity of any other weight (Çelenk & Yıldıran, 2000; Doğru, 2019). Plyometric training is the training type that is performed with lower and upper limbs with the help of one's own body weight and the equipment such as medicine ball and includes various jumping exercises (Chu, 1994). Plyometric training is more effective in sport branches requiring quicker and more instant strength movement (volleyball, football, athletics and basketball). As in many training types, plyometric training contributes the increase in the muscle strength and is easily applicable in the sport branches requiring muscle strength (Bayraktar, 2006). It is stated in a different definition that plyometric training is the whole of movements including the combination of explosive strength and movement speed to increase and retain the performances of athletes (Chu, 2003). In fact, through plyometric training, it is provided to improve and retain rapid strength, vertical jumping, speed, anaerobic power and maximal power, which athletes need (Adıgüzel, 2017; Doğru, 2020). Fast and quick jumps in plyometric training significantly increase the development of explosive power and agility (Ateşoğlu & Hazar, 2005).

The plyometric training program is implemented with different variations. For example, where we are, it can be applied using various materials such as side-to-side and upward jumps, bounces, crates and bosu balls. Studies reveal that there is a significant relationship between strength and jumping performance (Charoenpanicha et.al., 2013). During a five-set volleyball match, each athlete makes an average of 250 jumps (Martinez, 2017). Therefore, jumping performance is one of the most important factors that determine performance in volleyball.

In this context, the aim of our study is to investigate the effects of plyometric training applied 3 days a week on the basic skills, speed, balance, and agility of adolescent volleyball players between the ages of 14-17. The originality and uniqueness of our study in this age group, where physical development and performance will increase to the highest level and the development of athletes will gain positive momentum. increases its importance.

METHOD

Research Model

This study was conducted according to the pre-test post-test design, which is one of the quantitative research methods, since it was aimed to determine the effects of plyometric training applied 3 days a week on the basic skills, speed, balance and agility of adolescent volleyball players aged 14-17 years. The researched was designed as one group. Two measurements were taken before and after the training. Measurements were taken again after the 6-week training.

Research Group

In the study, the average age of those studying at a sports high school in Siirt province was 16.33±1.17, their height average was 167.53±.08, their body weight average was 53.67±6.11, their body mass index average was 19.11±1.64 and 15 female volleyball players with an average training age of 4.00 ±.092 years participated. Plyometric training method was applied to our study group 3 days a week for 6 weeks, along with weekly volleyball training. Informed Voluntary Consent Forms were obtained from the athletes. Necessary permissions were received from the families of the athletes and school management.

Table 1. The Descriptive Statistics of the Participants

Variable	n	min	max	mean± sd.
Age (Year)	15	14	17	16,33±1,17
Height (cm)	15	153	180	167,53±,08
Body Weight (kg)	15	42	62	53,67±6,11
BMI (kg/m2)	15	16,79	22,41	19,11±1,64
Training age	15	3	6	4,00 ±,092

Table 2 presents the descriptive statistics of the participants, providing a comprehensive overview of the demographic and physical characteristics of the 15 female volleyball players aged 14-17 years who participated in the study. The cohort exhibited an age spectrum ranging from 14 to 17 years, with a central tendency (mean) age of 16.33 years and a standard deviation (SD) of 1.17 years. This suggests a relatively uniform age distribution amongst the participants.

Participants demonstrated a mean stature of 167.53 cm. The minimal standard deviation of 0.08 cm indicates a notably homogeneous height distribution amongst the participants, spanning from a minimum of 153 cm to a maximum of 180 cm.

The body weight of the participants was distributed with a mean value of 53.67 kg and a standard deviation of 6.11 kg, reflecting a moderate variability amongst the players, with individual weights ranging from 42 kg to 62 kg.

The participants' Body Mass Index (BMI) was observed to be within a healthy range, with a mean value of 19.11 kg/m2 and a standard deviation of 1.64 kg/m2. The BMI values spanned from 16.79 kg/m2 to 22.41 kg/m2, indicating a moderate dispersion around the mean.

The training age, indicative of the duration of structured training undertaken by the participants, was averaged at 4.00 years with a standard deviation of 0.92 years. The range of training age amongst the participants was demarcated between 3 and 6 years.

Data Collection Tools

Height Measurement: The heights of the subjects included in the study were measured by a stadiometer.

Body Weight Measurement*:* Body weight measurements of the subjects were taken by an electronic scale with a precision of 0.1. Subjects were measured as they were on a vertical position, hands were at two sides and the weight distributed to both feet equally and the values were recorded as kg.

30 m Sprint Test: The 30-meter running durations of the athletes were measured by a photocell. Three measurements were taken, and the best result was recorded (Rakovic et. al, 2018).

10x5 m Shuttle Run Agility Test: The test is conducted to measure the running speed of an individual. Cones or lines are prepared with 5-meter intervals. The subject gets prepared behind the scratch line. With the instruction of start, the subject runs as fast as possible as both feet pass the line, passes the opposite line and returns back to the start point. S/he repeats 10 times until completing a total of 50 meters and the running duration is recorded (Özer, 2013).

Flamingo Balance Test: Students tried to keep balance on the beam for 1 minute. The balance foot was on the beam and the other foot was held by hand towards the hip. When students lost their balance or fall off the beam, the time was stopped. Total balance time obtained in 1 minute was recorded as the score (Jakobsen et. al., 2011).

Table 2. Plyometric Training Program

Plyometric training method was applied to our study group 3 days a week for 6 weeks, along with weekly volleyball training. The training program is shown in the table below.

Vertical jump	10x3	Jump rope	10x3
Side-to-side ankle hops	10x3	Standing long jump	8x3
Kangaroo hops	10x3	Lateral hop over hurdle	12x3
Shuttle with medicine ball	8x3	Zigzag drill	12x3
Stairs jump down	8x3	Hurdle hops with change of direction sprint	10x3
Stairs forward hop one leg	10x3	Squat jump	8x3
Stairs squat jump	10x3	Lateral jump to the side over hurdle	8x3
Two-foot forward jump	10x3		

Statistical Analysis

The data were analyzed by the package program SPSS 21. The normality of the data was tested by Shapiro-Wilk test and it was seen that the data were distributed normally. Normality coefficient is in the range of -2,+2 (George & Mallery, 2010).The within group values were calculated by using Paired Sample t-Test, and the significance level was taken as 0.05

FINDINGS

This section presents the measured findings of various variables to evaluate the physical performance of the participants in the study.

Table 3. The Comparison of the Physical Performances of the Participants Through Paired Simple t-Test

Variable	Group	n	min	max	mean± sd.	t	p
Body Weight (kg)	Pre-test	15	42	62	53,67 ± 6,11	1,702	,111
	Post-test	15	45	58	52,47 ± 4,40		
BMI (kg/m2)	Pre-test	15	16,79	22,41	19,11 ± 1,64	1,615	,129
	Post-test	15	16,81	20,94	18,71 ± 1,27		
Balance (number)	Pre-test	15	1	5	2,80 ± 1,14	1,871	,082
	Post-test	15	1	4	2,40 ± 1,12		
10x5 Shuttle run test (sec)	Pre-test	15	14,47	18,80	17,03 ± 1,36	4,667	**,001***
	Post-test	15	13,87	20,02	15,90 ± 1,59		
30 m Sprint Test	Pre-test	15	4,26	5,37	4,71 ± ,028	,896	,385
	Post-test	15	4,18	5,32	4,65 ± ,368		

p<0,01, p< 0,05

Table 3 delineates a meticulous comparative analysis of the physical performances of the participants, employing a Paired Sample t-Test to discern statistical significance in the observed variations from pre-test to post-test across various physical metrics. The participants exhibited a mean body weight of 53.67±6.1153.67±6.11 kg in the pre-test, which slightly decreased to 52.47±4.4052.47±4.40 kg in the post-test. The t-value of 1.702 and p-value of 0.111 suggest that this reduction was not statistically significant.

A subtle decrement in BMI was observed from the pre-test mean of 19.11±1.6419.11±1.64 kg/m2 to the post-test mean of 18.71±1.2718.71±1.27 kg/m2. However, the t-value of 1.615 and p-value of 0.129 indicate that this diminution does not attain statistical significance. Balance, quantified as a number, demonstrated a mean value of 2.80±1.142.80±1.14 in the pre-test, which marginally reduced to 2.40±1.122.40±1.12 in the post-test. The statistical analysis yielded a t-value of 1.871 and a p-value of 0.082, thereby not substantiating a statistically significant difference.

A notable enhancement in the 10x5 shuttle run test was observed, with the mean time reducing from 17.03±1.3617.03±1.36 seconds in the pre-test to 15.90±1.5915.90±1.59 seconds in the post-test. This improvement was substantiated as statistically significant with a t-value of 4.667 and a p-value of 0.001. The 30 m sprint test times exhibited a slight improvement from a pre-test mean of 4.71±0.284.71±0.28 seconds to a post-test mean of 4.65±0.3684.65±0.368 seconds. However, with a t-value of 0.896 and a p-value of 0.385, this improvement was not statistically significant.

In summation, Table 3 provides a meticulous comparative analysis of the physical performance metrics of the participants, revealing a statistically significant improvement in the 10x5 shuttle run test post-intervention, while changes in body weight, BMI, balance, and 30 m sprint test did not attain statistical significance.

DISCUSSION

The primary aim of this study was to investigate the effects of plyometric training on anthropometric characteristics, balance, speed, and agility in adolescent volleyball players studying at a sports high school. Plyometric training, as described by Wang and Zhang (2016), enables muscles to stretch rapidly and dynamically, leading to concentric contraction. Furthermore, numerous studies, including Yarayan and Müniroğlu (2020), have highlighted its contributions to enhancing strength, jump performance, agility, and sprint performance in athletes.

Our findings, derived from a rigorous comparative analysis using the Paired Sample T-Test, revealed that participants exhibited an average body weight of 53.67±6.11 kg at the pre-test, which decreased to 52.47±4.40 kg at the post-test. However, with a t-value of 1.702 and a p-value of 0.111, this decrease was not statistically significant.

While our study did not observe a significant change in body weight, the broader literature supports the benefits of plyometric training. For instance, a systematic review found that plyometric training appears to enhance vertical jump performance, strength, horizontal jump performance, flexibility, and agility/speed in volleyball players (Silva et al., 2019). Another study emphasized that aquatic plyometric training can effectively improve speed, endurance, and explosive power in volleyball players (Kamalakkannan, Azeem, & Arumugam, 2011).

Moreover, the combination of agility and plyometric training, as well as balance and plyometric training, has been shown to result in significant improvements in various measures for young soccer players (Makhlouf et al., 2018). This suggests that integrating plyometric training with other training modalities can further enhance its benefits. When the studies on this field are viewed, we can say that there is an increase in the body weights after the training but this increase does not create a difference (Kaya & Öztürk, 2023). In the study Öztin et. al. conducted, it was stated that there was no significant difference in the experimental and control groups (Öztin, et. al, 2003). Our study is similar to the others conducted in this field.

In the context of volleyball, it's noteworthy that specific plyometric, strength, and change of direction (COD) training over a 7-week period produced medium to large improvements in physical fitness in high-school basketball players (Sáez De Villarreal et al., 2021). This underscores the potential of plyometric training in enhancing performance metrics crucial for volleyball players.

The secondary objective of our study was to assess the impact of plyometric training on the Body Mass Index (BMI) of adolescent volleyball players. Our results indicated a slight reduction in BMI from a pretest mean of 19.11±1.64 kg/m^2 to a posttest mean of 18.71±1.27 kg/m^2. However, with a t-value of 1.615 and a p-value of 0.129, this reduction did not achieve statistical significance.

While our study observed a non-significant change in BMI, the broader literature provides insights into the effects of plyometric training on various physical attributes in athletes. For instance, a systematic review highlighted that plyometric training seems to enhance vertical jump performance, strength, horizontal jump performance, flexibility, and agility/speed in volleyball players (Silva et al., 2019). Another study emphasized the positive effects of plyometric training on upper- and lower-body explosive strength in adolescent male basketball players (Santos & Janeira, 2011). Furthermore, research has shown that specific plyometric, strength, and change of direction (COD) training over a 7-week period produced medium to large improvements in physical fitness in high-school basketball players (Sáez De Villarreal et al., 2021). This suggests that plyometric training can have a broad range of benefits for athletes, even if the impact on BMI is subtle.

In the context of volleyball, it's noteworthy that athletic volleyball training provides a more efficient stimulus for muscle compared to tendon adaptation, which results in an increased demand placed upon the tendon by the working muscle in adolescent volleyball athletes (Mersmann et al., 2017). This could potentially explain the subtle changes in BMI observed in our study.

Our study's third finding pertained to the evaluation of balance in adolescent volleyball players post plyometric training. The results showcased a slight decrement in balance, quantified numerically, from a pretest mean of 2.80±1.14 to a posttest mean of 2.40±1.12. However, the statistical analysis, with a t-value of 1.871 and a p-value of 0.082, did not confirm this reduction as statistically significant.

While our study observed a non-significant change in balance, the broader literature provides insights into the effects of plyometric training on balance and other physical attributes in athletes. For instance, a study by Ringhof et al. (2018) emphasized the importance of selecting appropriate balance exercises to achieve rapid and desired training outcomes, especially in team sports interventions. Another study by Pau, Loi, and Pezzotta (2012) explored the potential benefits of balance training (BT) on young athletes, suggesting that while BT might have a beneficial effect, further investigations are required to clarify its actual impact on balance performance in comparison to regular volleyball training. In the context of volleyball, balance is a critical component, especially when considering the dynamic movements and jumps involved in the sport. A study by Mersmann et al. (2017) concluded that athletic volleyball training provides a more efficient stimulus for muscle compared to tendon adaptation, which could influence balance performance in adolescent volleyball athletes.

Moreover, the combination of plyometric training with balance exercises has been shown to yield significant improvements in various measures for athletes. A study by Bouteraa et al. (2020) highlighted that the addition of balance and plyometric training to regular in-season basketball training enhanced balance, agility, and other physical attributes in female adolescent basketball players. Okludil and Serin stated that the balance performance increased after the study they conducted (Okludil & Serin, 2022). Dilek et. al. reported in their study that there was a statistically significant difference in the balance performance after the 8-week training (Dilber et. al, 2016). In the study conducted on basketball players, it was stated that the balance performance increased in a positive way (Nugraha et. al, 2022). We can state that plyometric training contributes the balance performance of the athletes positively. The fact that volleyball training does not includes balance exercises may be the reason of that the balance values in our study were not different. Our research is not similar to the other studies conducted in this field.

The fourth finding of our study delved into the effects of plyometric training on the 10x5 shuttle run and 30 m sprint test performances in adolescent volleyball players. A significant improvement was observed in the 10x5 shuttle run test, with the meantime reducing notably from the pretest to the posttest. Conversely, while the 30 m sprint test times showed a slight improvement, this change was not statistically significant. Our results align with the broader literature on the effects of plyometric training on athletic performance. A systematic review by Silva et al. (2019) indicated that plyometric training seems to enhance agility/speed, among other attributes, in volleyball players. This supports our observed enhancement in the 10x5 shuttle run test. Additionally, Lockie et al. (2014) emphasized that sprint and plyometrics training can improve acceleration, primarily through increased step length and a greater emphasis on vertical force production, which might explain the observed improvements in our study.

Furthermore, a study by Houghton et al. (2013) concluded that plyometric training had possible benefits on intermittent shuttle running times and improved jump performance. This is consistent with our findings of improved shuttle run times post plyometric training. On the

other hand, the slight improvement in the 30 m sprint test times without statistical significance in our study might be attributed to various factors. As highlighted by Turner et al. (2015), plyometric exercise can enhance sprint acceleration performance in athletes during pre-competition practices, provided there is adequate recovery between activities. The study conducted by Civan, Karhan, and Civan (2022) investigated the effects of an 8-week plyometric training program. Their results indicated that, although there was no significant difference observed between the different plyometric training groups, the experimental group that underwent the 8-week plyometric training exhibited a positive enhancement in both vertical jump and anaerobic power parameters. It is stated that 6-week plyometric training has increased the speed performances of the athletes (Kaplan, 2021). In the study conducted by Taşkan, it is stated that plyometric training had a positive contribution to the speed performances of the athletes (Taşkan, 2020). It is indicated that plyometric training increased the speed performance in the athletes between the age ranges of 11-12 (Akçınar, 2014). When the studies conducted on this field are examined, it is seen that there are no similar results to our study. It is thought that this situation may have resulted from the application of different training programs to different age groups and the short weekly training duration. In our findings, it is seen that the 6-week plyometric training program contributed the agility performances of the athletes. It was reported that 4-week plyometric training positively affected the agility values of the futsal players (Arı, et. al, 2021).

Güzel stated that the study conducted on the athletes at the age range of 12-14 contributed the agility values of the athletes (Güzel, 2020). In the study conducted by Atacan, it was reported that there was a statistically significant difference in the agility values of the experimental group when compared to the control group (Atacan, 2010). Improvement of the agility performance does not increase only through the improvement of a single skill, but also the improvement of strength, speed, balance and coordination skills together. Our study is similar to the other studies conducted in this field. In the context of volleyball, where agility, speed, and quick directional changes are paramount, plyometric training can be a valuable tool.

Conclusion

The comprehensive investigation of plyometric training's effects on adolescent volleyball players at a sports high school has provided valuable insights into its potential benefits and limitations. Our study's findings, in conjunction with the broader literature, underscore the multifaceted benefits of plyometric training, particularly in enhancing agility, speed, jump performance, and potentially balance.

While certain metrics, such as body weight and BMI, did not exhibit statistically significant changes post-training, other performance measures, notably the 10x5 shuttle run, demonstrated marked improvements. These results highlight the nuanced effects of plyometric training, suggesting that while it may not significantly alter anthropometric characteristics, it can substantially enhance athletic performance attributes crucial for volleyball players.

Our study's alignment and occasional divergence from existing literature emphasize the importance of individualized training regimens, considering factors like age, training duration, and specific athletic requirements. For instance, the non-significant changes in balance and sprint times in our study, despite being contrary to some literature, underscore the need for tailored plyometric training programs, potentially integrated with other training modalities for optimal results. Furthermore, the consistent emphasis across various studies on the benefits of plyometric training, whether standalone or combined with other training forms, indicates its indispensable role in athletic training, especially for sports like volleyball that demand agility, speed, and power.

In conclusion, while plyometric training offers a plethora of benefits to adolescent volleyball players, its effects can vary based on the training's specifics and the athletes'

individual characteristics. Future research should delve deeper into optimizing plyometric training regimens for volleyball players, ensuring a holistic improvement across all desired metrics. This study serves as a foundation for such endeavors, emphasizing the importance of evidence-based training approaches in enhancing athletic performance.

Limitations

Our study was conducted on a specific group of adolescent volleyball players studying at a sports high school. The results might not be generalizable to volleyball players of different age groups, skill levels, or those from non-sporting schools. The plyometric training program spanned a duration of six weeks. Longer or shorter training durations might yield different results. The study did not account for participants' dietary habits, sleep patterns, or other lifestyle factors, which could influence the outcomes of plyometric training. Factors such as participants' mental health, stress levels, and external physical activities outside of the study were not controlled for, which might have influenced the results. The uniform intensity of plyometric training might not cater to the individual needs of each participant. Personalized training intensities could yield different outcomes.

Recommendations

Future studies should consider a more diverse sample, encompassing different age groups, skill levels, and backgrounds to enhance the generalizability of the findings.

Investigating the effects of plyometric training over longer durations, such as several months, could provide insights into its long-term benefits and potential plateaus in performance improvements.

Incorporating tools to monitor participants' dietary habits, sleep patterns, and overall lifestyle can provide a more comprehensive understanding of plyometric training's effects.

Combining plyometric training with other training forms, such as strength training or balance exercises, might yield synergistic benefits.

Future research should explore the effects of individualized plyometric training programs tailored to each participant's needs and capabilities.

Implementing a feedback mechanism where participants can share their experiences, challenges, and suggestions during the training can provide qualitative insights to complement the quantitative data.

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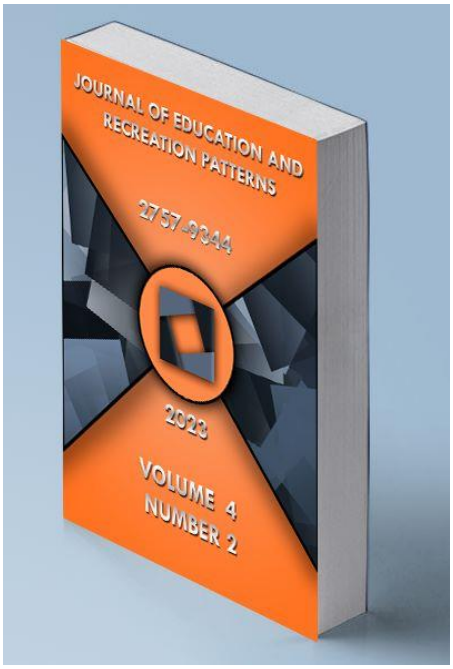
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The Attitudes of 2nd and 3rd Grade Primary School Students towards Life studies Course and Their Levels of School Happiness

Betül AKYÜREK TAY[1]

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[1] Betül Akyürek Tay, Kırşehir Yusuf Demir Science and Art Centre, betulakyurektay@gmail.com,
https://orcid.org/0000-0002-1803-7325

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The Attitudes of 2nd and 3rd Grade Primary School Students towards Life studies Course and Their Levels of School Happiness

Betül Akyürek Tay [1]

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ABSTRACT
Students' ability to internalize desired characteristics in life studies course is closely related to their readiness. The readiness is in turn linked to students' knowledge, abilities, interests, habits, attitudes and values. Considering attitudes, students learn more effectively and become more successful when they develop a positive attitude towards a course. Depending on that success, students are expected to be happy. In the present study, students' attitudes towards life studies course and their levels of school happiness are investigated using single survey, causal comparative and correlational survey models. The study sample consists of 948 students selected via stratified and random sampling from a population of students attending 2nd and 3rd grades of primary schools in Ankara. The results of the analyses performed with parametric tests demonstrate high levels of life studies course attitudes and school happiness among 2nd and 3rd grade primary school students. A moderate, positive and significant relationship was found between attitudes and school happiness, with attitude accounting for 15% of the total variance of happiness. However, attitudes and school happiness do not vary significantly according to gender, grade, parents' education and daily reading time.

Keywords: Attitude, Life Studies, School Happiness.

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INTRODUCTION

Life studies course can be considered as an important course that prepares children for life and provides information about life. Children at first receive informal education from their families and immediate environment and then maintain their education formally in schools. Preschool education constitutes the first stage of formal education and provides an important basis for children to acquire knowledge about life. Life studies course plays a central role in acquiring the knowledge of life during the primary school period. According to Binbaşıoğlu (2003), the main purpose of education is to contribute to children's successful and effective adaptation to their environment, and life studies course at the primary school level is the first course that constitutes the basic step in achieving this goal.

Education of children includes both natural and social life environments. Educating children in consideration of their needs in natural and social environment is important therefore. Children at primary school age have been taught with life studies course for a long time. Life studies course is described as "the first course of the citizenship education programme that attempts to provide children with the knowledge of life by taking into account the understanding of the child in order for the child to know and recognise themselves; the content of which is formed with social sciences, physical sciences, art, thought and values, and which provides the characteristics of being a good person, a national citizen and finally a world citizen in the globalising world, and which tries to provide children with the knowledge of life based on the concept of collective education" (Tay, 2017). In another way, life studies course is defined as the process of establishing a connection with natural and social reality based on proof and the vital knowledge obtained at the end of this process (Sönmez, 2005). The definitions makes it clear that the child is a special being and educational activities for children should be of a quality that will support their development in every aspect. In this context, life studies course has an important position as one of the pivot courses of primary school, and it is a course that contributes to children to recognise their own selves first and to become effective citizens with an expanding perspective then. The aim of life studies course is to help students acquire basic life skills and develop positive personal qualities (MoNE, 2018). In line with this aim, students are expected to grow up as individuals who are sensitive to the environment in which they live and to reflect the achievements in the programme to their lives by internalising them. The ability of students to acquire the desired behaviours, that is, to internalise the outcomes, is closely related to their readiness. Readiness to learn is linked to students' knowledge, abilities, interests, habits, attitudes and values. Pertinent learning experiences cannot be expected to occur in a teaching situation that does not take the mentioned elements into consideration (Taşdemir, 2000). One of those elements is attitude.

Notwithstanding the variety of definitions on the concept of attitude, which is of Latin origin and means "ready for action", it is generally accepted that attitudes are specific to the individual and provide integrity and consistency in thoughts, feelings and behaviours regarding an object (Tavşancıl, 2002). Research on attitudes reveal that students' attitudes towards a course and subject can determine how they approach the course, their level of knowledge, performance, desire to acquire knowledge and interest in that subject (Bloom, 1995). Students learn more effectively and achieve better when they are interested in and develop positive attitudes towards any subject or course (Erden & Akman, 1997; Fidan, 1996). They are expected to be happy depending on this success.

"Subjective well-being", which is called happiness in daily life, refers to the individual's evaluation of their life. This kind of evaluation takes place in both cognitive (life satisfaction judgements) and affective (pleasant or unpleasant emotional reactions) domains (Diener and Diener, 1995; Diener and Diener, 1996). Individuals with a high sense of subjective well-being evaluate their experiences in a more positive way, while unhappy ones focus on the annoying

dimensions of the events they experience (Diener, 1994). Previous research also reveal that happy individuals perceive, interpret and conclude events more positively than unhappy individuals (Lyubomırsky & Tucker, 1998). Individuals who have a positive sense of subjective well-being have higher life satisfaction as well (Suldo & Huebner, 2005). Also, the authors Twilley, Holland, and Morris (2022) emphasize the significant role of recreation professionals in fostering well-being among students on campus. They argue that by offering intentional and targeted outdoor recreation programs, these professionals can make a lasting positive impact on student well-being.

The feeling of happiness in children starts from early periods. Attitude is one of the most influential factors on children's development (Hong, Ra, & Jang, 2015; Bird & Markle, 2012), given that children begin to understand happiness (Honig & Brophy, 1996; Harter 1983; Lewis & Michalson, 1983). Furthermore, individuals' affective and cognitive developmental processes have a linear relationship with their happiness levels (Kantarcıoğlu, 1998).

This study aims to investigate the relationship between 2nd and 3rd grade students' attitudes towards life studies course and their levels of school happiness. Although previous studies conclude that positive attitude has a positive effect on happiness, there is no consensus on the direction of causal relationship between the two variables (Cuñado & Gracia, 2012; Huebner, Suldo, Valois, Darne & Zullig, 2004). The present study is expected to give an idea about the direction of that causal relationship. Besides the main question "Is there a significant relationship between 2nd and 3rd grade primary school students' attitudes towards life studies course and their level of school happiness?", the study seeks answers to the following sub-questions:

What are the attitudes of 2nd and 3rd grade primary school students towards life studies course?

Do the attitudes of primary school students towards life studies course vary significantly according to gender, class, parents' education level and daily book reading time?

To what level are the 2nd and 3rd grade primary school students happy at school?

Do primary school students' levels of school happiness vary significantly according to gender, grade, parents' level and daily book reading time?

METHOD

Research Model

This quantitative research was conducted by using single survey, causal comparative, and correlational survey models, which are among the general survey models that investigate the existence and/or degree of change between two or more variables (Karasar, 1998, p. 81). Single survey model was used to describe life studies course attitudes and school happiness, whereas causal comparative survey was used to find whether students' life studies course attitudes and school happiness change according to variables. Correlational survey model was employed to investigate the relationship between attitudes towards life studies course and levels of school happiness among primary school students.

Population and Sample of the Study

The present research has a study population. Study population, also called target population or accessible population (Akbulut, 2010), comes to the fore when it is not possible to reach the entire population because of its abstractness and largeness or when it is not possible to generalise the obtained results to the entire population in a healthy way. The population is therefore limited by the researcher according to a number of criteria in line with the objectives of the research and for certain reasons. In the present study, the sample consists of students

attending the 2nd and 3rd grades of primary schools in the 2021-2022 academic year studying in the central district of Yenimahalle, Ankara. The number of students attending the 2nd grade in Yenimahalle central district is 7706 and the number of students attending the 3rd grade is 7739.

In the first stage of sampling from the study population, primary schools were divided into three groups as high, middle and low in terms of socioeconomic level through stratified sampling. In the second stage, two schools were selected from each stratum by random sampling method, and data collection tools were distributed to 1080 students, 1020 of which were taken back and the data obtained were transferred to the SPSS programme. Finally, 72 students were eliminated on the grounds that sincere answers could not be obtained, and finally a total of 948 students constituted the sample of the study.

Data Collection Tools

The data of the study were obtained using the "Life studies Course Attitude Scale" developed by Oker and Tay (2020) and the "Happiness Scale at School for Primary School Students" developed by Gündoğan and Akar (2019).

Life Studies Course Attitude Scale: The Life studies Course Attitude Scale consists of 16 items and 3 factors. The scale was developed to determine the attitude levels of 2nd and 3rd grade primary school students. The factors were named as "negative attitudes towards life studies course", "positive attitudes towards life studies course content" and "positive attitudes towards life studies course" respectively. It is seen that the scale development stages suggested by DeVellis (2016) were taken into consideration in the preparation of the scale. According to the results of the exploratory factor analysis, the Cronbach Alpha internal consistency coefficient of the overall scale was .801, and the factors were .740, .729 and .663, respectively. According to the confirmatory factor analysis, the Cronbach Alpha internal consistency coefficient of the overall scale was .88. In the present study, Cronbach Alpha internal consistency coefficient was calculated as .89.

School Happiness Scale: The Happiness Scale at School for Primary School Students consists of 9 items and 2 factors. Exploratory factor analysis was performed to ensure the construct validity of the scale and it was found that the scale was collected in two dimensions with an eigenvalue greater than 1 and explained 48.65% of the total variance. The first dimension explained 32.98 % and the second dimension explained 15.67 % of the variance. The eigenvalue of the first factor was 2.97, while that of the second factor was 1.41. Since all 4 items in the first dimension were related to feeling good at school, this dimension was named "School happiness". Since the 5 items in the second dimension were based on not feeling good at school, this dimension was named "School Unhappiness". The calculated Cronbach Alpha internal consistency coefficient of the scale is 0.76. In this study, Cronbach's Alpha internal consistency coefficient was calculated as .78.

Statistical Analysis

Descriptive, causal and correlational analyses were used to interpret the data. Descriptive analyses included the determination of frequency, percentage and standard deviation values regarding the attitudes of 2nd and 3rd grade primary school students towards life studies course and their level of school happiness. Various parameters were examined to find whether the data were normally distributed or not and whether there was a significant difference between dependent and independent variables or not. Kolmogorov Smirnov values, Skewness-Kurtosis values, coefficients of variation, histogram graphs, Detrended Normal Q-Q Plot graphs, Normal Q-Q Plot graphs and Boxplot graphs were examined as the group size of each independent variable was over thirty (30) so as to understand whether or not the data

showed normal distribution in the analysis. After testing the normal distribution of the data, Independent Sample t-Test, One Sample t-Test, and 5-factor ANOVA tests were run for causal analyses. Pearson Correlation Test was conducted for correlational analysis as well.

FINDINGS

This section presents the findings and interpretations related to the attitudes of 2nd and 3rd grade primary school students towards life studies course and their level of school happiness, whether these levels change according to multiple variables and whether there is a significant relationship between these two levels.

Findings Related to the Sub-Question "What are the Attitudes of 2nd and 3rd Grade Primary School Students Towards Life Studies Course?"

In order to find whether the attitudes of 2nd and 3rd grade primary school students towards life studies course were significantly higher or not, the average of the scores they received from the "life studies course attitude scale" was subjected to a one-sample t-test vis-à-vis the expected mean. The expected mean is the value obtained by multiplying the number obtained by adding one to the Likert scale and dividing it by two by the number of items. Since the scale consisted of 16 items in triple Likert type ([3+1]/2*16), the expected mean was calculated as 32.

If the mean scores of the 2nd and 3rd grade primary school students are significantly higher than the expected mean, it can be interpreted that their attitude levels are high. If they are significantly lower than the expected mean, it can be interpreted that their attitude levels are low. If they do not differ significantly vis-à-vis the expected mean, it can be interpreted that their attitude levels are mediocre. Related data are presented in Table 1.

Table 1. Attitude Levels of 2nd and 3rd Grade Primary School Students towards Life Studies Course

N	$\overline{X}$	S	Expected Mean	df.	t	p
948	42.60	6.32	32	947	119.865	.000

There is a significant difference between the mean of the attitude scores of the 2nd and 3rd grade primary school students towards life studies course and the expected mean (t_{947}=119.865; p<.00). The significant difference is in favour of the mean of the attitude scores of the 2nd and 3rd grade students towards life studies course ($\bar{X}$=42.60), and the attitude level of the 2nd and 3rd grade students towards life studies course was accordingly found high.

Findings Related to the Sub-Question "Do the Attitudes of 2nd and 3rd Grade Primary School Students Towards Life Studies Course Vary Significantly according to Gender, Grade, Parents' Education Level and Daily Book Reading Time?"

The results of the five-factor ANOVA on whether or not the attitudes of 2nd and 3rd grade primary school students towards life studies course vary significantly according to gender, grade, parents' education level and daily book reading time are presented in Table 2.

Table 2. Do the Attitudes of Primary School Students towards Life Studies Course Vary Significantly according to Gender, Grade, Parents' Education Level and Daily Book Reading Time?

Source	Type III Sum of Squares	df.	Mean Square	F	p	Eta Squared
Corrected Model	8844.263[a]	215	41.136	1.040	.353	.234
Intercept	251035.907	1	251035.907	6345.287	.000	.897
Gender	80.736	1	80.736	2.041	.154	.003
Grade	70.691	1	70.691	1.787	.182	.002
Reading	314.608	4	78.652	1.988	.095	.011
Mother's Education	66.261	4	16.565	.419	.795	.002
Father's Education	161.010	4	40.253	1.017	.397	.006
Error	28959.808	732	39.563			
Total	1757958.000	948				
Corrected Total	37804.072	947				

a. R^2=.234 (Adjusted R Squared=.009)

The results of the five-factor ANOVA show that the attitude levels of 2nd and 3rd grade primary school students towards life studies course do not change according to their gender, grade, mother's education level, father's education level and reading hours. In other words, those factors do not have any effect on attitudes towards life studies.

Findings Related to the Sub-Question "To What Level are to 2nd and 3rd Grade Primary School Students are Happy at School?"

In order to determine whether or not the levels of school happiness of 2nd and 3rd grade primary school students are significantly higher, the mean scores of 2nd and 3rd grade students from the scale of school happiness were subjected to a one-sample t-test vis-a-vis the expected mean. Since the scale consists of 9 items in a triple Likert type ([3+1]/2*9), the expected mean was calculated as 18. The related data are presented in Table 3.

Table 3. Primary School 2nd and 3rd Grade Students' Level of School Happiness

N	$\overline{X}$	S	Expected Mean	df.	t	p
948	24.49	3.03	18	947	65.84	.000

Table 3 demonstrates a significant difference between the mean scores of happiness levels among 2nd and 3rd grade primary school students and the expected mean (t_{947}=65.84; p<.00). Since the mean scores of happiness levels among 2nd and 3rd grade students ($\bar{X}$ =24.49) are significantly higher than the expected mean, it can be said that their happiness levels are high. It can be concluded that the happiness levels of 2nd and 3rd grade primary school students are positively high.

Findings Related to the Sub-Question "Do Primary School Students' Levels of School Happiness Vary Significantly According to Gender, Grade, Parents' Education Level, And Daily Book Reading Time?

The results of the five-factor ANOVA on whether or not the levels of school happiness of 2nd and 3rd grade primary school students vary significantly according to gender, grade, parents' education level and daily book reading time are given in Table 4.

Table 4. Do Primary School Students' Levels of School Happiness Vary Significantly according to Gender, Grade, Parents' Education Level and Daily Book Reading Time?

Source	Type III Sum of Squares	df.	Mean Square	F	p	Eta Squared
Corrected Model	28.956[a]	215	.135	1.254	.017	.269
Intercept	977.688	1	977.688	9101.122	.000	.926
Gender	.177	1	.177	1.647	.200	.002
Grade	.180	1	.180	1.671	.197	.002
Reading	.330	4	.083	.768	.546	.004
Mother's education	.016	4	.004	.037	.997	.000
Father's education	.513	4	.128	1.193	.313	.006
Error	78.635	732	.107			
Total	7125.481	948				
Corrected Total	107.591	947				

a. R^2=.269 (Adjusted R Squared=.054)

The results of the five-factor ANOVA show that the school happiness levels of 2nd and 3rd grade primary school students do not change according to their gender, grade, mother's education status, father's education status and reading hours. In brief, these factors have no effect on the school happiness levels of 2nd and 3rd grade primary school students.

Findings Related to the Sub-Question "Is there a Relationship Between 2nd and 3rd Grade Primary School Students' Level of School Happiness and Their Attitudes Towards Life Studies Course?

The findings concerning the relationship between 2nd and 3rd grade primary school students' levels of school happiness and their attitudes towards life studies course are presented in Table 5.

Table 5. The Relationship between 2nd and 3rd Grades Primary School Students' Attitudes towards Life Studies Course and Their Level of School Happiness

		Attitude	Happiness
Attitude	Pearson Correlation	1	.386**
	p		.000
	N	948	948
Happiness	Pearson Correlation	.386**	1
	p	.000	
	N	948	948

Table 5 indicates a moderate, positive, and significant relationship between 2nd and 3rd grade primary school students' level of school happiness and their attitudes towards life studies course, with r= .386, p<.01. The coefficient of determination (r^2=.15) shows that attitude accounts for 15% of the total variance (variability) of happiness.

DISCUSSION & CONCLUSION

The research results indicate that attitudes of 2nd and 3rd grade primary school students towards life studies course are positively high, though their attitudes do not vary according to gender, grade, parents' education level and reading hours. When the literature is examined, it is seen that several studies attempted to understand the predictors of students' attitude levels (Baş, Dilber-Özer, 2021; Tertemiz, & Tay, 2021; Sarı, 2020; Oker, 2019; Zayimoğlu Öztürk & Coşkun, 2015). As a matter of fact, when the studies conducted for this purpose are examined,

it is seen that the variables that form the hypothesis of predicting attitude are activity-based, program-based, subject-based, concept-based and the ones used in this study are gender, grade level, mother and father's educational status, and book reading hours (Yavuz, 2017; Oker & Tay, 2019; İra, Özenç İra & Geçer, 2019; Bütün, 2021, Hocaoğlu & Aktepe, 2022). Just like the present study did, they found higher levels of attitude towards life studies course and attempted to investigate what affects the attitude in question and by what it is affected. As a matter of fact, when the studies conducted for this purpose are examined, it is seen that the variables that form the hypothesis of predicting attitude are activity-based, program-based, subject-based, concept-based and the ones used in this study are gender, grade level, mother and father education status, and book reading hours (Yavuz, 2017; Oker & Tay, 2019; İra, Özenç İra & Geçer, 2019; Tüm, 2021, Hocaoğlu & Aktepe, 2022).The results of this study show that the factors examined do not have any significant effect on attitudes towards life studies course.

Another result of the study is that 2nd and 3rd grade primary school students have positively high levels of school happiness. This result indicates that primary school students are happy at school. Happy individuals can be expected to experience less problems in social life, including school life, to be more successful in their work, and to be more effective in exhibiting skills, especially of communication. Other studies also found that primary school students with high levels of happiness experience less psychological problems (Richter, Gilbert, & McEvan, 2009), gain more comfortable peer communication (Aypay & Eryılmaz, 2011) and have higher attitudes towards school (Huebner, Suldo, Valois, Darne, & Zullig, 2004). This study investigated the variability of school happiness among 2nd and 3rd grade primary school students and found that school happiness levels do not differ according to students' gender, grades, parents' education levels and reading hours. There are several studies investigating students' happiness in terms of different variables and their reasons for happiness (Engels, Aelterman, Petegem, & Schepens, 2004; Lyubomirsky, King, & Diener, 2005; Richter, Gilbert, & McEvan, 2009). This study reveals that gender, grade level, parents' educational status and reading hours have no effect on attitudes of 2nd and 3rd grade primary school students towards life studies course and their school happiness. Almost all the studies emphasize the importance of investigating the source of children's happiness and conducting further research to increase happiness levels (Engels, Aelterman, Petegem, & Schepens, 2004; Lyubomirsky, King, & Diener, 2005;).

Our findings show a moderate, positive and significant relationship between the level of school happiness and life studies course attitudes among 2nd and 3rd grade primary school students. Attitude accounts for 15% of the total variance of school happiness. The relevant literature argues that primary school students with high levels of happiness have higher attitudes towards school (Huebner, Suldo, Valois, Darne, & Zullig, 2004). In this context, students with high levels of school happiness are expected to have high attitudes towards life studies course. Or vice versa, students with high attitudes towards life studies course may be usually happier at school. As the present study demonstrated, 15% of the total variance in school happiness is caused by attitude. In other words, the higher levels of attitudes children have towards life studies course, the happier they may be at school as they are affected in part by their attitude. It would be pertinent to identify other factors affecting children's happiness and to organize courses and school environment with a more holistic understanding.

The research results indicate that life studies course attitudes and happiness levels among 2nd and 3rd grade primary school students are high, and there is a significant relationship between attitude and happiness levels. As a matter of fact, in an attempt to better understand the source of both attitude and happiness, it can be suggested to conduct further studies focusing separately on different dimensions.

Life studies course can be enriched with activities in which students are able to develop positive attitudes. Activities that will increase students' self-confidence, encourage empathy and support positive thinking can help them develop positive attitudes. Such activities can contribute to strengthening the relationships between students and making the classroom environment more supportive. Based on the main result of the present study indicating a relationship between students' school happiness and their attitudes towards life studies course, students may be happy at school with the effect of positive attitude.

Given the relationship between school happiness and attitudes towards life studies course, families can also be actively engaged in the process as an important part of children's education. Families can support students' attitudes towards life studies course and their happiness levels. If families integrate the subjects learnt at school into daily life and establish emotional bonds with children, they may help students approach the course from a more positive perspective.

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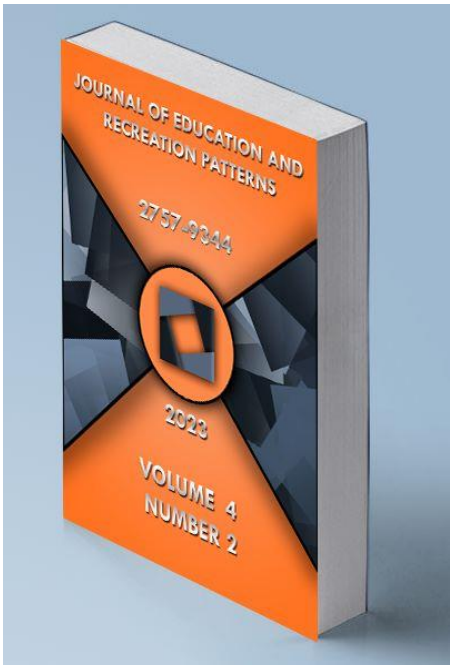
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Comparison of Maximal Sprint Speed, Maximal Aerobic Speed, Anaerobic Speed Reserve and Vo2max Results According to the Positions of Amateur Football Players: Experimental Study

Barışcan ÖZTÜRK[1], Hakan ENGİN[2], Yusuf KURT[3], Mehmet ILKIM[4]

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[1] Barışcan Öztürk, bariscan.ozturk.bc@gmail.com, https://orcid.org/0000-0001-7001-3032
[2] Hakan Engin, hkneng@gmail.com, https://orcid.org/0000-0002-2613-1020
[3] Yusuf Kurt, yusufkurt0046@gmail.com, https://orcid.org/0000-0002-6066-6109
[4] Mehmet Ilkım, Inonu University/Faculty of Sports Science, mehmet.ilkim@inonu.edu.tr, https://orcid.org/0000-0003-0033-8899

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Comparison of Maximal Sprint Speed, Maximal Aerobic Speed, Anaerobic Speed Reserve and Vo2max Results According to the Positions of Amateur Football Players: Experimental Study

Barışcan Öztürk[1], Hakan Engin[2], Yusuf Kurt[3], Mehmet Ilkım[4]

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ABSTRACT

Purpose: To compare the results of Maximum Sprint Speed(MSS), Maximum Aerobic Speed (MAS), Anaerobic Speed Reserve(ASR) and VO2max according to the positions of the players.

Methods: This study 5.34±1.44 years of sports history in the football branch, average age is 20.47±1.49 years, average height is 1.76±0.04 m, average weight is 74.41±45.59 kg, was conducted with a total of 91 volunteer male athletes. The study consisted of 2 sessions, 48 hours apart. In the first session, the 10 m speed test was applied, and in the second session, the Yo Yo-1 test was applied. Maximum Sprint speed, Maximal Aerobic Speed, Anaerobic Speed Reserve and VO2max results were calculated with 10 m and Yo Yo-1 test results. After descriptive statistics (Mean±Standard deviation) of all variables were made, One Way ANOVA test was applied to compare according to their positions and Bonferoni correction was applied to determine the difference between groups.

Results: There was no significant difference between the Maximum Aerobic Speed, Anaerobic Speed Reserve and VO2max results according to the positions of the players ($p>0.05$). However, a significant difference was found between the Left Wing and Center Defenders in the Maximal Sprint Speed results in favor of the Left-Wing players ($p<0.05$).

Conclusion: It was determined that the players had similar Maximal Aerobic Speed, Anaerobic Speed Reserve and VO2max performance outputs regardless of the positions they played, but Left-Wing players were faster than Central Defense players in Maximum Sprint Speed.

Keywords: Anaerobic Speed Reserve, Football, Maximum Aerobic Speed, Maximum Sprint Speed, VO2max

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INTRODUCTION

Football has a very important position in terms of interest, demand and economy when compared to other sports branches. Football is a sport in which technical and tactical skills and the main physiological factors specific to football are very important, in which the exercises applied at different intensities in terms of its characteristic features are practiced at irregular intervals for a long time. In addition to the physical, mental, technical, and tactical skills that footballers gain with training, they also acquire physiological skills (İnal, 2004).

The conditional goal of the training methods and programs applied in football is to enable the players to perform high-intensity movements during the match without fatigue. From this point of view, it is very important to plan and implement a training method for the positions of the athletes, since applying a training method according to the positions of the players will increase the performance parameters of the athletes (Katis & Kellis, 2009).

Maximum aerobic speed (MAS), maximum sprint speed (MSS), anaerobic speed reserve (ASR) and maximum oxygen consumption (VO2max) constitute the basis of the performance indicators of the football players. Anaerobic speed reserve (ASR) is generally defined as the value between Maximal Aerobic Speed (MAS) and Maximal Sprint Speed (MSS) and is used to determine the intensity of the exercise applied.3 Maximum Sprint Speed means the highest speed that the athlete can reach in the 10-meter area during the 40-meter sprint test and is generally measured by radar speed gun or photocell. Maximal Aerobic Speed (MAS), another component of Anaerobic Speed Reserve (ASR), has taken its place in the literature as the speed at which maximum oxygen consumption is reached (Billat & Andkoralsztaın, 1996; Buchheit, 2008). Also in their 2023 study, Cirasun, V. & Baydemir, B. analyzed young athletes aged 14-15 and found key correlations between physical attributes and performance. Better dorsiflexion angles were linked to higher muscle volume and enhanced dynamic balance. Furthermore, athletes with larger calf volumes also demonstrated improved dynamic balance. A notable finding was the positive association between speed performance and change of direction abilities. This research underscores the influence of specific physical traits on athletic performance in youth football.

In this study, the VO2max values of the athletes were calculated with the help of formulas by applying the Yo-Yo IR1 test. Obtained VO2max values were examined according to the positions of the players. It is thought that determining whether the positions played by the football players is related to the VO2max values will shed light on the training programs of trainers and conditioners or the researchers who will work in the field.

When we look at the above-mentioned concepts, it is clearly seen that there are many different elements that determine and change the performance of the football player. Knowing the level of performance parameters of football players for trainers or conditioners is the main guide in planning the training method to be applied.6 In this sense, determining the performances of maximal aerobic speed (MAS), maximal sprint speed (MSS), anaerobic speed reserve(ASR) and maximal oxygen consumption (VO2max) and revealing their relationships between them clearly demonstrates how important our study is. The fact that there is no research in the literature comparing the results of the MSS, MAS, ASR and VO2max according to the positions of the football players makes the research unique.

In this context, the aim of our study is to compare the results of maximal sprint speed, maximal aerobic speed, anaerobic speed reserve and maximal oxygen consumption according to the positions of the football players, to determine their levels and to reveal scientific data in order to increase their performance.

METHOD

Research Model

The research consisted of two sessions, 48 hours apart. 91 athletes participating in the study performed the 10 m speed test in the first session and the Yo Yo-1 test in the second session. Athletes tried the 10 m speed test twice, and the best time was recorded. A 3-5 minute rest was given between repetitions. The athletes applied the Yo Yo-1 test after 48 hours of rest, and MSS, MAS, ASR, and VO2max results were calculated with the 10m speed test and Yo Yo-1 test results. R and VO2max results were calculated with the 10m speed test and Yo Yo-1 test results.

Participants

Those who declared that they did not have any injuries playing in the Super Amateur League in Adana and that they volunteered to participate in the study, have 5.34±1.44 years of sports history in their branch, mean age 20.47±1.49 years, average height 1.76±0.04. m, with a mean weight of 74.41 ± 45.59 kg, a total of 91 volunteer male football players participated, and football players who declared that they were injured or were not willing to participate in the study were not included in the study. The athletes were informed about the study protocol, and the amateur football players who agreed to participate in the study signed a consent form stating the purpose and methods of the study.

Research Ethics

The procedures related to the study were prepared in accordance with the Helsinki Declaration Principles 2008 ethical standards and the ethics committee approval of the study was obtained from the Inonu University Health Sciences Non-Interventional Clinical Research Ethics Committee with the decision number 2022/3627 dated 21.06.2022.

Data Collection Tools

A questionnaire form prepared by the researchers was used for the demographic characteristics of the participants. The person in the form; age, height, weight, sports age and Body Mass Index (BMI) data were recorded. The presence of illness, injury, surgery, medications, allergies and nutritional status of the athletes were questioned, and the athletes who did not have any problems were measured between 15:00 and 17:00 on a day they did not train during the pre-competition preparation season.

10 Meter MSS Test: The maximum speed of the athletes was determined by the 10 m sprint test. The time of passing the last 10 meters was recorded with the photocell device placed between the 30th and 40th meters of the track, where the athlete will start running at maximum speed on a 40 m track. The speed per hour was calculated based on the time the athlete traveled 10 m (Al Haddad, 2015).

YoYo Level 1 (YIRT-1) Test: The aerobic endurance of the football players was determined with the YIRT-1 test. The test consists of a distance of 20+5 meters. Athletes ran the 20 m running area placed in the test area in a round-trip way according to the YIRT-1 signals. The test starts at 10 km/h and the athlete starts running with the first signal tone. The athlete performs the return with the second signal tone and makes the rest run in the 5-meter area. The test is continued by increasing the running speed at each level. The test of the athlete who missed the signal twice in a row was finished and the distance he ran was recorded.8,9 In addition, the MAS, ASR and VO2max values of the football players were calculated from the running distance in the YIRT-1 test and the results in the MSS using the equations in Figure 1.

Figure 1. VO_2max, MAS and ASR Equations

VO_{2max}(ml/dk/kg) =Distance Run (m) × 0.0084 + 36.4 [9]
Maximal Aerobic Speed(km/h) = 0.456250 x (Distance Run (km) + 3.617444 x 3,6 [10]
Anaerobic Speed Reserve (km/h): MSS – MAS [11]

Statistical Analysis

Statistical analyzes were performed using the SPSS 26.0 program. The demographic characteristics of the subjects were analyzed with descriptive statistics. Results are given as arithmetic mean±standard deviation($\bar{x}$±ss). Kolmogorov Smirnov test was used to test whether the data obtained in our study showed normal distribution. It was determined that the data showed normal distribution and parametric tests were applied in the statistical analysis. Since our participant group was more than two, One Way ANOVA analysis was applied to determine the differences between the means. At the same time, Bonferroni correction was used to determine which group caused the difference between the means. Significance level was taken as $p<0.05$

FINDINGS

This section contains the results of an analysis comparing demographic characteristics, VO2max, Maximum Aerobic Speed (MAS), Anaerobic Speed Reserve (ASR), and Maximum Sprinting Speed (MSS) among football players across different playing positions.

Table 1. Demographic Characteristics of Football Players

		Age (year)	Weight (kg)	Height (m)	BMI (kg/m2)	Sport Age (year)
Center Defender	$\bar{x}$	20,50	74,76	1,79	23,06	5,41
	Sd	1,44	3,59	0,05	1,40	1,67
Right Back	$\bar{x}$	20,66	74,28	1,76	23,76	5,33
	Sd	1,22	4,90	0,06	1,78	1,73
Left Back	$\bar{x}$	20,22	76,29	1,75	24,39	4,80
	Sd	0,77	3,94	0,04	1,94	,86
Midfielder	$\bar{x}$	19,93	74,12	1,73	24,47	5,31
	Sd	0,77	2,18	0,02	1,11	1,62
Right Wing	$\bar{x}$	20,23	73,89	1,75	23,80	5,84
	Sd	0,92	3,38	0,03	1,62	1,34
Left Wing	$\bar{x}$	20,75	71,00	1,74	22,40	5,33
	Sd	1,05	5,49	0,03	3,06	1,43
Forward	$\bar{x}$	21,21	75,90	1,77	23,92	5,42
	Sd	2,93	6,68	0,05	2,17	1,55
Total	$\bar{x}$	20,47	74,41	1,76	23,75	5,34
	Sd	1,49	4,59	0,04	1,99	1,44

The mean age of the football players was 20.47±1.49 years, weight was 74.41±4.59 kg, height was 1.76±0.04 m, sports age was 5.34±1.44 years and BMI values were 23.75±1.99 kg/m2.

Table 2. Comparison of VO_2max Results by Position of Football Players

		Position	n	x̄	Sd	F	p	Dif.
VO_2max (ml/kg/dk.)	1	Center Back	12	50,10	2,08	1,42	0,22	
	2	Right Back	9	50,60	1,84			
	3	Left Back	15	51,98	2,53			
	4	Midfielder	16	52,67	2,50			
	5	Right Wing	13	51,90	3,37			
	6	Left Wing	12	50,34	3,37			
	7	Forward	14	50,89	4,25			
	8	Total	91	51,32	3,04			

No significant difference was found between the VO2 max results of the football players according to their positions (p>0.05). The findings from Table 2 suggest that midfielders exhibit the highest average VO2max values among football positions, indicating superior aerobic capacity, while other positions show relatively similar aerobic fitness levels with minor variations.

Table 3. Comparison of MAS (km·h–1) Results by Position of Football Players

		Position	n	x̄	Sd	F	p	Dif.
MAS (km·h–1)	1	Center Back	12	15,70	0,40	1,43	0,21	
	2	Right Back	9	15,80	0,35			
	3	Left Back	15	16,06	0,49			
	4	Midfielder	16	16,20	0,48			
	5	Right Wing	13	16,05	0,65			
	6	Left Wing	12	15,74	0,65			
	7	Forward	14	15,85	0,83			
	8	Total	91	15,94	0,59			

No significant difference was found between the MAS (km·h–1) results of the football players according to their positions (p>0.05). The data in Table 3 indicates that midfielders have the highest average Maximum Aerobic Speed (MAS) among football positions, suggesting superior aerobic endurance, while other positions demonstrate comparably close MAS values with slight variations.

Table 4. Comparison of ASR (km·h–1) Results by Position of Football Players

		Position	n	x̄	Sd	F	p	Dif.
ASR (km·h–1)	1	Center Back	12	9,93	0,57	1,84	0,10	
	2	Right Back	9	10,44	0,29			
	3	Left Back	15	9,67	1,92			
	4	Midfielder	16	10,14	0,64			
	5	Right Wing	13	10,17	0,77			
	6	Left Wing	12	9,13	0,50			
	7	Forward	14	9,95	1,31			
	8	Total	91	9,91	1,09			

No significant difference was found between the ASR (km·h–1) results of the football players according to their positions (p>0.05). The findings from Table 3 suggest that midfielders have the highest average Maximum Aerobic Speed (MAS) among football positions, indicating superior aerobic endurance, while other positions show relatively similar aerobic fitness levels with minor variations.

Table 5. Comparison of MSS (km·h–1) Results by Position of Football Players

		Position	n	x̄	Sd	F	p	Dif.
MSS (km·h–1)	1	Center Back	12	19,71*	,86	2,61	0,02*	1-5*
	2	Right Back	9	20,39	1,35			
	3	Left Back	15	23,23	6,00			
	4	Midfielder	16	21,35	2,11			
	5	Right Wing	13	21,16	2,37			
	6	Left Wing	12	23,80*	2,40			
	7	Forward	14	21,26	3,12			
	8	Total	91	21,63	3,35			

A significant difference was found between the MSS (km·h-1) results of the players according to their positions, between the Left-wing players and the Center back players ($p<0.05$). Findings in Table 5 indicate a statistically significant difference in Maximum Sprinting Speed (MSS) between the Center Back and Right-Wing positions in football players. The p-value of 0.02* suggests that this difference is not due to random chance but is statistically meaningful, with Right Wing players having higher MSS values compared to Center Backs players. This highlights the distinct physical demands and roles of these positions on the field, with Right Wingers players requiring potentially greater sprinting capabilities.

DISCUSSION

This study was carried out to compare the MAS, ASR, MSS and VO2max results of football players playing in different positions according to the positions. A total of 91 football players with a mean age of 20.47±1.49 years, a weight of 74.41±4.59 kg, a height of 1.76±0.04 m, and a sports age of 5.34±1.44 years participated in the study.

Comparison of ASR (km·h-1) Results by Position

There was no significant difference between the VO2max (ml/kg/min) results of the athletes participating in our study and the positions they played. When the VO2max performances of the players are examined, the central defenders are 50.10±2.08, the right wing defenders 50.60±1.84, the left wing defenders 51.98±2.53, the central midfielders 52.67±2.50, right wing players 51.90±3.37, left wing players 50.34±3.37 and strikers 50.89±4.25 ml/kg/min. It has been found that the players who have good VO2max values from the positions participating in our research are the players who play in the central midfield area. Tonnessen et al. (2013) examined the maximum aerobic capacity of professional football players and did not find a significant difference between the VO2max results of defender, midfielder and forward players and the positions they played (Tonnessen, 2013). Gil et al., (2007) found no significant difference between the VO2max results of strikers, midfielders and defenders in their study on football players (Gil et al., 2007). Metaxas et al. (2006) found no significant difference between the positions of the players and their VO2max results (Metaxas et al., 2006). In another study, Söyler (2020) could not find a significant difference between the positions of football players playing in the regional amateur league and their VO2max results (Söyler, 2020). In order to determine the aerobic capacity of the football players playing in the Italian and Danish leagues, Yo Yo-1 test was applied and it was stated that the players playing in the midfield covered more distance than the defense and forward players, and accordingly their VO2max results were higher (Mohr et al., 2003). Di Salvo et al., (2007) stated in their study that midfielders have higher VO2max results than attacking and defensive players (Mohr et al., 2003). He also found that midfielders have higher VO2max than other positions, noting that a player's role in the team is related to his physiological capacity (Reilly et al., 2000). When the studies in the literature are examined, the findings in our study are similar to each other. It was found that the players playing in the midfield have a higher oxygen consumption capacity than the players

playing in the defense and attack zones. Players playing in the midfield take an active role in both defense and offense, and more effort is required to control a wider area in the game. This situation is thought to be the reason why the VO2max values of the players playing in the midfield are better than the players playing in other positions.

Comparison of MSS (km·h-1) Results by Position

Football is a sport in which there are intermittent linear, diagonal and change of direction runs at different speeds due to the nature of the game, and these runs are combined with technical and tactical skills. It is possible with a highly developed combination of anaerobic and aerobic properties of the football players, so that the specified features can be applied in the best way on the field (Rampinini et al., 2007; Stolen et al., 2005). Approximately 90% of the total energy used by a football player in the match comes from aerobic metabolism (Bangsbo, 1994). Aerobic capacity is an important factor in the recovery of athletes between high-intensity workouts and, accordingly, delaying the onset of fatigue (Tomlin & Wenger, 2001). Enhanced aerobic capacity is often defined as VO2max. This is very important for estimating aerobic capacity, but it may not be valid in sports where there is a continuous high tempo run alone, such as football. During the competition, players are required to perform higher intensity runs and sprints at a higher competitive level with a rapid recovery (Mendez-Villanueva et al., 2010; Dupont et al., 2004; Helgerud et. al., 2001; Helgerud et al., 2007). This depends on the athlete's speed at maximum oxygen consumption (MAS). MAS is known as running speed in VO2max (Berthoin et al., 1994)

There was no significant difference between the MAS (km·h-1) results of the athletes participating in our research and the positions they played. When the MAS performances of the football players are examined, it is seen that the central defenders are 15.70±0.40, the right-wing defenders 15.80±0.35, the left wing defenders 16.06±0.49, the central midfielders 16.20±0. 48, right wing players 16.05±0.65, left wing players 15.74±0.65 and strikers 15.85±0.83 km·h-1. When the literature was examined, studies examining the MAS values of football players according to positions could not be found. However, when studies with football players were examined, Rowan et al., (2019) found the average MAS values of young football players to be 4.38±0.26 m/s (13.14±0.93 km/h). Gonzalez-Badillo et al., (2015) found the MAS value of the football players in the Spanish youth team as 4.5 m/s (16.20 km/h). In another study, the MAS value of young Brazilian football players was found to be 4.6 m/s (16.56 km/h) (Teixeira, et. al., 2014). The values obtained in these studies and the values in our study are similar to each other. The fact that football players perform high-intensity repetitive runs can change the outcome of the match. Therefore, the runs that the athletes can maintain at maximum oxygen consumption levels will affect the level of efficiency in the field. In addition, in our research, the MAS values of the players playing in the midfield were found to be higher than the players playing in the defense and attack zones. Players playing in the midfield play the game in two ways (defense-offensive). In addition, when the field is parceled out, the largest area in terms of playing field falls to the midfielders. In this case, it requires the players playing in the midfield to run more. Activities such as starting attacks, overlapping, contributing to the attack, counter-attacking and concluding, etc. in offense, and catching with few people in defense, one-on-one combat, pressure level are possible with high-intensity runs. This can be considered as the reason why the players playing in the midfield have higher MAS values than the attacking and defensive players, since the display of these skills is realized by running continuously at the VO2max level.

Comparison of ASR (km·h-1) Results by Position

There was no significant difference between the ASR (km·h-1) results of the athletes participating in our research and the positions they played. When the ASR performances of the players were examined, the central defenders were 9.93±0.57, the right wing defenders

10.44±0.29, the left wing defenders 9.67±1.92, the central midfielders 10.14±0.64. , was found to be 10.17±0.77 for right wing players, 9.13± 0.50 for left wing players and 9.95±1.31 km·h-1 for strikers. The concept of ASR is defined as a new concept in sports sciences. The athlete's anaerobic speed reserve (ASR) is typically defined as the difference between Maximum sprint speed (MSS) and running speed (MAS) in VO2max. ASR can be broadly defined as a combination of both Maximum aerobic and anaerobic energy capacities (Bundle, et al., 2012). When we examine the ASR, it is seen in the activities that take place above the MAS value of the athlete. Accordingly, it can be said that the athlete appears in the activities performed in the supramaximal load in the MAS during the game (Bundle, et al., 2012). Changes in the game structure of football have increased the pace of the game. In the game, the athlete must perform activities at maximal load and above due to offense and defense. Research examining ASR is limited in the literature. In the only study in the literature, Ortiz et al. (2018) compared the ASRs of football players according to their positions According to the findings of the research, although there is no difference between the positions, the defensive players (12.7±1.4) attacking (12.6±1.5) and midfielders (12.4±1.3) with a slight difference. He stated that he had a higher level of ASR than players playing in his region. This finding is similar to the result of our study. Although there was no significant difference in this study, the ASR values of the right defenders were found to be higher than the players playing in other positions, albeit with a small difference. Our findings show that right wing defenders have a higher ASR than other players, but the tactical situations associated with different positions likely change the rate of ASR available to players.

Comparison of MSS (km·h-1) Results by Position

According to the positions of the athletes participating in our research, a significant difference was found between the MSS (km·h-1) results between the left-wing players and the central defense players in favor of the Left-Wing players ($p<0.05$). While the MSS of the left-wing players was found to be 23.80±2.40 km·h-1, it was found to be 19.71±0.86 km·h-1 for the central defenders. In their study, Al Haddad et al., (2015) found that among all young football players between the ages of U13-U17, the players playing in the attack/wing area were faster than those playing in the defense and midfield areas. Malina et al., (2005) found in a study they conducted that attacking/wingers were faster than defensive players. In another study, Gil et al., (2007) similarly stated that attacking/wingers are faster than defensive players. In some other studies, it has been found that offensive/wingers are faster than defenders or midfielders (Mendez-Villanueva et al., 2013; Sporis et al., 2009; Boone et al., 2012) It can be said that the reason why the wingers in our research are faster than the defenders is due to the fact that fast players are involved due to the tactical expectations of the game, unlike other positions, especially in these regions.

Conclusion

When the MSS results of the football players playing in different positions were examined, a significant difference was found between the MSS values of the left-wing players and the defenders. However, although there was no significant difference in performance in MAS, ASR and VO2max results, it can be said that midfielders are better in MAS and VO2max results, and right-wing defenders are better in ASR. Depending on the development in football, the tactical needs associated with football players playing in different positions likely change the ratio of MAS, ASR, MSS and VO2max values available to players. The anaerobic and aerobic conditions that occur due to the nature of the game reveal the necessity of analyzing the running profiles of the football players in terms of ASR. Determining the ASR values of the players, determining the running profile and training them in line with this profile can be effective in increasing the competition level of the team and the players, and in the development of defense and attack techniques.

Recommendation

It is thought that the results obtained from the study will contribute to the literature. The differences in physical, physiological and motoric characteristics of athletes between positions can guide coaches in player selection. It is thought that similar studies can be conducted to evaluate the physical, physiological and motoric characteristics between positions in different team sports.

Limitations

This study is limited to football players between the ages of 19-22 who play football in the Super Amateur League in Adana. At the same time, male football players who had played football for at least 4 years, who declared that they did not have any injuries or health problems and agreed to participate in the study voluntarily, were included in the study.

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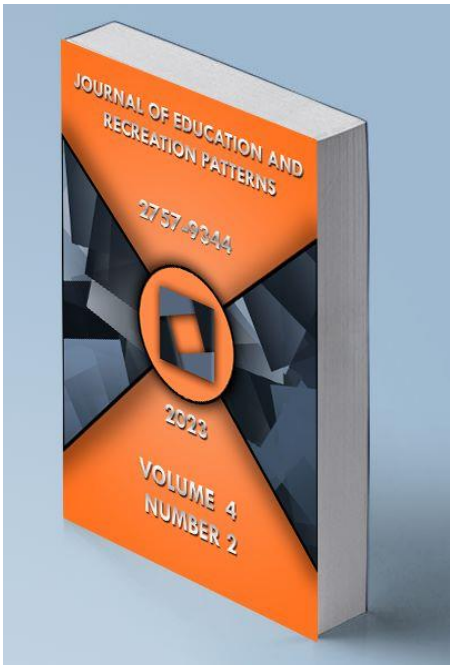
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The Importance of Physical Education and Sports in Education: A Study Focusing on Student Development

Ahmet DEVECİ[1]

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[1] Ahmet Deveci, Hatay Mustafa Kemal Universty, Faculty of Sports Sciences, ahmetdeveci08@gmail.com, https://orcid.org/0000-0003-1814-3539

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The Importance of Physical Education and Sports in Education: A Study Focusing on Student Development

Ahmet Deveci[1]

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ABSTRACT
This study aims to explore the impact of physical education and sports on the general development of students in the context of education. Qualitative methodology and interview method in accordance with this approach were used in the research. The research group consisted of 29 physical education and sports teachers working in different provinces of Turkey. In participant selection, the purposeful sampling approach, which is a common choice in qualitative research, and the maximum diversity sampling method was used as part of this purposeful sampling strategy. The data for this study were collected through semi-structured interviews designed by the researcher. Then, content analysis approach was applied to evaluate the research data. The findings of the study showed that the inclusion of physical education and sports lessons in the school curriculum provides students with a wide range of positive outcomes in psychosocial, physical, cognitive, psychomotor, emotional and health areas. Additionally, the research found that physical education and sports lessons promote fair play values among students and contribute significantly to the constructive use of free time.

Keywords: Development Education, Physical Education and Sports, Student

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INTRODUCTION

Education can be defined as a science and art that contributes to the process of becoming a humane individual. While education increases the productivity of the individual by ensuring the development of his/her entire being, it also provides the opportunity to question life and the processes within it. Education makes individuals competent in areas such as knowledge, skills, ethics, art and culture, strengthens their personal identities and contributes to their development as responsible members of society (Eroğlu, 1998). In this context, education is not only a fundamental process that supports the continuous development of individuals throughout their lives, but is also not limited to the development of individuals' academic knowledge. Therefore, it can be stated that education makes significant contributions to the physical, emotional and social development of individuals. Yıldız et al. (2021) stated that the most important institution that will bring these contributions to individuals in a planned and programmed manner is educational institutions (Yıldız et al., 2021). Especially considering that educational institutions play an important role in the process of shaping society and raising future generations in the desired way, it can be said that the physical education and sports education lesson offered in schools pioneers these contributions.

Physical education and sports are conscious and planned activities that aim at the physical, mental, social and emotional development of the individual, who is the main resource of future generations. It is also considered an integral part and complement of general education (Yıldıran & Yetim, 1996; Yıldız & Güven, 2013). Physical education and sports lessons in schools involve students' participation in structured physical activities. This is an important component that helps students learn and develop in all areas. However, physical education and sports are not limited to just one lesson, they represent a lifelong process. This process continues throughout life in different ways, such as learning new skills, playing sports in after-school activities, and improving health through regular physical activities (Johnson & Turner, 2016).

Physical education and sports education aims, among other things, to help students acquire long-term physical activity and sports habits that will improve their general health (Ardoy et al., 2010). In this way, physical education and sports education have an important place in the development of health-related physical fitness (Cassidy, 1965). It is emphasized in the literature that sports-based curriculum plays an important role in achieving positive physical and psychological results in healthy child development (Pesce et al., 2013).

Physical education and sports lessons contribute to the development of individuals' moral and spiritual qualities, supporting psychomotor skills, protecting health and rehabilitation of various disorders (Prysiazhniuk et al., 2018). However, these lessons are not limited to physical development; It also provides positive effects on students' emotional and mental development. For this reason, physical education and sports lessons in schools' curricula stand out as an important component (Yıldız and Güven, 2013). Physical education and sports have the potential to make significant contributions to the development of basic movement skills and physical competencies that children need in later life. Moreover, when this discipline is applied appropriately, they can support the development of children's social skills, behavior, self-esteem, and preschool attitudes, and in some cases, they can also aid academic and cognitive development (Bailey, 2006). Physical education and sports contribute to the acquisition of positive personality traits as well as personal development. This discipline helps people develop more social and effective communication skills. Some people may have the wrong perception that physical education and sports lessons can hinder academic success, but planned and purposeful exercises have been proven to have a positive impact on students' social and cognitive development. Therefore, it is important to explain that it contributes to the academic

success of students and to raise awareness about this issue. Students can be supported to participate in sports activities through encouraging activities for parents (Aras & Asma, 2020).

In this research presents a research focusing on the development of students under the title “The Importance of Physical Education and Sports in Education”. Traditionally, academic achievements, which are often emphasized in education, represent only one aspect of students' abilities. However, it is an undeniable fact that physical education and sports lesson provide students with many important achievements that will benefit them throughout their lives, such as physical health, social skills, discipline and self-confidence.

This research aims to reveal the impact of physical education and sports on student development by examining the role of physical education and sports in education as a result of the opinions of physical education teachers. This effect is thought to be of critical importance in revealing students' full potential, going beyond academic achievements. In this context, an ideal education system should support both the mental, psychosocial and physical development of students. It is thought that this situation will enable societies to raise healthier, more balanced and more successful individuals.

Consequently, the purpose of this research is to highlight the role of physical education and sports in education and to provide a basis for understanding the positive impact of this field on students' life skills and overall development. It is thought that this review will be an important reference source for future improvements of education systems and a more comprehensive evaluation of student success.

METHOD

Research Model

The study was crafted with a qualitative research design. Qualitative research can be described as an endeavor to comprehend and interpret the prevailing situations arising from a specific phenomenon and the interactions within this phenomenon (Patton, 2014). The primary objective of a qualitative research design is to provide insight into how individuals derive meaning from their experiences, to elucidate the process of sense-making in terms of outcomes, and to delineate how individuals articulate their perspectives on the situations they encounter. It is imperative to emphasize that the focus at this stage is on understanding events from the participants' viewpoint rather than from that of the researcher (Merriam, 2018).

To directly capture participants' firsthand experiences regarding the subject, the research employed the interview method, which is commonly utilized in qualitative research designs (Yıldırım & Şimşek, 2018). It's worth noting that in the interview method, quality takes precedence over quantity. In fact, it can be argued that even a single participant in the interview method can yield the necessary data to address the research problem (Merriam, 1998; Patton, 2014; Teddlie & Yu, 2007).

Research Design

Qualitative research designs serve as a methodological strategy for modeling a planned theoretical strategy and providing elaboration across the various stages that can unfold the research process. Phenomenology is a qualitative research approach that centers on phenomena that are defined but do not have a detailed and detailed understanding (Yıldırım and Şimşek, 2018). In the context of this study, a strategic framework was established by employing the phenomenological research design. The rationale behind choosing the phenomenological approach for this research is that the primary data sources are individuals who have personally encountered the phenomena under investigation and possess the capacity to vividly communicate these experiences to the external world.

Research Group

The research group comprises 29 physical education and sports teachers actively working in various regions across Turkey.

In comparison to studies designed with a quantitative approach, the number of participants in qualitative research may be deemed limited. However, in qualitative research, the number of participants is determined by the recurrence of concepts and the data collection processes. This phenomenon is commonly referred to as "data saturation," as noted by Patton (2014) and Yıldırım and Şimşek (2018). Hence, the concept of data saturation is an influential factor in establishing the size of the research group.

In the study, the purposeful sampling method, which is a non-probability sampling strategy commonly used in qualitative research, (Merriam, 2018) and the maximum diversity sampling method, which falls into the category of purposeful sampling techniques, were used in participant selection (Yıldırım & Şimşek, 2018). Information regarding the age, gender, school level, education status, total tenure and province of work variables of the participants in the research group are included in Table 1 below.

Table 1. Distribution of data regarding the age, gender, school level, educational status, total tenure, and province of work variables of the physical education and sports teachers who constitute the research group.

Codes	Age	Gender	School Level	Educational Status	Total Tenure	Province of Work
K1	36	Female	Middle school	Master's Degree	10	Hatay
K2	40	Male	High school	Bachelors Degree	12	Hatay
K3	31	Female	Middle school	Master's Degree	5	Gaziantep
K4	34	Male	High school	Bachelors Degree	8	Sanlıurfa
K5	40	Male	High school	Bachelors Degree	14	Sanlıurfa
K6	32	Female	Middle school	Master's Degree	7	Adıyaman
K7	46	Male	High school	Bachelors Degree	19	Kahramanmaras
K8	27	Female	Middle school	Bachelors Degree	3	Sırnak
K9	28	Male	Middle school	Master's Degree	2	Malatya
K10	43	Male	High school	Bachelors Degree	17	Malatya
K11	38	Female	High school	Bachelors Degree	13	Adana
K12	41	Male	Middle school	Bachelors Degree	13	Adana
K13	34	Male	Middle school	Bachelors Degree	7	Mersin
K14	48	Female	High school	Bachelors Degree	21	Mersin
K15	30	Male	Middle school	Master's Degree	5	Sanlıurfa
K16	35	Male	Middle school	Bachelors Degree	9	Gaziantep
K17	44	Male	High school	Bachelors Degree	16	Hatay
K18	28	Female	High school	Master's Degree	3	Adıyaman
K19	37	Male	High school	Master's Degree	11	Hatay
K20	39	Female	Middle school	Bachelors Degree	15	Kahramanmaras
K21	45	Male	Middle school	Bachelors Degree	18	Hatay
K22	29	Female	High school	Master's Degree	4	Kocaeli
K23	36	Male	Middle school	Bachelors Degree	7	Aksaray
K24	26	Male	Middle school	Bachelors Degree	2	Kilis
K25	37	Male	Middle school	Bachelors Degree	12	Diyarbakır
K26	25	Female	Middle school	Bachelors Degree	1	Hatay
K27	41	Male	High school	Bachelors Degree	16	Ankara
K28	35	Male	High school	Master's Degree	10	Hatay
K29	36	Male	Middle school	Bachelors Degree	8	Hatay

Data Collection Tools

As a data collection tool in the study, a personal information form developed by the researcher, which included questions about the participants' age, gender, school level, educational status, total tenure and the province they worked in, was used. In addition, in this research, a question was asked to the participants in the interview form about what effect the physical education and sports lesson had on student development. It is stated in the literature that it is important to include a small number of questions in semi-structured interview forms (Eysenbach & Köhler, 2002). In this context, it can be stated that a question included in the interview form within the scope of the research can shed light on the solution of the current research problem and is compatible with the literature information.

Validity and Reliability of the Research

In qualitative research, the following alternative terms can be used to ensure validity and reliability: "Credibility" instead of "Internal Validity", "Transferability" instead of "External Validity", "Consistency" instead of "Internal Reliability" and "Confirmability" as an alternative to "External Reliability" (Yıldırım & Şimşek, 2018; Creswell, 2018; Merriam, 2018). Validity and reliability in research; They are important concepts in terms of revealing the scientificness, credibility, measurability, generalizability and repeatability of that study (Kılınç, 2018). In this context, the researcher implemented essential measures to guarantee the validity and reliability of the research while mitigating factors that could potentially impact them. To ensure validity and reliability, a combination of strategies, including credibility, sustained engagement, in-depth data collection, expert evaluation, participant verification, confirmability, transferability, and consistency, were employed, as outlined by Yıldırım & Şimşek (2018).

Data Collection Process

The data of the research were collected online with the Zoom application in August and September 2023. Prior to the meeting held via the Zoom application, permission and appointments were obtained from the participants, and then meetings were held in their free time. Before these interviews, participants were informed about the purpose of the study and the ethical principles. The fact that the researcher is a lecturer at the faculty of sports sciences allowed him to easily reach physical education and sports teachers working in different provinces of Turkey.

Care was taken to ensure that the interviews took place in a suitable atmosphere so that the participants felt comfortable (Roulston, 2010). Additionally, the interviews started in a conversational style, and this approach helped establish rapport and make the participants feel more comfortable in the interview environment (Teddlie & Tashakkori, 2009).

Each interview lasted approximately 10 minutes. The interviews were recorded with a mobile phone with voice recording feature during the online meeting, with the permission of the participants, and then each participant's conversations were transferred to the computer in word format and turned into a written document.

Statistical Analysis

For assessing qualitative data, the content analysis method was employed, which is one of the analytical techniques commonly utilized in qualitative research designs (Miles & Huberman, 1994; Yıldırım & Şimşek, 2018). After evaluating the qualitative data, the data obtained were divided into themes, coded and categorized with an inductive approach (Stake, 1995).

Data reliability was assessed using the formula from Miles and Huberman (1994), which is expressed as:

[Consensus theme / (Consensus + Disagreement theme)] x 100

In order to gauge the agreement among the experts involved in the coding process, the outcome of the above formula should ideally surpass 70%, as recommended by Miles & Huberman (1994) and Patton (2014). Following the application of this formula, 99 out of the 110 codes proposed by the experts received consensus and a consensus rate of 99/(99+11)*100 = 90% was achieved in terms of code suitability. The 11 codes that did not reach a consensus were subsequently merged with other relevant codes. Based on these results, it can be concluded that the data analysis is reliable.

FINDINGS

In this section, in Table 2 below, the study group's views on "the impact of physical education and sports lesson on the development of students" have been tried to be described with themes and codes. In addition, themes and codes are listed according to their frequency distribution, and direct quotes from the participants regarding the codes are included.

Table 2. Participants' Opinions on What Effect Physical Education and Sports Lessons Have on the Development of Students

Themes		Codes	Participants	Frequency	Sample Quotes
Psychosocial Development	✓	Developing Social Harmony	K13, K17, K20, K22, K25	5	*"Physical education…is effective in ensuring social harmony."* **K25**
	✓	Gaining Awareness of Being a Group	K16, K25, K28	3	*"… Gaining awareness of being a group, that is, it has a great impact on keeping the goals and interests of a group above personal goals and interests."* **K16**
	✓	Instilling a Sense of Responsibility	K19, K23, K24	3	*"I think it contributes to students becoming responsible individuals."* **K19**
	✓	Contributing to the Development of Character and Personality Traits	K6, K25, K27	3	*"…in addition, physical education contributes to character and personality development."* **K6**
	✓	Developing Material and Spiritual Values	K21, K23, K27	3	*"In addition to being more enthusiastic in lessons, it has both a material and moral impact."* **K23**
	✓	Teaching the Concept of Discipline	K12, K14	2	*"I think it has a lot of impact, such as teaching how to work with discipline…."* **K14**
	✓	Developing the Understanding of Helpfulness	K19, K28	2	*"…learns…to help others."* **K28**
	✓	Providing Interaction in the Classroom	K13, K25	2	*"Interaction in the classroom is at a very high level thanks to physical education lessons…"* **K13**
	✓	Increasing the Perception of Freedom	K3	1	"...contributes significantly to raising a free, independent youth." **K3**
	✓	Ensuring Being a Questioning Individual	K3	1	*"…makes a great contribution to raising inquisitive youth."* **K3**
	✓	Contributing to Cultural Development	K6	1	*"…physical education…contributes to cultural development"* **K6**

Table 2. Participants' Opinions on What Effect Physical Education and Sports Lessons Have on the Development of Students (continued)

	✓	Enabling Different Sports Branches to Be Recognized	K7	1	*"…they are starting to focus on different sports. In this way, they have the opportunity to get to know almost all sports branches."* **K7**
	✓	Gaining the Spirit of Fighting	K10	1	*"The spirit of struggle, of course…"* **K10**
	✓	Teaching to Cope with Stress	K12	1	*"...they learn to overcome their stress more easily through movement."* **K12**
	✓	Ensuring Being a Sharing Individual	K19	1	*"I think it contributes to students becoming more optimistic individuals in terms of helpfulness."* **K19**
	✓	Developing Self-Confidence	K21	1	*"...Of course, I also think that students improved their self-confidence with this lesson..."* **K21**
	✓	Ensuring Individuals Achieve Appropriate Behaviors	K25	1	*"…the dynamic nature of the games applied in physical education is effective in helping individuals obtain more appropriate behavioral patterns in the desired direction."* **K25**
	✓	Contributing to Democratic Processes	K25	1	*"…contributes to democratic processes…"* **K25**
	✓	Revealing Leadership Traits	K28	1	*"…It plays a role in revealing these characteristics of students with leadership qualities…"* **K28**
Total				**34**	
Physical Development	✓	Aesthetic Body Development	K1, K5, K6, K10, K13, K14, K15, K16, K17, K18, K20, K21, K22, K27, K28, K29	16	*"It contributes positively to physical development, primarily in terms of aesthetic appreciation…"* **K28**
	✓	Creating the Foundation for Growth and Development	K6	1	*"Physical education activities are fundamental to growth and development. Because the development of the human organism depends on the physical activities in which large muscle groups participate."* **K6**
Total				**17**	
Cognitive Development	✓	Supporting Mental Development	K1, K5, K13, K14, K25, K27, K29	7	*"…Kinesthetic intelligence has an important structure on mental development. There are many studies and articles on this subject. Especially for children and young people, kinesthetic intelligence is an ability that can be developed by practicing physical activities such as team sports and individual sports. For this reason, I think physical education lessons have an important place in student development because they contain these features."* **K1**

Table 2. Participants' Opinions on What Effect Physical Education and Sports Lessons Have on the Development of Students (continued)

	✓	Developing Healthy Thinking Skills	K9, K3	2	*"It contributes greatly to raising healthy-thinking individuals."* **K3**
	✓	Developing Creativity Abilities	K6	1	*"…Physical education… provides opportunities to develop creative abilities..."* **K6**
	✓	Helping to Make the Best Decisions	K9	1	*"…I think students make healthier and correct decisions thanks to the relaxation in their mental thoughts."* **K9**
	✓	Increasing Academic Success	K12	1	*"… I also think that academic success will come with this lesson."* **K12**
Total				**12**	
Psychomotor Development	✓	Ensuring the Development of Movement Skills	K20, K25, K29	3	*"... Considering that it contributes to the development of motor movement skills, I can say that it has a significant effect on psychomotor development."* **K20**
	✓	Discovery of Movement Skills	K8, K28	2	*"It is of great importance for students to discover their own personal movement skills..."* **K8**
	✓	Enabling Different Motor Skills to be Demonstrated in an Artistic Context	K6, K7	2	*"…in addition, students demonstrate different artistic movement skills in this lesson…"* **K7**
	✓	Facilitating the Performing of Movements Needed in Daily Life	K2	1	*"Physical education lessons, properly conducted, benefit students' development in every subject. First of all, it develops the movement skills necessary for performing daily routine tasks."* **K2**
	✓	Facilitating the Acquisition of New Movement Skills	K6	1	*"Physical education… has rich opportunities in the formation of new movements…"* **K6**
	✓	Developing Fine Muscle Motor Skills	K27	1	*"…I think it is a very important lesson in terms of helping the student acquire fine motor skills…"* **K27**
Total				**10**	
Health	✓	Supporting Raising Healthier Generations	K13, K24, K25, K26	4	*"…It contributes to raising healthy generations. I think this may be the most important impact in today's world. Because with technology, people are becoming more sedentary..."* **K24**
	✓	Improving Mental Health	K4, K21, K27	3	*"…Students relax and heal themselves spiritually with the body energy they will release in our lesson…"* **K4**
	✓	Protecting Mental Health	K9, K26	2	*"…I believe that thanks to sports, a healthy body and mental health are also protected."* **K26**

Table 2. Participants' Opinions on What Effect Physical Education and Sports Lessons Have on the Development of Students (continued)

	✓	Providing Physiological Development	K4	1	*"…As the name of the lesson suggests, it provides physiological development. "I can say that this completely matches the name of the lesson."* **K4**
Total				**10**	
Emotional Development	✓	Developing the Skill of Expressing Emotions and Thoughts	K3, K6, K27, K28	4	*"…the ability to express one's feelings and thoughts easily is developing..."* **K28**
	✓	Enabling Emotion Control	K6, K29	2	*"…contributes to controlling emotions. Because interaction in the game and sports environment provides suitable opportunities for the release and control of emotions..."* **K29**
	✓	Contributing to a Person Being at Peace with His Own Self and Loving Himself	K28	1	*"…by allowing the student to be at peace with himself, his self-love…develops…"* **K28**
Total				**7**	
Fair Play	✓	Creating Awareness of Complying with the	K11, K12, K28	3	*"Life is a game. Playing the game according to the rules is the greatest virtue. In this context, the first step in transferring the behavior of following the rules to students begins with physical education lesson."* **K11**
	✓	Developing the Understanding of Competition under Equal Conditions	K14, K28	2	*" I think it has a lot of impact, learning to compete under equal conditions, etc."* **K14**
	✓	Teaching the Understanding of Appreciating One's Opponents by Accepting Defeat	K28	1	*"... learns to compete under equal conditions, to appreciate others by accepting defeat, to be humble when he wins..."* **K28**
Total				**6**	
Time Evaluation	✓	Enabling Free Time to be Utilized in the Desired Way	K6, K15, K28	3	*"…I think they make their time valuable after lessons."* **K15**
Total				**3**	

DISCUSSION

According to the first findings obtained from Table 2 regarding the research problem, physical education and sports lessons help to increase social harmony, develop the sense of group identity, instill a sense of responsibility, shape character and personality traits, improve both social harmony and teach material and moral values, Teaching the concept of discipline, developing a sense of helpfulness, facilitating in-class interaction, increasing the perception of freedom, developing an inquisitive mindset, contributing to cultural development, ensuring recognition of various sports disciplines, instilling spirit, encouraging competition, teaching stress management, encouraging a sharing attitude, increasing self-confidence. It makes a significant contribution to the psychosocial development of students by facilitating the acquisition of appropriate behavioral patterns, contributing to democratic processes and revealing leadership qualities. According to the second result of the research problem, physical education and sports lesson; It contributes to the physical development of students by allowing aesthetic body development and laying the foundation for growth and development. According to the third result of the research problem, physical education and sports lesson; It contributes to the cognitive development of students by providing a basis for supporting mental development, developing healthy thinking skills, improving creativity abilities, helping to make the best decisions and increasing academic success. According to the fourth result of the research problem, physical education and sports lesson; It allows the development of movement skills and the discovery of movement skills. In addition, it contributes to the display of different motor skills in an artistic context and to facilitate the performance of movements needed in daily life. It contributes to the psychomotor development of students by facilitating the acquisition of new movement skills and the development of fine motor skills. According to the fifth result of the research problem, physical education and sports lesson; It has a great importance in helping students become healthy individuals by helping to raise healthy generations, improving mental health, protecting mental health, and ensuring physiological development. According to the sixth result of the research problem, physical education and sports lesson; It has an impact on the emotional development of students by contributing to improving the ability to express feelings and thoughts, ensuring emotional control, being at peace with one's own self and loving oneself. According to the seventh result of the research problem, physical education and sports lesson; It supports the development of fair play characteristics in students by providing them with the opportunity to gain awareness of obeying the rules, developing the understanding of competing under equal conditions, and teaching them the understanding of accepting defeat and appreciating their opponents. Finally, according to the eighth result of the research problem, physical education and sports lesson; It provides the opportunity to spend free time as desired. These results appear to reveal that physical education and sports lessons, unlike other disciplines, contribute to the development of students in a wide variety of areas.

This research was examined and conceptualized with an approach aimed at discovering the effects of physical education and sports lessons on student development during the education process. There are limited studies in the literature on how physical education and sports lessons and physical activities affect student development. In addition, suggestions are made in the literature that more research should be done to better understand this situation and the specific structures that lead to the acquisition of life skills in school environments (Holt et al., 2012; Zeng et al., 2017; Camiré et al., 2009). Based on this, it can be said that the current study subject and the results obtained regarding this study subject meet this expectation in the literature.

Student learning outcomes in school can be classified into mental (cognitive), emotional, social, physical, and psychomotor domains (Sumarsono et al., 2018). In this sense, it can be stated that physical education and sports discipline is widely used by societies all over

the world in order to encourage the positive development of students in existing fields and to include students more effectively in education and social life (Armour et al., 2013; Bailey, 2006). Because physical education and sports lessons and the physical activities performed within these lessons provide significant contributions to students in terms of their physical, emotional, cognitive, social, psychomotor development and becoming healthy individuals, compared to other disciplines (Bailey, 2006; Teodora-Mihaela et al., 2017; Matson, 2019; Abate et al., 2020). In addition, physical education and sports lessons have the potential to make significant contributions to the development of children's basic movement skills, physical competence and psychosocial adaptation levels, which are necessary precursors to their later lifestyles and participation in sporting physical activities. It can be stated that when physical education and sports lessons are presented appropriately, they can make positive contributions to the development of social skills and social behaviors, as well as life satisfaction, self-esteem, autonomy and positive attitudes towards school. In addition, it should not be forgotten that physical education and sports lessons provide undeniable benefits on both academic and cognitive development (Bailey, 2006; Abate et al., 2020; Klizas et al., 2012). In a study whose results were reported, it was stated that high school students gained skills that are constantly necessary for their lives, such as self-efficacy and communication, by participating in sports activities. Based on this, it can be said that the results of the current research are valuable in terms of emphasizing the importance of physical education and sports lessons, which make positive contributions to many development areas of students.

Literature studies on physical activity have drawn particular attention to the positive development role of physical activities in terms of children's general health and early development. Many physical activity-themed studies show that physical activity activities have significant positive effects on individuals' social, physical, cognitive, psychological, personality, moral and lifestyle development (Gibbons et al., 1995; Miller et al., 1997; Martinek & Hellison, 1997; Fox, 1998; Burt, 1998; Hassmen & Koivula, 2000; Theodoulides & Zırh, 2001; Strauss et al., 2001; Eley & Kirk, 2002; Bäckmand, 2006; Trudeau & Shephard, 2008; Lemos et al., 2012; Armor et al., 2013; Zeng et al., 2017). For this reason, it can be stated that it is important to see it as a duty for both families and educators to instill motivation in children to participate in physical activities at an early age (Brustad et al., 2008).

Nowadays, researchers want to have information about the effect of physical activities on the development of cognitive processes. In studies conducted on school-age individuals on the subject, it is observed that there is a relationship between high physical activity levels and high cognitive and academic performance (Janssen et al., 2014; Ellemberg & St-Louis-Deschênes, 2010; Gallotta et al., 2012; Gallotta et al., 2015). Therefore, it can be stated that students' cognitive performance will increase with the physical education and sports lessons implemented in the school curriculum. Because physical education and sports lessons are a discipline that leads students to increase their mental capacity by providing them with the opportunity to do high-level activities. In this way, students can improve their cognitive performance by focusing better and increasing their learning processes (Travlos, 2010). One study showed that moderate to vigorous exercise led to greater memory improvements during the school day in elementary school-aged children. In this context, it is important to use physical education and sports activities as a means of regulating cognitive processes among children in the classroom. Additionally, according to this study, it was stated that increasing the time devoted to physical education and sports could support acute cognitive benefits, such as improved memory functioning, which have significant effects on academic performance (Aguayo et al., 2019). In terms of cognitive development, positive changes occur especially in children's language learning, academic achievement, attention and working memory (Zeng et al., 2017; Lemos et al., 2012). In addition, research strongly argues that children's academic success, physical fitness and health cannot be improved by limiting the time allocated to physical education and sports and in-school physical activity programs (Trudeau & Shephard,

2008). However, unfortunately, in Turkey, physical education and sports lessons, and even professions in this field, do not receive the necessary importance and as a result, no studies are carried out by the relevant ministries regarding the inadequacy of lesson hours.

When physical education and sports lessons are implemented for at least two hours per week, increasing physical activity can help achieve physical goals such as improving health, improving well-being and adopting a healthy lifestyle. Additionally, this lesson can positively influence students' personal characteristics such as body awareness, self-confidence in physical skills, general sense of well-being, sense of security, self-esteem, sense of responsibility, patience, courage and mental balance. A study found that children had high levels of physical activity during physical education and sports lessons. The results of this study show that somatic anxiety levels in children decrease after physical education and sports programs. In addition, this study stated that after physical education and sports programs, lower levels of depression, isolation, somatic complaints, aggression and criminal behavior were observed in children. These results show that an eight-month physical education program positively affects primary school children's physical activity levels and emotional well-being (Kliziene et al., 2021). A different study suggested that a 16-week physical activity program was not sufficient to reduce deviant behaviors of young people and that longer-term programs were needed for behavior change (Erkmen Hadi et al., 2023). Therefore, while there are study results in the literature that may support the current research results, it is seen that there are studies reporting results contrary to these results.

Studies have emphasized that while increasing the level of sports activity has a positive relationship with emotional health, physical inactivity is associated with emotional problems such as depression and anxiety (Donaldson & Ronan, 2006; Kantomaa et al., 2008). Based on this, it can be said that the results of this research indicate that young people can positively affect their mental health with regular physical activity.

Discussions about students' dissatisfaction, apathy, and actions seen as antisocial behavior in society are widely maintained in many different fields and disciplines (Sandford et al., 2006). In these discussions, a perception prevails that physical education and sports encourage prosocial behavior and respect for others (Eley et al., 2022). Therefore, it can be stated that physical education and sports lessons have a significant power in terms of involving students who are dissatisfied with school again (Bailey, 2005). However, a study by Ennis (1995) observed different maladaptive behaviors of students (e.g., wearing inappropriate clothing, disobedience, etc.), suggesting that physical education and sports lessons are meaningless in their current situation and have little relevance to students' daily lives. In another study, it was determined that students experienced high levels of fear in learning environments. However, this study found that physical education and sports programs generally contribute to reducing negative behaviors by prioritizing safety (Ennis et al., 1997). In this context, it is clearly seen that physical education and sports lessons can positively affect students' behavior.

Meta-analysis studies conducted using electronic research databases show that physical education and sports education have positive effects on students' emotional states (Espoz-Lazo, 2020; Cho, 2020). Additionally, a study found that students who do sports, passively participate in sports, and are physically active experience lower levels of negative emotions (Çakır, 2023). Differently, in another study, a moderately significant relationship was found between the physical activity level and sleep quality of secondary school students. Accordingly, it has been determined that increasing the level of physical activity increases the sleep quality of students (Kızılkoca & Tokgöz 2023). Based on this, it can be stated that physical education and sports lessons have an important place in students' learning and experiencing emotional states such as happiness, joy, pride, anxiety, despair, boredom, sadness, shame, anger, guilt, fear and surprise (Tjeerdsma, 1999). This discipline, which is an important tool in educating students who have

emotional behavioral problems (Medcalf et al., 2006), also contributes to increasing emotional intelligence levels (Siskos et al., 2011; Rico-González, 2023).

Finally, it can be stated that the physical activities in which students participate in physical education and sports lessons are of great importance in terms of their psychomotor development. For this reason, movement should be at the center of students' lives. With the slogan “I Move, Therefore I Am” (Seitz, 1993), it is thought that it is important for school administrations and physical education and sports teachers to carry out sensitive studies on this issue. This effort will allow positive development of students in many aspects and will lead to constructive results on their learning processes (Abate et al., 2020).

As can be seen, it can be stated that the results of the current research overlap with the results of related studies in the literature. However, results that do not coincide with the existing research results have been found in the literature. For example, physical education and sports lessons do not cause any change in the physical development of students.

Conclusion

As a result, physical education and sports lessons make significant contributions to the social, physical, mental, emotional, psychomotor and cognitive development of students. This lesson provides students with various skills that they can use throughout their lives and contributes to the development of healthy, balanced individuals. In this context, the research results reveal that physical education and sports lessons should be emphasized more in the education system.

Recommendation

- Educational institutions should conduct regular assessments and enhancements of their physical education and sports programs. The responsibility for these evaluations should be shared among school administrators and physical education instructors.
- Drawing upon the findings of academic research, the relevant ministries and school administrations within the Republic of Turkey should recognize the significance of physical education and sports and provide support for initiatives in this domain. In this regard, these governing bodies should allocate increased resources to enrich the physical education and sports curricula, thereby promoting and strengthening these programs.
- Compared to other countries, it is seen that physical education and sports lesson time is insufficient in Turkey. In this context, relevant institutions and organizations, especially the Ministry of National Education, need to work on increasing lesson hours. This situation is thought to be important in terms of providing opportunities for students' development in all developmental areas.
- In order to eliminate the negative perception towards physical education and sports discipline and to ensure that this discipline is positioned in the place it deserves, school administrations and physical education and sports teachers need to organize encouraging activities to encourage the participation of families during physical education and sports activities in schools. It is thought that this effort may help eliminate existing prejudices regarding this disciplinary field.
- Local authorities, sports clubs, and voluntary organizations should establish collaborative efforts to enhance the accessibility of sports facilities and activities within the community. This measure is anticipated to facilitate greater engagement of children and youth in sporting activities.

Limitations

The data obtained;

- Opinions of 29 physical education and sports teachers working in different provinces of Turkey,
- It is limited to a single question in the semi-structured interview form.

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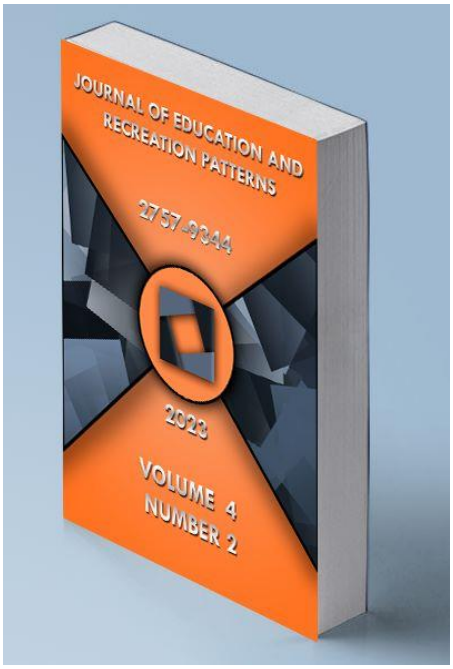
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Erhan BUYRUKOĞLU[1], Mehmet ÖZDEMİR[2], Aydan YURTSEVER[3]

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[1] Erhan Buyrukoğlu, Aydın Adnan Menderes University, Faculty of Sport Sciences, Aydın/ Turkey, erhanbuyrukoglu@gmail.com, https://orcid.org/0000-0002-8456-9270

[2] Mehmet Özdemir, Aydın Adnan Menderes University, Faculty of Sport Sciences, Aydın/ Turkey, ozdemirim69@gmail.com, https://orcid.org/0000-0003-2213-6403

[3] Aydan Yurtsever, Aydın Adnan Menderes University, Faculty of Sport Sciences, Aydın/ Turkey, aydanyurtsever09@gmail.com, https://orcid.org/0009-0008-5025-7054

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Analysis of Anxiety Status of Faculty of Sports Sciences Graduates before Taking the Public Personnel Selection Examination (KPSS)

Erhan Buyrukoğlu[1], Mehmet Özdemir[2], Aydan Yurtsever[3]

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ABSTRACT

With the decrease in job opportunities in different sectors, it also brings anxiety in individuals. In daily life, individuals are mentally and emotionally affected as well as being affected by the social environment network they are in. This situation of future anxiety in individuals is seen to cause exam anxiety in those who will take the exam. In order to examine the exam anxiety that occurs as a result of future anxiety, it was aimed to determine the anxiety status of individuals who graduated from the faculty of sport sciences before taking the public personnel selection exam (KPSS). The sample of the research consists of 134 individuals graduated from the faculty of sport sciences who will take the 2023 public personnel selection exam (KPSS). The descriptive survey model was used to reach the result by investigating the current situation in the specified subject. The "KPSS Anxiety Scale" developed by Karaçanta (2009), personal information (age, gender, educational status, monthly income, department, did you take formation, attending KPSS course, KPSS study period) were used. In the data analysis, kurtosis skewness calculations, frequency, percentage calculations, reliability analysis and manova analysis for multiple variables were performed using SPSS 25.0 package programme. As a result of the statistical analysis; Among the demographic information, 26-28 years old (33.6%) in the age variable, female participants (67.2%) in the gender variable, bachelor's degree graduates (76.1%) in the education status variable, 1500 TL and below (43.3%) in the monthly income status variable, teaching and management departments (25%) in the department variable, 4), the participants who received formation in the variable of receiving formation (74,6%), the participants who did not attend the course in the variable of attending KPSS course (81,3%) and the participants who have been working for 1-5 months in the KPSS study period (53%). Considering the Public Personnel Selection Examination Anxiety levels, no significant difference was observed in the statistically obtained data results in the variables of age, economic income, graduated department, pedagogical formation training certificate and course attendance, while it was observed that the anxiety level was high in the future anxiety sub-dimension in males in the gender variable, in the bachelor's degree graduates in the graduation status variable, and in the KPSS study duration sub-dimension in individuals who prepared for KPSS for 11 months or more.

Keywords: Anxiety, Graduate, Public Personnel Selection Examination, Sports Sciences

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INTRODUCTION

The exam, which is a tool for measuring the success of individuals, is a very widely used method in our country (Softa et al., 2015). Exams, which are an important part of people's lives, are of great importance to investigate and define the anxiety caused by exams as well as increasing academic success. It is stated as a result of scientific studies that exam anxiety greatly affects people's academic success (Koçyiğit, 2023). While Cüceloğlu (2005) gives the definition of anxiety to the mental and emotional reactions of individuals to stimuli according to their anxiety levels, Onukwufor and Ugwu (2017) define the fear, anxiety and restlessness experienced before the exam as exam anxiety. The fact that individuals are anxious during the exam preparation process and during the exam is considered as a psychological condition (Pagaria, 2020). It was first officially expressed by George Mandler and Seymour Sarason in 1952 in their study titled "a study on anxiety and learning". In order to increase the performance of students, it is necessary to reduce their high level of anxiety and to get away from the negativities that cause anxiety (Yıldırım, 2008). Therefore, in this study, the concept of anxiety and exam anxiety were analysed.

When anxiety is examined in the literature, it can be seen that it is associated with the concepts of fear, curiosity and worry in general. Reactionary movements of individuals against internal and environmental stimuli are called anxiety (Eker, 2016). Anxiety is a state of psychological concern that individuals feel towards a future time period other than the current time (Kaya & Varol, 2004). In general, anxiety states are defined as a psychological state that occurs when individuals approach the end of a planned period while acting in line with the plans they have made for the future process (Mete et al., 2015).

Apart from the graduates of physical education teaching department, faculty of sport sciences graduates can also become physical education teachers by taking pedagogical formation education from faculties of education. In addition, graduates of sports management, recreation and coaching departments work in sports departments in public institutions and organizations by taking the KPSS. Individuals who graduate from the faculty of sports sciences must be successful in KPSS to do these. This situation turns into exam anxiety and/or future anxiety in individuals who will take the KPSS exam (Çakmak, 2007; Kabalcı, 2008; Kurt, 2006; Tümkaya et al., 2007). Anxiety brings along psychological problems. Individuals usually experience these psychological anxiety states to a great extent in the periods before the exam. When the studies in the literature are examined, it can be seen that the general opinion is that anxiety is the main cause of individuals' psychological problems (Akten, 2007; Arslan & Aslan, 2014; Çapulcuoğlu & Gündüz, 2013; Güdük et al., 2005; Küçüksüleymanoğlu & Eğilmez, 2013; Maslach et al., 2001; Tümkaya & Çavuşoğlu, 2010).

Individuals who graduate from the field of sports sciences may have a negative attitude towards the type of profession due to the differences in the department they will work in. This situation causes anxiety in KPSS, which is held for public institutions in our country before individuals take a job. Individuals are required to be successful in KPSS related to the department they graduated from and to enter the ranking within a certain quota.

Individuals are in a race to get in a certain ranking and get points. The high number of competitors in the race causes individuals to experience increased anxiety before the KPSS exam. This situation has been observed in the studies conducted in literature which show that individuals have high levels of anxiety during the upcoming period before taking KPSS (Chapell et al., 2005; Gizir, 2007; Karaca, 2011; Spirito & Lewander, 2004; Tansel, 2015; Yavuz & Akdeniz, 2019). When the studies in the literature are examined, it is thought that there is a small number of studies on pre-KPSS anxiety in the field of sports sciences and that our research will serve as an example for similar studies.

KPSS is one of the most important central exams among the exams held in Turkey. KPSS, which is held once a year, is an exam that determines the future of thousands of individuals. In developed countries, there is no exam like the KPSS exam in Turkey. In general, it is seen that exams are addressed to a single segment and continuous exams are held in developed countries. As a result of scientific studies, it is stated that such exams affect a large part of individuals' lives. Baştürk (2005) refers to the continuous exams in developed countries as fate exams. As a fateful exam, Baştürk (2005) explained the factors caused by the current state of exam anxiety by analysing the successful or unsuccessful aspects of individuals. In the KPSS exam, the relationships between gender, age, department, KPSS study period, family economic income status are expressed as the biggest factors in the formation of individuals' anxiety before taking the KPSS exam. As a result of all these situations and explanations, analysis of anxiety status of faculty of sports sciences graduates before taking the public personnel selection examination (KPSS) research will be a research of great importance in sports sciences and other fields.

METHOD

Research Model

Descriptive survey model, which is used for research aimed at determining any situation in a subject, was used in our research (Karasar, 2015).

Population and Sample of the Study

The sample consisted of 134 individuals who graduated from the departments of physical education teaching, coaching, recreation and sport management in the faculty of sport sciences.

Data Collection Tools

In our study, research data were obtained on a voluntary basis by reaching individuals who graduated from the faculty of sport sciences through Google Forum. A total of 140 participants were reached, and whether multivariate normality assumption and the outliers were met was analysed with the help of Mahalanobis distance value, 6 data showing outlier extreme values were removed from the data set and statistical analyses of 134 individuals were performed. Personal Information Form created by the researchers and the "KPSS Anxiety Scale" developed by Karaçanta (2009) were used in our study.

Personal Information Form: An 8-question form created by the researchers was used, which included the participants' age, gender, educational status, monthly income, department, whether they had pedagogical formation training, whether they had attended KPSS courses, and the duration of studying for KPSS.

KPSS Anxiety Scale: The scale developed by Karaçanta (2009) consists of 19 items and 4 sub-dimensions (Exam Preparation, Concerns about the Future, General Anxiety, Concerns about How You See Yourself and How Others See You). The scale is a 5-point Likert type scale and negative items are reversely scored.

Data Analysis

SPSS 25.0 package program was used for data analysis in our study, and multivariate normality assumptions and outliers were examined with the help of Mahalanobis distance values, 6 data were excluded from the data set, Kurtosis Skewness coefficient was found to be between -2 and + 2 and parametric tests were used in the analysis of the data (George & Malley, 2010).

FINDINGS

Age, Gender, Educational status in the findings section of our research Monthly income, Department, and Do you have pedagogic formation? Did you attend KPSS course? How long have you studied for KPSS?, Multivariate normality assumptions and outliers were examined with the help of Mahalanobis distance values, 6 data were excluded from the data set, the Skewness Skewness coefficient was found between -2 and + 2 and parametric tests were applied in the analysis of the data. Statistical results related to Analysis of Anxiety Status of Faculty of Sports Sciences Graduates Before Taking the Public Personnel Selection Examination (KPSS) are given in the tables below.

Table 1. Demographic Information of Participants

Variables	Group	f	%
Age	≤22 years	15	11.2
	23-25 years	41	30.6
	26-28 years	45	33.6
	29-31 years	33	24.6
Gender	Female	90	67.2
	Male	44	32.8
Educational status	Undergraduate	102	76.1
	Postgraduate	32	23.9
Monthly income	≥8500 ₺	58	43.3
	8501-9000 ₺	8	6.0
	9001-10500 ₺	10	7.5
	10501-11000 ₺	8	6.0
	≥11001 ₺	50	37.3
Department	Physical education teaching	34	25.4
	Sport management	34	25.4
	Coaching	33	24.6
	Recreation	33	24.6
Do you have pedagogic formation?	Yes	100	74.6
	No	34	25.4
Did you attend KPSS course?	Yes	25	18.7
	No	109	81.3
How long have you studied for KPSS?	1-5 months	71	53.0
	6-10 months	31	23.1
	≥11 months	32	23.9
Total		134	100

It can be seen in Table 1 that the highest rates in categorical variables are as follows: 26-28 years (33.6%) in the age variable, female participants (67.2%) in the gender variable, undergraduate degree (76.1%) in the education level variable, and ≤1500 TL (43.3%) in the monthly income variable, physical education teaching and sport management department (25.4%) in the department variable, participants who received pedagogic formation (74.6%), participants who did not attend KPSS courses (81.3%), and participants who had been studying for KPSS for 1-5 months (53%).

Table 2. KPSS Anxiety Scale Normality Analysis Results

Sub-dimensions	Cronbach Alpha
General Anxiety	,857
Concerns about How You See Yourself and How Others See You	,743
Concerns about the future	,621
Exam Preparation	,613
KPSS-AS	,897

Table 2 shows the results of the reliability analysis of the scale and its sub-dimensions. It was concluded that concerns about the future and exam preparation sub-dimensions had low reliability, while general anxiety, concerns about how you see yourself and how others see you, and the total score of the scale had high reliability.

Table 3. Descriptive Values of KPSS Anxiety Scale and Sub-Dimensions

Variables	$\bar{x}$	Sd	Kurtosis	Skewness
General Anxiety	2,53	,52	,371	,351
Concerns about How You See Yourself and How Others See You	2,54	,64	-,067	-,078
Concerns about the future	3,27	,86	-,362	-,210
Exam Preparation	3,16	,73	,122	,011
KPSS-AS	2,75	,42	,061	-,326

Table 3 shows that the participants' scale mean score and arithmetic mean scores of all sub-dimensions are at a moderate level.

Table 4. Manova Analysis Results of Public Personnel Selection Examination Anxiety Levels of Faculty of Sport Sciences Graduates in terms of the variable of age

Sub-dimensions	Age	N	$\bar{X}$	Sd	F	p
General Anxiety	≤22 years	15	2,31	,40	2,205	,091
	23-25 years	41	2,60	,48		
	26-28 years	45	2,43	,48		
	29-31 years	33	2,65	,64		
Concerns about How You See Yourself and How Others See You	≤22 years	15	2,58	,63	,422	,738
	23-25 years	41	2,45	,65		
	26-28 years	45	2,56	,63		
	29-31 years	33	2,62	,68		
Concerns about the future	≤22 years	15	3,08	,75	1,114	,346
	23-25 years	41	3,42	,76		
	26-28 years	45	3,31	,93		
	29-31 years	33	3,10	,92		
Exam Preparation	≤22 years	15	3,00	,64	,304	,823
	23-25 years	41	3,21	,71		
	26-28 years	45	3,17	,74		
	29-31 years	33	3,17	,79		

KPSS-AS	≤22 years	15	2,60	,33	,997	,396
	23-25 years	41	2,80	,40		
	26-28 years	45	2,71	,41		
	29-31 years	33	2,79	,50		

p<0,05*

Table 4 shows that there is no statistically significant difference in the results of manova analysis between public personnel selection exam anxiety levels and age of the participants (p>0.05).

Table 5. Manova Analysis Results of Public Personnel Selection Examination Anxiety Levels of Faculty of Sport Sciences Graduates in terms of the Variable of Gender

Sub-dimensions	**Gender**	$\bar{X}$	**Sd**	**N**	**F**	**p**
General Anxiety	Female	2,54	,50	90	,219	,640
	Male	2,50	,57	44		
Concerns about How You See Yourself and How Others See You	Female	2,44	,63	90	7,108	**,009***
	Male	2,75	,63	44		
Concerns about the future	Female	3,33	,78	90	1,596	,209
	Male	3,13	1,00	44		
Exam Preparation	Female	3,23	,72	90	2,733	,101
	Male	3,01	,73	44		
KPSS-AS	Female	2,75	,40	90	,083	,773
	Male	2,73	,48	44		

p<0,05*

Results of the manova analysis between public personnel selection exam anxiety levels and gender of the participants in Table 5 show that there is a statistically significant difference in favour of male participants only in the sub-dimension of concerns about the future (p<0.05).

Table 6. Manova Analysis Results of Public Personnel Selection Examination Anxiety Levels of Faculty of Sport Sciences Graduates in terms of the Variable of Educational Status

Sub-dimensions	**Educational status**	$\bar{X}$	**Sd**	**N**	**F**	**p**
General Anxiety	Undergraduate	2,53	,53	102	,000	,994
	Postgraduate	2,53	,50	32		
Concerns about How You See Yourself and How Others See You	Undergraduate	2,57	,62	102	,732	,394
	Postgraduate	2,46	,71	32		
Concerns about the future	Undergraduate	3,37	,84	102	6,090	**,015***
	Postgraduate	2,94	,85	32		
Exam preparation	Undergraduate	3,22	,75	102	3,362	,069
	Postgraduate	2,95	,63	32		
KPSS-AS	Undergraduate	2,78	,40	102	2,370	,126
	Postgraduate	2,64	,48	32		

p<0,05*

Results of the manova analysis between public personnel selection exam anxiety levels and educational status of the participants in Table 6 show that there is a statistically significant difference in favour of participants with undergraduate degree only in the sub-dimension of concerns about the future ($p<0.05$).

Table 7. Manova Analysis Results of Public Personnel Selection Examination Anxiety Levels of Faculty of Sport Sciences Graduates in terms of the Variable of Monthly Income

Sub-dimensions	Income	N	$\overline{X}$	Sd	F	p
General Anxiety	≥8500 ₺	58	2,52	,53	1,265	,287
	8501-9000 ₺	8	2,79	,37		
	9001-10500 ₺	10	2,73	,58		
	10501-11000 ₺	8	2,62	,35		
	≥11001 ₺	58	2,44	,54		
Concerns about How You See Yourself and How Others See You	≥8500 ₺	8	2,50	,65	,679	,608
	8501-9000 ₺	10	2,53	,57		
	9001-10500 ₺	8	2,57	,47		
	10501-11000 ₺	58	2,90	,22		
	≥11001 ₺	8	2,53	,72		
Concerns about the future	≥8500 ₺	10	3,31	,91	1,584	,182
	8501-9000 ₺	8	3,08	,77		
	9001-10500 ₺	58	3,83	,52		
	10501-11000 ₺	8	3,37	1,09		
	≥11001 ₺	10	3,12	,81		
Exam preparation	≥8500 ₺	8	3,02	,70	1,764	,140
	8501-9000 ₺	58	3,50	,35		
	9001-10500 ₺	8	3,56	,54		
	10501-11000 ₺	10	3,20	,87		
	≥11001 ₺	8	3,18	,79		
KPSS-AS	≥8500 ₺	58	2,72	,44	1,698	,154
	8501-9000 ₺	8	2,89	,26		
	9001-10500 ₺	10	3,00	,38		
	10501-11000 ₺	8	2,89	,27		
	≥11001 ₺	58	2,68	,44		

p<0,05*

Table 7 shows that there is no statistically significant difference in the results of manova analysis between public personnel selection exam anxiety levels and monthly income of the participants ($p>0.05$).

Table 8. Manova Analysis Results of Public Personnel Selection Examination Anxiety Levels of Faculty of Sport Sciences Graduates in terms of the Variable of Department

Sub-dimensions	Department	N	$\bar{X}$	Sd	F	p
General Anxiety	Physical education teaching	34	2,61	,55	1,063	,367
	Sport management	34	2,39	,48		
	Coaching	33	2,57	,55		
	Recreation	33	2,53	,51		
Concerns about How You See Yourself and How Others See You	Physical education teaching	34	2,59	,60	,253	,859
	Sport management	34	2,53	,68		
	Coaching	33	2,46	,74		
	Recreation	33	2,58	,58		
Concerns about the future	Physical education teaching	34	3,43	,76	1,168	,325
	Sport management	34	3,35	,85		
	Coaching	33	3,06	,99		
	Recreation	33	3,23	,83		
Exam Preparation	Physical education teaching	34	3,27	,77	1,167	,325
	Sport management	34	3,13	,53		
	Coaching	33	2,97	,78		
	Recreation	33	3,26	,80		
KPSS-AS	Physical education teaching	34	2,84	,41	,910	,438
	Sport management	34	2,69	,36		
	Coaching	33	2,69	,53		
	Recreation	33	2,77	,37		

p<0,05*

Table 8 shows that there is no statistically significant difference in the results of manova analysis between public personnel selection exam anxiety levels and department of the participants (p>0.05).

Table 9. Manova Analysis Results of Public Personnel Selection Examination Anxiety Levels of Faculty of Sport Sciences Graduates in terms of the Variable of Having Pedagogic Formation.

Sub-dimensions	Formation	$\bar{X}$	Sd	N	F	p
General Anxiety	Yes	2,50	,51	100	1,054	,306
	No	2,61	,55	34		
Concerns about How You See Yourself and How Others See You	Yes	2,53	,66	100	,258	,613
	No	2,59	,60	34		
Concerns about the future	Yes	3,21	,89	100	1,569	,213
	No	3,43	,76	34		
Exam Preparation	Yes	3,12	,71	100	1,029	,312
	No	3,27	,77	34		
KPSSAS	Yes	2,72	,43	100	2,074	,152
	No	2,84	,41	34		

p<0,05*

Table 9 shows that there is no statistically significant difference in the results of manova analysis between participants' public personnel selection exam anxiety levels and the state of having pedagogic formation (p>0.05).

Table 10. Manova Analysis Results of Public Personnel Selection Examination Anxiety Levels of Faculty of Sport Sciences Graduates in terms of the Variable of Attending KPSS Course.

Sub-dimensions	Course	$\bar{X}$	Sd	N	F	p
General Anxiety	Yes	2,54	,36	25	,015	,904
	No	2,52	,56	109		
Concerns about How You See Yourself and How Others See You	Yes	2,68	,60	25	1,301	,256
	No	2,51	,65	109		
Concerns about the future	Yes	3,32	,89	25	,097	,756
	No	3,25	,86	109		
Exam preparation	Yes	3,08	,72	25	,402	,527
	No	3,18	,73	109		
KPSS-AS	Yes	2,77	,34	25	,130	,719
	No	2,74	,44	109		

p<0,05*

Table 10 shows that there is no statistically significant difference in the results of manova analysis between participants' public personnel selection exam anxiety levels and the state of attending KPSS course (p>0.05).

Table 11. Manova Analysis Results of Public Personnel Selection Examination Anxiety Levels of Faculty of Sport Sciences Graduates in terms of the Variable of Time Spent Studying for KPSS

Sub-dimensions	Time spent	N	$\bar{X}$	Sd	F	p	Bonferonni
General Anxiety	1-5 months	71	2,40	,52	5,184	**,007***	3>1
	6-10 months	31	2,58	,46			
	≥11 months	32	2,75	,51			
Concerns about How You See Yourself and How Others See You	1-5 months	71	2,48	,62	1,038	,357	-
	6-10 months	31	2,53	,73			
	≥11 months	32	2,68	,62			
Concerns about the future	1-5 months	71	3,17	,84	1,098	,337	-
	6-10 months	31	3,32	,98			
	≥11 months	32	3,43	,77			
Exam preparation	1-5 months	71	3,29	,74	2,563	,081	-
	6-10 months	31	2,97	,73			
	≥11 months	32	3,05	,66			
KPSS-AS	1-5 months	71	2,68	,40	2,644	,075	-
	6-10 months	31	2,75	,49			
	≥11 months	32	2,89	,38			

p<0,05*

Results of the manova analysis between public personnel selection exam anxiety levels of the participants and the time spent studying for KPSS in Table 11 show that there is a statistically significant difference in the sub-dimension of general anxiety (p<0.05). In

Bonferroni analysis conducted to find out the source of the difference, it was concluded that the participants who had studied for KPSS for 11 months and longer had higher general anxiety levels that the participants who had studied for KPSS for 11 months and longer.

DISCUSSION & CONCLUSION

The aim of our study was to examine the anxiety levels of faculty of sport sciences graduates before taking the public personnel selection exam (KPSS). The statistical results of the variables of gender, age, educational status, income status, department, having received pedagogical formation education, attending KPSS course and time spent studying for KPSS are explained below.

When the statistical analyses of the participants who volunteered to participate in the study were examined in terms of demographic variables, the results were found to be in favour of female participants (n=90, 67.2%) in the variable of gender, in favour of postgraduate participants (n=32, 23.9%) in terms of the variable of educational status, in favour of participants between the ages of 26 and 28 (n= 45, 33.6%) in terms of the variable of age, in favour of the participants whose departments were sports management and physical training education (n=34, 25.4% each) in terms of the variable of department, in favour of the participants who had received pedagogic formation training (n=100, 76.4%), in favour of the participants who attended KPSS course (n=109 81.3%), in favour of the participants who studied for KPSS for 1-5 months (n=71, 53.0%) and in favour of the participants whose monthly income level was 8500 TL and less (n= 58 43.3%) (Table 1).

In studies conducted in literature on KPSS anxiety levels, no statistically significant difference was found in terms of the variable of gender (Bozdam, 2008; Çoşkun, Zengin & Arslan, 2021; Dursun & Karagün, 2012; Gözel, 2009; Ifeagwazi, 2006; Küçüksüleymanoğlu & Eğilmez; 2013, Özdayı, 2000; Sadıkoğlu, Hastürk & Polat, 2018;Tümkaya & Çavuşoğlu, 2010; Yavuz & Akdeniz, 2019;). Yalçın (2022) conducted a study on university students and found that anxiety was higher in males. In our study, statistically significant difference was found between KPSS anxiety levels and the variable of gender in the sub-dimension of concerns about the future in favour of male participants (Table 5). It was found that studies by Yılmazer, 2017; Şimşek & Akgün, 2014; Erözkan, 2004; Dündar, Yapıcı & Topcu, 2008; Chapell et al., 2005; Erçoşkun et al., 2005; Ergün 2005; Dilekmen, Ercoşkun & Nalçacı, 2005; Sarıgül, 2000; Alyaprak, 2006; Saban et al., 2004 were in parallel with the results of our study. We can say that the results of these studies support the results of our study.

As a result of the analysis between KPSS anxiety levels and the variable of age in Table 4, no statistically significant difference was found. However, statistically significant difference was found in Odabaş's study in 2010, Çınar's study in 2018 and Uyduran's study in 2014.

As a result of the statistical analysis between KPSS anxiety levels and the variable of level of education, statistically significant difference was found in favour of undergraduate participants in the sub-dimension of concerns about the future. In their study they conducted in 2001, Akçamete, Kaner and Sucuoğlu found that anxiety levels may be high in terms of the variable of level of education.

Yazıcı et al. (2023) examined the relationship between job finding anxiety and life satisfaction in their research and concluded that life satisfaction affects job finding anxiety. Ekizoğlu (2023) concluded that the reason for the increase in self-efficacy scores in the research he conducted on the students of the Faculty of Sports Sciences is related to the increase in anxiety.

No statistically significant difference was found between the participants' KPSS anxiety levels and the variables of department, the status of having received pedagogic formation, and the status of attending KPSS course (Table 8, Table 9, Table 10).

No statistically significant difference was found between the income status variable and the anxiety levels of the participants in the public personnel selection exam as can be seen in Table 7. Likewise, no statistically significant difference was found in the studies conducted by Çoşkun, Zengin, & Arslan, 2021; Kilit et al., 2020; Özcan, 2018; Türkan, 2018; Özsarı, 2008 in the literature. We can say that these results support the data of our research.

In Table 11, the analysis between the anxiety levels of the participants in the public personnel selection exam and the variable of time participants studied for KPSS shows that there is a statistically significant difference in the general anxiety sub-dimension for those who had been studying for KPSS for 11 months or more. According to the results of the analysis, we can say that the prolongation of the KPSS study period increases the anxiety level of individuals studying for KPSS. As a conclusion, when demographic information is taken into consideration, there is no significant difference in the statistically obtained data results in the variables of age, monthly income, department, having pedagogical formation training certificate and attending course, while it is seen that the anxiety level is high in the concerns about the future sub-dimension in males in the gender variable, in participants with undergraduate degree in the graduation status variable, and in the time spent studying for KPSS variables in individuals who had been preparing for KPSS for 11 months or more.

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