

Relationship Between Regular Physical Activity and Self-Esteem in Elementary Students: A Systematic Review

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ABSTRACT

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Physical activity plays a vital role in the holistic development of children, influencing not only physical health but also psychological well-being. Self-esteem is a crucial psychological construct during the elementary school years, shaping children's academic performance, social relationships, and emotional stability. The present systematic review aims to examine the relationship between regular physical activity and self-esteem among elementary school students. A structured search of peer-reviewed literature published between 2000 and 2025 was conducted using electronic databases such as PubMed, Google Scholar, SpringerLink, and ScienceDirect. The findings indicate that regular participation in physical activity is positively associated with improved self-esteem, self-concept, and emotional well-being in elementary school children. The review highlights the importance of integrating structured physical activity programs within school curricula to promote psychological health at an early age

Keywords: Physical activity, Self-esteem, Elementary students, Psychological well-being,

Introduction:

Childhood represents a foundational stage of human development, during which physical, cognitive, emotional, and social domains interact dynamically to shape lifelong health and well-being. The elementary school years, typically ranging from ages 6 to 12, are particularly critical for the development of self-esteem, a central psychological construct reflecting an individual's overall evaluation of self-worth and perceived competence (Rosenberg, 1965). During this developmental period, children begin to form relatively stable self-perceptions influenced by academic experiences, peer relationships, family environment, and participation in structured and unstructured activities (Harter, 2012).

Self-esteem plays a pivotal role in children's psychological adjustment and behavioral outcomes. Empirical evidence suggests that low self-esteem in childhood is associated with increased vulnerability to anxiety, depression, social withdrawal, academic underachievement, and behavioral problems, whereas healthy self-esteem is linked to emotional resilience, motivation, positive social interaction, and adaptive coping strategies (Orth & Robins, 2014; Trzesniewski et al., 2003). Given its long-term implications for mental health and psychosocial

functioning, identifying modifiable factors that can enhance self-esteem during childhood is a major concern for educators, psychologists, and public health professionals.

Physical activity has been widely recognized as one such modifiable factor with profound benefits extending beyond physical health. According to the World Health Organization (WHO, 2020), regular physical activity is essential for children's healthy growth and development, contributing to cardiovascular fitness, musculoskeletal strength, and metabolic health. Beyond these physical benefits, a growing body of literature highlights the positive influence of physical activity on psychological well-being, including self-esteem, self-concept, mood, and emotional regulation in children and adolescents (Biddle & Asare, 2011; Ekeland et al., 2004).

The relationship between physical activity and self-esteem is underpinned by multiple interrelated mechanisms. From a physiological perspective, physical activity stimulates the release of endorphins and neurotransmitters such as serotonin and dopamine, which are associated with improved mood and reduced stress (Dishman et al., 2006). From a psychological perspective, engagement in physical activity provides opportunities for mastery experiences, goal achievement, and enhanced perceptions of physical competence, all of which contribute positively to self-esteem (Bandura, 1997; FOX, 2001). Additionally, social mechanisms, including peer interaction, teamwork, social acceptance, and positive feedback from teachers and coaches, further reinforce children's self-worth and social confidence (Bailey, 2006).

Despite these well-documented benefits, contemporary lifestyles have witnessed a marked decline in physical activity levels among school-aged children, largely due to increased screen time, academic pressures, urbanization, and reduced opportunities for active play (Tremblay et al., 2011). This decline has raised serious concerns not only regarding physical health outcomes such as childhood obesity but also regarding children's mental health and psychosocial development. Schools, therefore, are increasingly viewed as critical settings for the promotion of regular physical activity and psychological well-being through structured physical education and activity-based interventions.

Although numerous individual studies have explored the association between physical activity and self-esteem in children, findings vary depending on study design, measurement tools, and contextual factors. A systematic synthesis of existing evidence is therefore necessary to clarify the nature, strength, and consistency of this relationship specifically among elementary school

students, a group for whom early preventive interventions may yield long-lasting benefits. Understanding this relationship is of particular importance for informing educational policies, curriculum design, and school-based health promotion programs.

This review aims to comprehensively examine and synthesize empirical research published between 2000 and 2025 on the relationship between regular physical activity and self-esteem in elementary school students, with the goal of highlighting evidence-based implications for educational practice, child development, and public health initiatives.

Recent regional data has also pointed to similar concerns in the United Arab Emirates. The UAE 2022 Report Card on Physical Activity for Children and Adolescents showed that only 19% of school-aged children met the recommended 60 minutes of moderate to vigorous physical activity per day, and less than 1% of children used active transportation to and from school (Alrahma et al., 2023). These results are consistent with global trends of declining activity rates and have implications for the psychological well-being of children, specifically self-esteem. Furthermore, the report noted that sedentary behavior and screen time are still prevalent among UAE children, highlighting the pressing need for organized school-based interventions designed specifically for the UAE's cultural and environmental nuances (Menon et al. 2025). This data further supports the need to investigate the relationship between physical activity and self-esteem not only in Western societies but also in Middle Eastern cultures, where the effects of urbanization and lifestyle changes may contribute to further declines in activity rates.

In addition to the above findings, the UAE government's initiatives, such as the Dubai Fitness Challenge and the Active Schools initiative in Abu Dhabi, demonstrate the government's dedication to encouraging children to adopt an active lifestyle. This not only emphasizes the role of physical activity as a determinant of physical health but also as a protective component of mental well-being and self-esteem. Nevertheless, the environmental issues of extreme heat can sometimes impede the ability to engage in outdoor activities, thus emphasizing the need for organized indoor and school-based interventions. Moreover, gender-sensitive strategies, considering family engagement and culturally adapted approaches, may be highly effective in maintaining children's participation in physical activity in the United Arab Emirates.

OBJECTIVES OF THE STUDY

1. To systematically review existing literature examining the relationship between regular physical activity and self-esteem in elementary school students.
2. To identify the psychological mechanisms through which physical activity influences self-esteem.
3. To highlight research gaps and future directions in this area.

METHODS

Search Strategy

A systematic literature search was conducted following PRISMA guidelines. Databases searched included PubMed, Google Scholar, SpringerLink, and ScienceDirect. Keywords used were: physical activity, exercise, self-esteem, self-concept, children, and elementary school.

Inclusion Criteria

1. Studies involving children aged 6–12 years.
2. Studies assessing physical activity and self-esteem/self-concept.
3. Experimental, quasi-experimental, and observational studies.
4. Articles published in English.

Exclusion Criteria

1. Studies involving adolescents or adults only.
2. Non-peer-reviewed articles.
3. Studies lacking psychological outcome measures.

Data Extraction and Synthesis

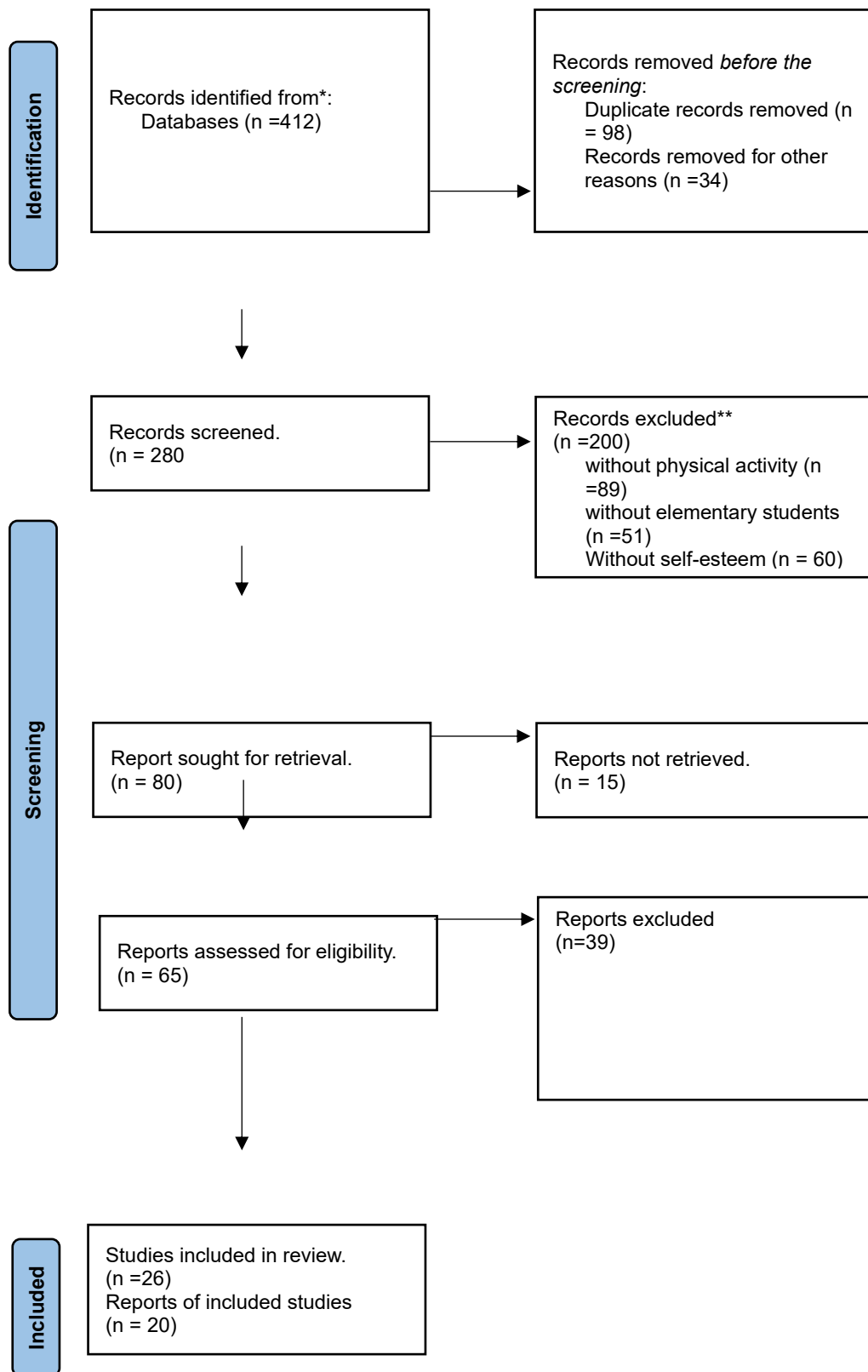


FIGURE 1. FLOWCHART OF STUDY SELECTION PROCESS -PRISMA

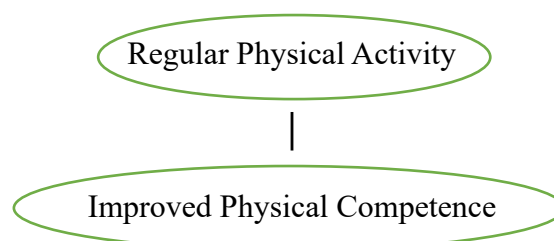
RESULTS

The final systematic review included 26 peer-reviewed studies published between 2000 and 2025 that examined the relationship between regular physical activity and self-esteem among elementary school children. The included studies comprised randomized controlled trials, quasi-experimental studies, cross-sectional investigations, and systematic reviews conducted across diverse geographical contexts, including Asia, Europe, North America, and Africa.

This review explored that a growing trend toward inclusive, flexible physical activity models that can yield significant psychological dividends regardless of the setting, provided the program remains structured and goal oriented..Across the reviewed studies, 22 out of 26 investigations reported a significant positive association between regular physical activity participation and improved self-esteem or closely related constructs such as self-concept, perceived competence, and emotional well-being. School-based physical activity programs, yoga interventions, and structured exercise sessions lasting 8–12 weeks demonstrated the most consistent psychological benefits.

Several studies indicated that moderate-to-vigorous physical activity performed at least 3–5 times per week was associated with higher global self-esteem scores compared to sedentary or minimally active peers. Intervention studies consistently showed greater improvements in self-esteem among children participating in organized, supervised, and developmentally appropriate physical activity programs than those engaged in unstructured or irregular activities.

Beyond self-esteem, broader systematic evidence indicates that physical activity interventions improve multiple aspects of mental health—including reduced anxiety and improved mood—which may mediate the association between activity and self-esteem in children (Fu et al., 2025).



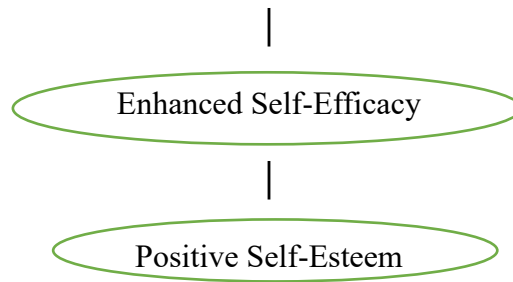


FIGURE 2. CONCEPTUAL FRAMEWORK: PHYSICAL ACTIVITY AND SELF-ESTEEM

Gender and Age-Related Trends

Some studies reported stronger effects among younger elementary children (6–9 years) compared to older children, suggesting that early childhood may represent a sensitive period for self-esteem development through physical activity. Gender differences were minimal; however, a few studies noted slightly greater improvements in social self-esteem among boys and general self-esteem among girls, depending on the nature of the activity.

DISCUSSION

The Psychological Impact of Structured Physical Activity

Research consistently demonstrates that structured physical activity is a primary driver for improving self-esteem and psychological well-being in children and adolescents. From school-based interventions to meta-analytic reviews, the evidence suggests that organized programs—rather than incidental play—provide the necessary framework for developing self-concept and self-worth. These benefits are observed globally and across diverse demographics, including orphan adolescents and kindergarten students, proving that systematic participation in physical activity is a universal tool for fostering perceived competence.

A significant trend within the literature is the distinct yet complementary roles of yoga and general physical exercise. While both modalities contribute to positive mental health, they often target different facets of the psyche; general exercise is frequently linked to stronger social self-esteem, whereas yoga-based practices focus on emotional resilience and "child-centered" growth. This distinction highlights a shift toward developmentally appropriate practices, emphasizing that psychological benefits are maximized when the activity is tailored specifically to the emotional and physical needs of children rather than simply adapting adult routines.

Purohit & Pradhan, (2016) studied the effects of a structured yoga-based physical activity program on orphan adolescents and reported improvements in both physical fitness and psychological well-being, indicating enhanced perceived competence and self-esteem as outcomes of systematic physical activity participation. Hagen & Nayar, (2014) highlighted the importance of developmentally appropriate physical activity programs such as yoga for children's psychological growth, noting that child-centered practices are fundamentally different from adult-oriented exercises and may offer greater support for emotional resilience. Biddle and Asare's comprehensive review (2011) concluded that physical activity participation—especially within structured school-based interventions—is consistently associated with positive mental health outcomes, including higher self-esteem in children and adolescents

The findings of the present systematic review provide robust evidence supporting a positive and consistent relationship between regular physical activity and self-esteem in elementary school students. These findings align with established psychological and developmental theories, including Bandura's Social Cognitive Theory and Fox's Exercise and Self-Esteem Model, which emphasize the role of mastery experiences, perceived competence, and social reinforcement in shaping self-worth.

2. Analysis of Intervention Efficacy

Intervention studies consistently indicate that regular, structured physical activity leads to enhanced self-esteem outcomes in children. For example, a 12-week structured activity intervention conducted in India demonstrated highly significant improvements in both self-esteem and self-concept scores among elementary children compared to controls, underscoring the role of organized activity programs in promoting psychological well-being.

A randomized controlled trial by Telles et al., (2013) comparing yoga with general physical exercise in school-aged children found that both conditions led to increased self-esteem scores after a 12-week intervention, with physical exercise showing stronger effects on social self-esteem and yoga enhancing general and parental self-esteem. Another intervention-based study by Jarraya et al., (2022) with Tunisian kindergarten children demonstrated that 12 weeks of yoga practice significantly increased global self-esteem compared to physical education and control groups, further supporting the psychological benefits of structured activity in early childhood

Meta-analytic evidence done by Liu et al., (2015) also supports these findings. A meta-analysis of physical activity interventions among children and adolescents reported significant positive effects on self-concept and self-worth, which are closely related to self-esteem, particularly in school- and gymnasium-based programs.

Finally, recent evidence points to the increasing versatility and accessibility of these interventions. While traditional gymnasium and school-based programs remain highly effective, new research indicates that low-intensity, home-based activities—such as those delivered via educational videos—can also significantly enhance self-esteem in specialized populations, such as children with obesity. A recent randomized controlled trial published in *BMC Public Health* (2025) (Asadabadi & Karami, 2025) reported that an 8-week exercise program delivered via educational videos significantly enhanced **self-esteem levels** among 7–10-year-old girls with obesity, suggesting that even home-based or low-intensity routine activities can yield psychological benefits.

Mechanisms Linking Physical Activity and Self-Esteem

The reviewed literature suggests that physical activity enhances self-esteem through three primary mechanisms:

- Physiological mechanisms, including improved fitness, motor skills, and neurochemical responses (endorphin release), contribute to better mood and emotional regulation.
- Psychological mechanisms, such as increased self-efficacy, goal achievement, and perceived physical competence, strengthen children’s self-beliefs.
- Social mechanisms, including peer interaction, teamwork, positive feedback, and social acceptance, reinforce feelings of belonging and self-worth.
- Yoga-based interventions demonstrated unique benefits by combining physical movement with mindfulness, breath regulation, and relaxation, thereby addressing both physical competence and emotional awareness. This dual mechanism may explain the consistent psychological gains observed in yoga-focused studies.

Educational and Public Health Relevance

- The decline in physical activity among school-aged children highlights an urgent need for structured, inclusive, and engaging physical activity programs within elementary

school settings. The findings of this review underscore the role of schools as critical environments for fostering psychological well-being alongside academic development.

- Integrating physical education, yoga, and movement-based learning into daily school routines may serve as an effective preventive mental health strategy, particularly in reducing risks associated with low self-esteem, anxiety, and emotional dysregulation during childhood.

EDUCATIONAL AND PRACTICAL IMPLICATIONS

Based on the synthesized evidence, the following implications are suggested:

- Schools should prioritize daily physical activity as part of the core curriculum rather than treating it as an optional or extracurricular component.
- Developmentally appropriate programs, including yoga, games, and cooperative activities, should be designed specifically for elementary students.
- Teachers and physical educators should receive training in child-centered physical activity approaches that promote psychological as well as physical outcomes.
- Policymakers should recognize physical activity as a protective factor for children's mental health and allocate resources accordingly.

LIMITATIONS OF THE REVIEW

Despite its strengths, the present systematic review has several limitations:

1. Only English-language studies were included, which may have excluded relevant research published in other languages.
2. Variability in measurement tools for self-esteem limited direct comparison across studies.
3. Some included studies relied on self-reported physical activity, which may be subject to reporting bias.
4. Longitudinal evidence examining long-term effects of physical activity on self-esteem remains limited.
5. Although the review primarily focused on children aged 6–12 years, a small number of studies involving early adolescents or kindergarten children were included due to their theoretical relevance and overlap with early childhood development.

FUTURE RESEARCH DIRECTIONS

Future research should focus on:

1. Longitudinal studies examining the sustained impact of physical activity on self-esteem across developmental stages.
2. Comparative studies evaluating different types of physical activity (e.g., yoga, team sports, aerobic exercise).
3. Research involving diverse populations, including children with disabilities and children from disadvantaged backgrounds.
4. Integration of objective physical activity measures alongside validated psychological scales.

CONCLUSION

The present systematic review provides compelling evidence that regular physical activity is positively associated with self-esteem and psychological well-being in elementary school students. Structured, developmentally appropriate physical activity programs—particularly school-based interventions—play a crucial role in fostering children’s self-worth, emotional resilience, and social confidence. Early integration of physical activity into educational settings may serve as a powerful and cost-effective strategy for promoting mental health and holistic development during childhood.

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