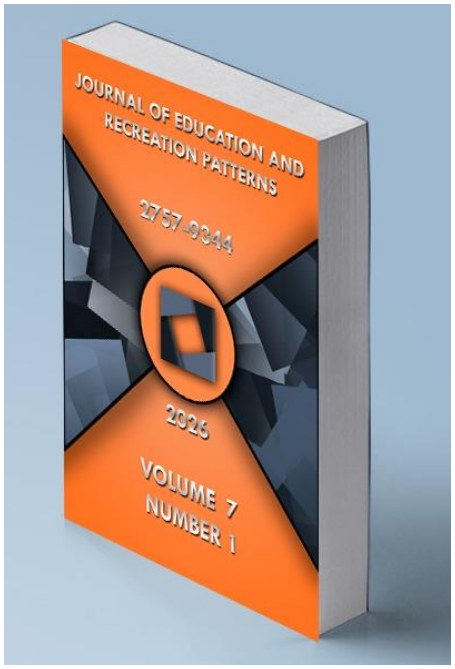

Journal of Education and Recreation Patterns (JERP)

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Dance-Based Interventions and Cognitive-Emotional Outcomes: A Scoping Review of Potential Implications for Sport Psychology

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To cite this article:

Ağaoğlu Topçu, C. (2026). Dance-based interventions and cognitive-emotional outcomes: A scoping review of potential implications for sport psychology. *Journal of Education and Recreation Patterns (JERP), 7*(1), 160-174. DOI: https://doi.org/10.53016/jerp.v7i1.344

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***Note:** "Dans ve Spor Psikolojisi Dansın Bilişsel ve Duygusal Faydaları'' presented at the 8th International Congress of Exercise and Sports Psychology, İstanbul, 2025.

Journal of Education and Recreation Patterns (JERP)
Volume 7, Issue 1, Year 2026 ISSN: 2757-9344

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ARTICLE INFORMATION
Original Research Paper

Received 03.05. 2026
Accepted 30.06. 2026

https://jerpatterns.com

June, 2026

Volume: 7, No: 1

Pages: 160-174

ABSTRACT

This scoping review maps current evidence on dance-related cognitive and emotional outcomes and explores their potential relevance for sport psychology contexts. Following PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) guidelines, a comprehensive literature search was conducted through PubMed, PsycINFO, Scopus, and Web of Science databases for studies published between January 2010 and May 2024. A total of 12 eligible sources were included in the qualitative synthesis. Methodological quality was appraised using the Joanna Briggs Institute (JBI) Critical Appraisal Tools. The included evidence suggests that dance-based interventions may be associated with improvements in cognitive domains (memory, attention, executive functions, decision-making speed) and psychological dimensions (motivation, self-efficacy, stress management, emotional well-being). Group dance interventions may support social connectedness, whereas individual dance practices may facilitate self-expression and intrinsic motivation. However, the evidence base is heterogeneous, and importantly, none of the included studies recruited competitive athletes; most sources involved older adults or mixed adult populations. Therefore, while dance may have potential implications for sport psychology as a complementary activity, conclusions regarding athletic performance should be interpreted with considerable caution and require validation through athlete-specific trials. This review maps the available evidence and identifies key gaps for future research rather than providing direct evidence for sport-specific outcomes.

Keywords: Cognitive Functions, Dance-Based Interventions, Emotional Well-being, Scoping Review, Sport Psychology.

INTRODUCTION

Throughout human history, dance has been not only a form of aesthetic expression but also a fundamental element of social communication, cultural transmission, and cognitive development (Quiroga Murcia et al., 2010; Koch et al., 2014). From an evolutionary perspective, rhythmic movements are suggested to strengthen in-group bonds and increase social cohesion. Throughout history, dance has been an integral part of ritual, celebration, and learning processes in many societies (Christensen & Calvo-Merino, 2013).

Today, dance is an intensively researched topic in the fields of health and psychology, beyond its artistic and recreational purposes. Especially in the last decade, studies have suggested that dance is not only a physical activity but may also be associated with cognitive functions, emotional well-being, and social connectedness (Teixeira-Machado et al., 2019; Bräuninger, 2014; Koch et al., 2014).

Within the framework of cognitive reserve theory, complex motor activities such as dance are suggested to support synaptic plasticity and may help slow age-related cognitive decline (Stern, 2012). Various neuroimaging studies have reported that dance is associated with increased activity in brain regions such as the prefrontal cortex, motor cortex, and hippocampus, and that this may contribute to improvements in attention, memory, and executive functions (Rehfeld et al., 2017; Wu et al., 2021).

In the context of sport psychology, dance may offer multidimensional benefits including coordination of motor skills, support for decision-making processes, attentional focus, and motivational processes. However, the mechanisms by which dance may influence sport-specific psychological outcomes remain under-investigated, and evidence derived specifically from competitive athlete populations is limited (Teixeira-Machado et al., 2019; Koch et al., 2014).

Moreover, dance-based interventions have been examined in areas relevant to sport psychology, such as stress management, emotional regulation, and mental focus. Recent research suggests that group dance may enhance social support and team spirit, while individual dance may improve self-expression and intrinsic motivation (Christensen & Calvo-Merino, 2013; Koch et al., 2014).

However, studies on the integration of dance and sport psychology are still limited in literature. There is a lack of long-term, randomized controlled studies on elite athletes and different age groups. Existing studies have generally focused on older individuals and amateur populations (Barone et al., 2017).

In this context, the present scoping review aims to map and synthesize current evidence on dance-related cognitive and emotional outcomes, and to discuss their potential relevance for sport psychology contexts. This review explicitly acknowledges the heterogeneity of the available evidence and the limited direct applicability of findings from non-athlete populations to competitive sport contexts. Rather than providing direct evidence for athletic performance, this review maps existing evidence and identifies gaps in the athlete-specific literature.

This review aims to answer the following research questions:

(1) What cognitive and emotional outcomes have been associated with dance-based interventions in empirical and synthesized literature?

(2) How may these outcomes be potentially relevant to sport psychology practice, given the current evidence base?

(3) What gaps exist in the evidence base, particularly regarding competitive athlete populations?

METHOD

This study is a scoping review evaluating the effects of dance on cognitive functions and psychological factors. The term "scoping review" here refers to the synthesis approach, which maps the breadth of available evidence rather than conducting a quantitative meta-analysis. To ensure transparency and reproducibility, the review was conducted in accordance with PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) guidelines (Tricco et al., 2018), following the methodological framework described by Arksey and O'Malley (2005) and refined by Levac et al. (2010).

1. Database and Search Strategy

PubMed (MEDLINE), PsycINFO, Scopus, and Web of Science databases were searched. The search covered the period between January 1, 2010, and May 31, 2024, and was limited to peer-reviewed articles published in English or Turkish. Boolean operators (AND, OR) and, where applicable, controlled vocabulary (MeSH terms in PubMed) were used. The database-specific search strings were as follows. PubMed: ("dance"[MeSH] OR "dance therapy"[MeSH] OR dance*[tiab]) AND (cognition [MeSH] OR memory[tiab] OR attention[tiab] OR "executive function"[tiab] OR "decision making"[tiab]) AND ("sports"[MeSH] OR athlet*[tiab] OR motivation[tiab] OR resilience[tiab] OR "emotional well-being"[tiab]). PsycINFO and Scopus: TITLE-ABS-KEY ((dance OR "dance intervention" OR "dance therapy") AND (cognition OR memory OR attention OR "executive function" OR "decision making") AND ("sport psychology" OR athlete* OR motivation OR resilience OR "emotional well-being"). Web of Science: TS= ((dance OR "dance therapy") AND (cognit* OR memory OR attention OR "decision making") AND (sport* OR athlet* OR motivation OR resilience OR well-being)). Document types were restricted to journal articles and reviews; conference abstracts and book chapters were excluded.

2. Inclusion and Exclusion Criteria

Literature selection was based on the following criteria. Inclusion criteria: studies directly examining the effects of dance-based interventions on cognitive functions (memory, attention, executive functions) and/or psychological variables (self-confidence, stress management, motivation, mental resilience); experimental, quasi-experimental, observational, or synthesized evidence designs (e.g., systematic reviews, meta-analyses, or relevant review articles); healthy individuals, active athletes, or mixed non-clinical participants; findings interpretable in sport psychology terms; sources published in refereed academic journals; articles written in English or Turkish. Exclusion criteria: articles that are only theoretical discussions without empirical or synthesized data; studies focusing primarily on specific clinical populations not interpretable in sport psychology terms (e.g., neurological disorders, traumatic brain injury); case reports and pilot studies with small samples; non-full-text resources such as book chapters and conference abstracts.

Table 1

Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Experimental/quasi-experimental, observational, or synthesized evidence design	Purely theoretical discussion, case report, pilot study
Inclusion of dance-based intervention	Specific clinical populations not interpretable in sport psychology terms
Healthy adult, older adult, athlete, or mixed non-clinical participants	Child/adolescent-only studies unrelated to sport, motor learning, or psychological outcomes
Published in a refereed journal	Book chapter, congress abstract, non-full-text publication

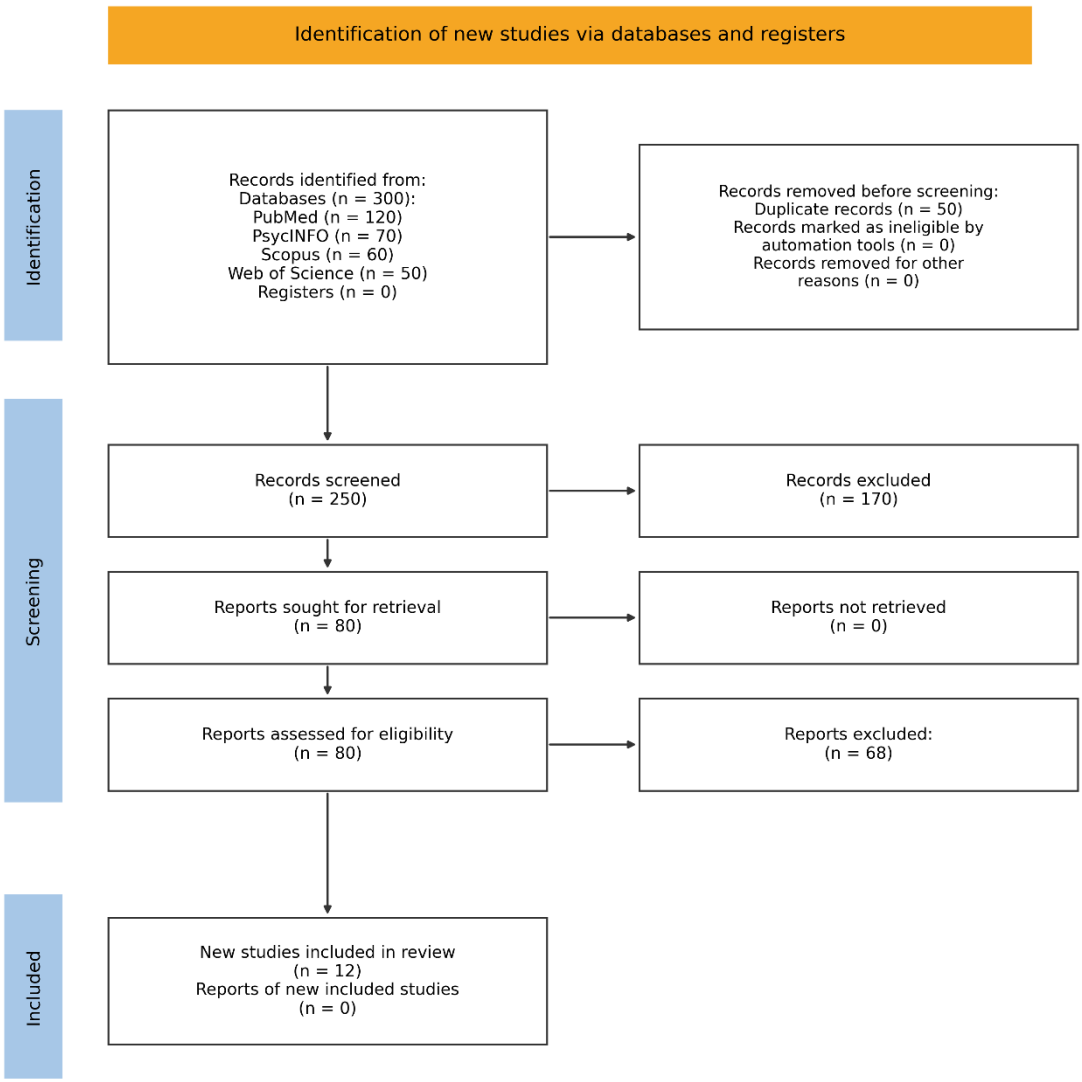
Note: Table 1 summarizes the criteria for inclusion and exclusion applied during the study selection process.

3. Article Selection Process

In the first stage, titles and abstracts were screened for eligibility. Full texts of potentially relevant articles were then assessed according to the inclusion and exclusion criteria. The selection process was conducted independently by two reviewers, and disagreements were resolved by a third reviewer. The literature search identified 300 records across the four databases. After removal of 50 duplicates, 250 records were screened by title and abstract, of which 170 were excluded. The remaining 80 full-text articles were assessed for eligibility. Full-text exclusions (n=68) were due to: absence of cognitive or psychological outcome measurement (n=32), focus on clinical populations not interpretable in sport psychology terms (n=15), purely theoretical discussion without empirical or synthesized data (n=12), and other reasons including publication type and language (n=9). The final synthesis included 12 sources. Both primary studies (n=11) and one synthesized-evidence source (review) were included; to avoid double-counting, findings from the review source were used only for conceptual mapping and were not aggregated with primary-study outcomes. The selection process is illustrated in the PRISMA 2020 flow diagram (Figure 1; see Haddaway et al., 2022).

Figure 1

PRISMA 2020 Flow Diagram of the Study Selection Process



Note: The PRISMA 2020 flow diagram illustrates the identification, screening, eligibility, and inclusion stages. A total of 300 records were identified, 50 duplicates were removed, 250 records were screened, 170 were excluded at the title/abstract stage, 80 full-text reports were sought for retrieval and assessed for eligibility, 68 were excluded with documented reasons, and 12 studies were included in the qualitative synthesis. The number of full-text reports sought for retrieval (n=80) is consistent with the number assessed for eligibility. The diagram was generated using the PRISMA2020 template (Haddaway et al., 2022).

4. Data Extraction and Analysis

The following data were systematically extracted from the included studies using a standardized extraction form: year and country of study; study design; participant profile (sample size, age, gender, athlete status, sport branch/activity level); type, frequency, and duration of dance intervention; comparison/control condition; assessment tools used (cognitive tests, psychological scales) and outcome measures; key statistical findings; and methodological quality rating. The findings were grouped by thematic analysis and reported under main themes: cognitive functions (memory, attention, executive functions, decision-making), psychological resilience (self-efficacy, motivation, stress management), and social adjustment and emotional well-being. A critical distinction was maintained throughout between (a) direct evidence from athlete samples, (b) indirect evidence from older adult or general adult populations, (c) evidence from dance therapy or clinical-adjacent contexts, and (d) review-based or theoretical evidence.

5. Quality Assessment

The methodological quality of the included studies was assessed using the Joanna Briggs Institute (JBI) Critical Appraisal Tools, with the specific checklist selected according to each study's design (e.g., the JBI checklist for randomized controlled trials, quasi-experimental studies, or analytical cross-sectional studies, as appropriate). Each study was rated on an ordinal scale (low, moderate, or high quality) based on criteria such as clarity of design, sample description, intervention standardization, validity of outcome measurement, and control of confounders. The study-level quality ratings are reported in the final column of the evidence table (Table 2). Most studies were of moderate to high quality; the most common limitations were small sample sizes and heterogeneous intervention durations, which restrict the generalizability of findings.

6. Ethical Assessment

This study does not require ethics committee approval as it was based solely on a review of the existing literature. Ethical rules were followed in all references, and care was taken in terms of originality and plagiarism

FINDINGS

1. Effects on Memory and Learning

The included sources suggest that dance may be associated with improvements in aspects of short- and long-term memory, particularly through learning complex choreography. Kattenstroth et al. (2013) reported that a six-month contemporary dance intervention in older adults was associated with improvements in postural and cognitive performance, including episodic and procedural memory. Similarly, Müller et al. (2017) found that hip-hop dance training was associated with improved verbal memory in young adults. The motor learning processes of dance may increase neuroplasticity and strengthen synaptic connections, particularly in the hippocampus (Teixeira-Machado et al., 2019). It should be noted, however, that these associations derive from older adult and young adult non-athlete samples; direct evidence from competitive athlete populations is absent. The main characteristics and findings of the studies included are summarized in Table 2.

Table 2

Main Characteristics and Findings of the Included Studies

Study (Year)	Country	Design	Participants (n; age; athlete status)	Dance Type	Duration / Frequency	Outcome Measures	Key Findings	JBI Quality
Kattenstroth et al. (2013)	Germany	RCT	n=35; >60 yrs; older adults (non-athletes)	Contemporary dance	6 months; 2×/week	Episodic & procedural memory; postural balance	Improvements in memory and balance; better cognitive flexibility vs. control	High
Müller et al. (2017)	Germany	Quasi-exp.	n=40; young adults (~23 yrs); non-athletes	Hip-hop	12 weeks; 3×/week	Verbal memory; motor performance	Improved verbal memory and motivation	Moderate
Bräuninger (2014)	Switzerland	RCT	n=20; adults (mixed); non-athletes (university students)	Group dance/DMT	8 weeks; 1×/week	Anxiety; self-efficacy; perceived social support	Improved stress management; increased social connectedness	High
Teixeira-Machado et al. (2019)	Brazil	Systematic review	Review of multiple samples; non-athlete focus	Various modalities	Not applicable	Neuroplasticity-related cognitive outcomes (synthesis)	Synthesized evidence on attention and executive function	Moderate
Wu et al. (2021)	China	Observational (fMRI)	n=38; 20–40 yrs; non-athlete adults	Modern dance	10 weeks	Prefrontal cortex activity; cognitive control	Increased prefrontal activity and cognitive control	Moderate
Kimura & Hozumi (2013)	Japan	Quasi-exp.	n=45; elderly; older adults (non-athletes)	Dance-based exercise	6 months	Decision-making time; reaction time	Improved decision-making speed vs. classical exercise	Moderate
Barone et al. (2017)	Italy	Cross-sectional	n=28; older adults; non-athletes	Ballroom dance	12 weeks	Memory; executive function; quality of life	Improved memory scores and executive function	Moderate
Rehfeld et al. (2017)	Germany	RCT	n=52; older adults (63–80 yrs); non-athletes	Structured dance program	18 months; 1×/week	Hippocampal volume; balance; executive function	Changes in hippocampal volume; improved balance and memory vs. fitness control	High
Quiroga Murcia et al. (2010)	Germany	Observational	n=70; mixed adults; non-athletes	Social dance	4 months	Psychological well-being; stress	Increased well-being; reduced stress	Moderate
Christensen & Calvo-Merino (2013)	UK	Observational	n=26; adult dancers; non-competitive (non-athletes)	Contemporary dance	10 weeks	Sensorimotor integration; movement perception	Sensorimotor integration relevant to movement perception and decision-making	Moderate
Schott & Klotz (2021)	Germany	RCT	n=30; older adults; non-athletes	Rhythmic dance	8 weeks	Coordination; motor learning; reaction time	Improved coordination, motor learning,	High

							and reaction time	
Karpati et al. (2015)	Canada	Narrative review	Review of dance-and-brain studies; non-athlete focus	Ballet/Modern dance	Not applicable	Visuospatial working memory; attention (synthesis)	Synthesized evidence on visuospatial working memory and attention	N/A (review)

Note: This table presents the design, participant characteristics (including athlete status), intervention details, outcome measures, key findings, and JBI quality ratings of the 12 included studies. Notably, none of the included studies recruited competitive athletes.

2. Attention and Cognitive Flexibility

Dance may contribute to the development of attention span and cognitive flexibility due to its complex movement patterns and rhythmic structure. Rehfeld et al. (2017) reported that dance training was associated with improvements in executive functions alongside changes in brain regions relevant to cognitive control. Coubard et al. (2011) found that contemporary dance improvisation was associated with improvements in attentional control and cognitive flexibility in older adults. In an fMRI study by Wu et al. (2021) using modern dance practice, increased prefrontal cortex activity and improved cognitive control functions were observed in young adults. As with memory outcomes, these findings derive primarily from non-athlete populations, which limits their direct applicability to sport performance contexts.

3. Decision-Making Mechanisms

Dance may support agile decision-making skills because it requires complex motor planning. Kimura and Hozumi (2013) found that dance-based exercises were associated with shortened decision-making time in older adults. Karpati et al. (2015) also reported that motor planning and the ability to respond quickly to environmental stimuli may be supported in individuals who dance. Beyond the physical execution of movements, dance requires continuous adaptation to rhythm, spatial orientation, and the actions of others, which may stimulate rapid information processing and flexible cognitive strategies. As a result, dance may be considered a potential form of decision-making practice. However, no included study directly examined decision-making in competitive sport athletes; therefore, any application to sport-specific tactical decision-making remains speculative and requires empirical testing.

4. Mental Resilience and Emotional Well-Being

Dance may support coping with stress, maintaining motivation, and emotional regulation processes. Quiroga Murcia et al. (2010) and Koch et al. (2014) reported that group dance may strengthen social connectedness and psychological well-being. Bräuninger (2014) showed that group dance therapy was associated with improvements in stress management, self-efficacy perception, and perceived social support. The social aspect of dance may increase the sense of belonging, reduce performance anxiety, and promote emotional well-being; however, direct evidence in competitive athlete samples remains absent, and these associations derive from general adult and university-student populations.

5. Motivation and Self-Efficacy

Dance activities may be associated with individuals' self-confidence and motivation. Barone et al. (2017) reported that dance was associated with improved psychological motivation and quality of life in older adults. Schott and Klotz (2021) reported that dance practices may be associated with positive effects on self-efficacy perception. In addition, participation in dance-based programs may contribute to individuals setting personal goals and

being more motivated to achieve them. Whether these motivational mechanisms translate to sport-specific motivation in competitive athletes has not yet been empirically examined.

6. Sub analysis by Age Group and Sport Branch

Some studies suggest that the effects of dance may differ according to age group. Teixeira-Machado et al. (2019) indicated that attention and decision-making processes may be more responsive in younger populations, while memory and executive functions may be particularly relevant in older ages. Importantly, when the included evidence is classified by population type, none of the 12 sources recruited competitive athletes: seven involved older adults, three involved mixed or general adult populations, and two derived from dance therapy or review-based contexts. This distribution means that all sport psychology implications drawn in this review are based on indirect evidence and should be treated as hypotheses for future athlete-specific research rather than established findings.

7. Classification of Evidence by Population Type

To prevent overgeneralization, the evidence included is classified according to its directness relative to sport psychology. (A) Direct evidence from competitive athlete samples: none of the 12 included sources recruited competitive athletes—this category is empty. (B) Indirect evidence from older adult populations (n=7): these studies document cognitive and balance-related outcomes in samples whose physiology, training demands, and competitive pressures differ substantially from athletes. (C) Indirect evidence from mixed or general adult populations (n=3): relevant cognitive-psychological associations, but without sport-specific sampling or performance measurement. (D) Review-based or theoretical evidence (n=2): conceptual mapping rather than primary empirical data. This classification makes explicit that every sport psychology implication in this review rests on categories B–D (indirect or theoretical evidence) and that category A remains a gap to be addressed by future athlete-specific research.

In summary, the findings suggest that dance-based interventions may be associated with multidimensional outcomes across cognitive, psychological, and social domains. Associations reported in attention, memory, decision-making, and motivation processes indicate that dance may serve as a potential complementary approach in sport psychology applications. However, given the complete absence of athlete-specific evidence and the heterogeneity of the included studies, these potential implications should be interpreted with caution.

DISCUSSION

The findings of this scoping review suggest that dance may be associated with cognitive, psychological, and social dimensions of potential relevance to sport psychology practice. However, because the included evidence derives entirely from non-athlete populations, the following interpretation distinguishes between what the evidence demonstrates (associations in older adult and general adult samples) and what remains hypothetical (transfer to competitive athletic contexts).

1. Dance and Cognitive Reserve: Neuroscientific Perspective

The impact of dance on neuroplasticity has been highlighted for its potential to slow cognitive decline, especially in older individuals (Rehfeld et al., 2017; Teixeira-Machado et al., 2019). Stern's (2012) cognitive reserve theory suggests that lifelong stimulating activities such as dance may reduce the impact of age-related decline. Kattenstroth et al. (2013) reported that participants in a six-month contemporary dance program achieved better results in both

cognitive and balance tests compared to a control group. In a study conducted with elderly individuals in Japan, participants in a dance-based exercise program showed higher levels of executive function and decision-making skills than those in a classical sports exercise group (Kimura & Hozumi, 2013). It should be emphasized that cognitive reserve theory was developed primarily to explain older-adult cognition and does not, by itself, account for sport-specific outcomes such as performance anxiety, team cohesion, or tactical decision-making.

2. Dance and Psychological Resilience: Group Dynamics and Team Spirit

The impact of dance on stress management, self-efficacy, and resilience has been associated with positive outcomes in both group therapy settings and team sport contexts (Bräuninger, 2014; Koch et al., 2014; Barone et al., 2017). A dance therapy intervention conducted by Bräuninger (2014) was associated with decreased anxiety levels and increased self-efficacy perception among university students during stressful exam periods. In-group support emerged as a key determinant of emotional resilience. Group dance practices may strengthen social cohesion and psychological resilience in both therapeutic and sport-related group contexts (Koch et al., 2014).

3. Dance, Motivation and Self-Efficacy: Individual Development

Motivation and self-efficacy may be strengthened through dance-based practices, especially in individual sports (Barone et al., 2017; Schott & Klotz, 2021). Teixeira-Machado et al. (2019) showed that athletes who participated in dance-based motor skills training had higher intrinsic motivation and self-confidence scores than those who only followed classical training programs. Barone et al. (2017) emphasized that dance-based intervention programs in older adults were associated with improved psychological well-being and exercise motivation.

4. Dance and Decision-Making: Rapid Reaction and Sports Performance

The complex movement patterns of dance and its rhythmic structure integrated with music may, in principle, support agile decision-making and strategic thinking. Kimura and Hozumi (2013) showed that dance-based exercises were associated with improved decision-making speed in older adults. However, extrapolating from reaction-time improvements in elderly samples to tactical decision-making in competitive sport is speculative; this proposed link has not been tested in athlete populations and should be regarded as a hypothesis for future research rather than an established finding.

5. Effects of Dance by Age Group and Sport Branch

The contributions of dance in different age groups and disciplines vary (Wu et al., 2021; Koch et al., 2014; Kattenstroth et al., 2013). In applications with adults over the age of 50, improvements in both balance and procedural memory scores have been reported (Kattenstroth et al., 2013). In younger adults engaged in modern dance training, increases in cognitive control and prefrontal cortex activity have been observed (Wu et al., 2021).

6. Theoretical Integration: Toward a Conceptual Model

The concepts drawn upon in this review—cognitive reserve, neuroplasticity, motivation, self-efficacy, mental resilience, and social connectedness—are most coherent when integrated within a broader theoretical framework. Several perspectives may jointly explain how dance could influence sport-psychology-relevant outcomes. Cognitive reserve theory (Stern, 2012) accounts for how cognitively demanding motor activity may build neural reserve. Embodied cognition emphasizes that cognition is grounded in sensorimotor experience, suggesting that whole-body dance practice may shape cognitive processing. Motor learning theory describes how repetitive skill acquisition drives neuroplastic change relevant to both

motor and cognitive performance. Self-Determination Theory (Deci & Ryan, 2000) explains how dance may satisfy needs for autonomy, competence, and relatedness, thereby supporting motivation and well-being. Group cohesion theory and emotional regulation theory further clarify how synchronized group movement may strengthen social bonding and affect regulation—dimensions especially relevant to team sport contexts.

These frameworks are complementary rather than competing. Cognitive reserve and motor learning theories help explain dance-related cognitive gains observed in older adults, whereas self-determination, group cohesion, and emotional regulation theories are more directly relevant to motivational, social, and affective outcomes pertinent to sport psychology. Taken together, these perspectives position dance as a multimodal stimulus that simultaneously engages sensorimotor, cognitive, affective, and social systems—pathways that could, in principle, support athlete well-being and performance readiness. Crucially, this synthesis remains theoretical: each pathway requires direct empirical testing in athlete populations before it can be considered established.

7. Assessment of Strengths and Limitations

Although this review synthesized evidence across different ages, disciplines, and cultures, there are still no randomized controlled, long-term studies involving elite athletes, and very few involving child or adolescent groups (Teixeira-Machado et al., 2019). In addition, more experimental studies are needed to obtain clearer findings on the comparative effects of different dance types (e.g., ballet, hip-hop, folk dance). Koch et al. (2014) found differences between dance genres, suggesting that energetic genres such as hip-hop may be more relevant to cognitive flexibility in young populations. A central limitation is the indirectness of the evidence: because no included study sampled competitive athletes, the strength of evidence for any sport-specific outcome is insufficient, even where evidence for general cognitive or psychological outcomes is moderate.

8. Practical Guide and Recommendations for Coaches and Sport Psychologists

The following suggestions are offered as tentative applications and future research directions rather than established evidence-based practices, given the absence of athlete-specific intervention studies. Coaches may explore dance-based warm-up and coordination exercises as a potential way to support motivation and group dynamics in early-season preparation (Koch et al., 2014). Sport psychologists may consider individual and team-oriented dance practices as candidate approaches for performance anxiety and stress management, particularly through group dance or dance-music therapy (Bräuninger, 2014). Any such application should be implemented and evaluated as a pilot, with systematic monitoring of athlete outcomes, until controlled athlete-specific evidence becomes available.

9. Practical Implications

The findings of this review carry several tentative implications for sport psychology practitioners, all of which require empirical validation in athlete samples. Dance-based interventions may serve as candidate complementary approaches to support both healthy ageing (e.g., slowing cognitive decline and enhancing balance) and youth development (e.g., supporting learning capacity, attention, and motivation). Dance practices may potentially help strengthen attentional focus during training and the ability to respond quickly in dynamic settings. Integrating dance exercises into training programs may support adaptive decision-making; however, this proposition has not been tested in competitive athletes. Dance-based approaches may also offer potential contributions to stress management and motivational support in both individual and group applications.

10. Recommendations for Future Research

Future studies should:

(1) Evaluate the long-term cognitive and psychological effects of dance in different age and gender groups through multicenter studies;

(2) Conduct randomized controlled trials examining the effect of dance on performance, injury prevention, and psychological well-being in elite athletes;

(3) Investigate the effects of dance-music therapy and mindfulness-based dance practices on performance anxiety and burnout;

(4) Study the impact of branch-specific dance programs on field communication, leadership, and team spirit using mixed-method designs; and

(5) Monitor long-term outcomes such as self-discipline, social interaction, and sports commitment in children and young athletes.

Conclusions And Recommendations

This scoping review maps evidence suggesting that dance may contribute to cognitive, psychological, and social outcomes of potential relevance to sport psychology. The mapped evidence indicates that dance is not only a physical activity but may also represent a complementary approach associated with cognitive functioning, emotional stability, motivation, and psychological resilience. However, because the included evidence is heterogeneous and is based entirely on older adults or mixed non-athlete populations, all conclusions regarding athletic performance are exploratory and should be interpreted with considerable caution. This review identifies the absence of athlete-specific evidence as the central gap in the field.

Cognitive Development

Dance practices may lead to improvements in cognitive domains such as memory, attention, executive functions, and rapid decision-making. Choreographic learning processes and rhythmic movements may support neuroplasticity and cognitive reserve.

Psychological Resilience and Emotional Well-Being

Group dance may provide a sense of belonging, social support, and stress management. Dance-based programs may increase self-confidence and self-efficacy, reduce performance anxiety, and support motivation levels in athletes.

Motivation and Engagement

Dance may encourage commitment to sports and regular participation in training. It may positively affect intrinsic motivation, especially in young athletes, and quality of life in older people.

Differences by Sport Branch and Age

The benefits of dance may differ according to age group and sports branch, with stronger effects on attention and decision-making in young people, and on memory and executive functions in older people.

Practical Recommendations for Practitioners

It may be useful to include individual or group dance practices in training programs. Group dance can be used to strengthen on-field cohesion and communication, especially in team sports. Dynamic genres such as hip-hop and contemporary dance may be useful for quick decision-making and agility in young athletes. Movement patterns such as contemporary and folk dance may support coordination, balance, and cognitive reserve in adult and older athletes. Dance-music therapy and free dance practices may be considered by sport psychologists for performance anxiety and stress management.

Suggestions for Future Research

Multicenter studies examining the long-term effects of dance in elite athletes using randomized controlled trials should be conducted. The specific effects of different types of dance on athletic performance and psychological outcomes should be compared. The effects of dance on self-discipline, social interaction, and sports commitment in children and young athletes should be investigated in long-term follow-up studies.

In conclusion, dance may represent a promising but currently under-evidenced complementary approach within sport psychology, with potential relevance to cognitive flexibility, emotional balance, motivation, and social integration. The present evidence base, however, does not yet support firm claims about athletic performance enhancement. Expanding athlete-specific, randomized, and longitudinal research, and increasing interdisciplinary collaboration, will be necessary before dance-based programs can be recommended as evidence-based practices in applied sport psychology settings.

Limitations:

This study is a scoping review, and its conclusions are constrained by several important limitations. First, and most critically, the indirectness of the evidence: none of the 12 included sources recruited competitive athletes, so all sport psychology implications rest on indirect evidence from older adult (n=7), mixed/general adult (n=3), or dance therapy/review-based (n=2) contexts. Second, the heterogeneity of the included studies—spanning different dance genres (contemporary, hip-hop, ballroom, social, rhythmic), intervention durations (8 weeks to 18 months), frequencies, and outcome measures—limits comparability and precludes quantitative meta-analysis. Third, the small number of included studies (n=12) and generally small individual sample sizes (most n<70) restrict statistical power and the robustness of synthesized conclusions. Fourth, methodological limitations across studies included the absence of control groups in some designs, lack of blinding (inherent to behavioral interventions), and limited long-term follow-up. Fifth, the strength of evidence varied by outcome and was insufficient for any sport-specific claim. Finally, the potential for publication bias and the inclusion of both primary and review-based sources should be considered when interpreting the findings. These limitations collectively indicate that the review should be read as an evidence map identifying gaps and hypotheses, not as confirmation of dance's effectiveness for athletic populations.

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Author(s)' statements on ethics and conflict of interest

Ethics statement: We hereby declare that research/publication ethics and citing principles have been considered in all the stages of the study. We take full responsibility for the content of the paper in case of dispute.

Conflicts of Interest: There are no conflicts of interest declared by the authors.

Funding: None