



# Effects of Structured Play Interventions on Self-Esteem, Physical Competence, and Psychological Well-Being in Children

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## ABSTRACT

Structured play has been proposed as an effective approach to enhance both physical and psychological health in children; however, evidence from school-based interventions examining self-esteem, perceived physical competence, and psychological well-being simultaneously remains limited. This study examined the effects of an eight-week structured play intervention on self-esteem, perceived physical competence, and psychological well-being in children aged 8–11 years. In this quasi-experimental pretest–posttest study, 68 children were recruited from primary schools in Tehran, Iran, and conveniently allocated to a structured play intervention group ( $n = 34$ ) or a control group ( $n = 34$ ). The intervention comprised two 45-minute sessions per week for 8 weeks, including skill-based activities, cooperative games, and reflection periods. Outcomes were assessed using the Rosenberg Self-Esteem Scale (child-adapted), the Physical Self-Perception Profile for Children, and the KIDSCREEN-27 (total score). Pre- and post-intervention data were analyzed using ANCOVA, controlling for baseline scores, with effect sizes reported as partial eta squared ( $\eta^2p$ ). The results revealed significant intervention effects on all outcomes. Self-esteem improved significantly in the intervention group compared with controls ( $F(1, 65) = 18.42, p < 0.001, \eta^2p = 0.22$ ). Similarly, perceived physical competence ( $F(1, 65) = 32.15, p < 0.001, \eta^2p = 0.33$ ) and psychological well-being ( $F(1, 65) = 24.87, p < 0.001, \eta^2p = 0.28$ ) increased significantly. Paired-sample *t*-tests confirmed pre- to post-intervention improvements in the intervention group (all  $p < 0.001$ ), whereas changes in the control group were non-significant. An 8-week structured play program delivered in schools was associated with meaningful improvements in self-esteem, perceived physical competence, and psychological well-being in children aged 8–11 years, supporting its potential for promoting holistic development in educational and community settings.

**Keywords:** Structured play; School-based intervention; Self-esteem; Physical competence; Psychological well-being; Children

## 1. Introduction

Childhood is a critical period for the development of physical, psychological, and social health (1). Experiences during these formative years shape not only physical abilities but also self-perceptions, emotional functioning, and overall well-being that may persist into

adolescence and adulthood (2). In recent decades, concerns have been raised regarding declining physical activity levels among children, alongside increasing prevalence of psychological challenges such as low self-esteem, stress, and emotional difficulties (3). These trends highlight the urgent need for developmentally appropriate and engaging interventions that can support both physical activity

participation and positive psychosocial development in children. Play is widely recognized as a fundamental component of healthy child development. Through play, children explore their environment, develop motor skills, learn social norms, and construct self-knowledge (4). However, contemporary lifestyles characterized by increased screen time, academic pressures, and reduced opportunities for free movement have limited children's engagement in active play (5). As a result, structured play interventions have emerged as a promising strategy to reintroduce purposeful, enjoyable movement opportunities while simultaneously addressing psychosocial outcomes. Structured play differs from free play in that it is intentionally designed, guided by adults or facilitators, and aligned with specific developmental goals, including self-esteem, physical competence, and psychological well-being (6).

Self-esteem is a key psychological construct that develops significantly during childhood and reflects a child's overall evaluation of self-worth and personal value. Positive self-esteem has been associated with adaptive outcomes such as resilience, motivation, social adjustment, and emotional stability, whereas low self-esteem has been linked to anxiety, depression, and behavioral problems (7). Physical activity contexts, particularly those involving play and movement, offer unique opportunities for self-esteem development. Success in physical tasks, positive feedback from peers and adults, and a sense of belonging within group activities can all contribute to enhanced self-esteem (8). Structured play interventions, by providing supportive and inclusive environments, may be especially effective in nurturing positive self-evaluations among children, particularly for those who initially feel less confident in movement settings.

Physical competence refers to an individual's perceived and actual ability to perform physical tasks and motor skills. In children, the development of physical competence is closely linked to participation in physical activities and play-based movement experiences (9). When children acquire and refine fundamental motor skills through structured play, they are more likely to experience success, mastery, and enjoyment, which strengthens perceived competence and encourages continued participation in physical activity. Conversely, children who perceive

themselves as physically incompetent may avoid movement-based activities, leading to a cycle of inactivity and diminished confidence (10). Therefore, interventions that enhance physical competence during childhood are important for fostering continued engagement in physical activity and promoting overall health.

Psychological well-being is a broader construct encompassing emotional balance, positive mood, life satisfaction, and the ability to cope with stress and challenges. In children, psychological well-being is influenced by multiple factors, including physical health, social relationships, and self-perceptions (11). Emerging evidence suggests that regular participation in physical activity and play-based interventions can positively affect children's psychological well-being by reducing stress, improving mood, and enhancing feelings of happiness and vitality (12). Unlike narrowly defined mental health outcomes that focus on the absence of psychological disorders, psychological well-being emphasizes positive functioning and optimal development, making it particularly relevant for preventive and promotive health research in childhood.

Structured play interventions may serve as an effective means of simultaneously addressing self-esteem, physical competence, and psychological well-being. Such interventions are typically designed to include age-appropriate activities, clear rules, cooperative tasks, and opportunities for skill progression (13, 14). By emphasizing enjoyment, inclusion, and personal improvement rather than competition alone, structured play can create a psychologically safe environment in which children feel encouraged to participate regardless of their initial skill level (15). This feature may be especially relevant in school contexts, where children vary widely in skill, confidence, and prior activity experiences.

Theoretical frameworks support the interconnectedness of self-esteem, physical competence, and psychological well-being. Competence motivation theory suggests that individuals are motivated to engage in activities in which they feel competent, and successful experiences reinforce positive self-perceptions (16). Similarly, self-determination theory emphasizes the role of competence, autonomy, and relatedness in promoting intrinsic motivation and well-being. Structured play interventions that provide skill-

building opportunities, allow for choice and autonomy, and encourage positive social interaction may therefore enhance children's intrinsic motivation for physical activity while supporting psychological well-being (17, 18). These theoretical perspectives highlight the potential of structured play as a multifaceted intervention strategy.

Empirical research has demonstrated positive associations between physical activity and various psychological outcomes in children; however, many studies have focused primarily on fitness-related measures or general activity levels (19-21). Fewer studies have examined the combined effects of structured play interventions on self-esteem, physical competence, and psychological well-being within a single framework (6, 13, 15). Additionally, existing research often varies in intervention design, duration, and outcome measures, making it difficult to draw consistent conclusions. Therefore, more focused studies that evaluate multiple psychosocial outcomes alongside perceptions of competence are needed to clarify the holistic benefits of structured play programs.

From a public health perspective, interventions that integrate physical activity with psychological well-being are particularly valuable. Schools, community programs, and health promotion initiatives increasingly recognize the importance of addressing mental and emotional health alongside physical development. Structured play interventions are practical, cost-effective, and adaptable to various settings, making them suitable for large-scale implementation. By demonstrating their effectiveness in enhancing self-esteem, physical competence, and psychological well-being, such interventions can inform policies and practices aimed at improving child health outcomes.

Therefore, the purpose of the present study is to examine the effects of an eight-week school-based structured play program on self-esteem, physical competence, and psychological well-being in children aged 8–11 years. We hypothesized that children in the structured play group would show greater post-intervention improvements in all three outcomes compared with controls. By focusing on these interconnected outcomes, the study seeks to contribute to the growing body of literature that emphasizes holistic approaches to child development and health

promotion and may provide valuable insights for educators, health professionals, and policymakers seeking evidence-based strategies to support children's physical and psychological well-being during a critical stage of development.

## 2. Methods and Materials

### 2.1. Study Design

The present study employed a quasi-experimental, two-arm pretest–posttest design with an intervention group and a control group to examine the effects of a structured play intervention on children's self-esteem, physical competence, and psychological well-being. This design was selected to evaluate changes in outcomes following participation in a structured play program within a school-based setting where random allocation was not feasible. Measurements were collected at baseline (pre-intervention) and within one week after completion of the intervention period (post-intervention).

### 2.2. Participants

A total of 68 children aged 8–11 years were recruited from primary schools in Tehran, Iran. Sample size was estimated using G\*Power (version 3.1) for a mixed-design ANOVA with two groups and two measurement points, assuming a medium effect size ( $f = 0.25$ ),  $\alpha = 0.05$ , and 80% power, which indicated that at least 52 participants were required. To account for potential attrition, the target sample size was increased by 20% to 68 children. Children were eligible if they were enrolled in the selected schools, aged 8–11 years, able to participate in regular school-based physical activity, and had written informed consent from a parent/guardian as well as verbal assent. Exclusion criteria included medical conditions or injuries limiting participation, diagnosed neurological / developmental / psychological disorders likely to affect the outcomes, participation in other organized physical activity or psychological programs during the study period, attendance below 80% of intervention sessions, or incomplete baseline or post-intervention data. Participants were assigned to either the structured play intervention group ( $n = 34$ ) or the control group ( $n = 34$ ) using convenience (non-random) allocation. The control group continued usual routines

(regular classroom activities and standard physical education when applicable) without exposure to the structured play program during the study period.

### 2.3. Structured Play Intervention

The structured play intervention was delivered over 8 weeks, with sessions conducted twice weekly and lasting approximately 45 minutes per session. The program was designed to promote enjoyment, inclusivity, and skill development through age-appropriate activities. Sessions included cooperative games, movement-based challenges, and skill-focused tasks targeting fundamental motor skills (e.g., running, jumping, throwing, balancing, and coordination). Each session followed a standardized

structure: warm-up (~10 min), main activity (~30 min), and cool-down (~5 min). Activities were progressively modified to increase complexity while ensuring that all children could participate successfully regardless of baseline skill level. Emphasis was placed on positive reinforcement, encouragement, and cooperation rather than competition. Facilitators provided constructive feedback to support skill acquisition and positive movement experiences. The intervention was delivered by trained instructors following a standardized session plan (Table 1) to promote consistency across sessions. Children in the control group continued with their usual activities during the intervention period and did not receive any additional play-based or physical activity intervention.

**Table 1**

*Overview of the Structured Play Intervention (8 weeks; 2 sessions/week; ~45 min/session)*

Week	Core focus	Main activities (examples)	Intended objectives
1	Orientation & engagement	Cooperative tag games; basic balance games	Introduce structured play rules; build participation, enjoyment, and teamwork
2	Fundamental movement skills I	Obstacle courses; relays	Improve general motor coordination; increase confidence through achievable challenges
3	Object control & cooperation	Throwing/catching games; cooperative group challenges	Develop hand-eye coordination; strengthen peer interaction and positive feedback
4	Balance, rhythm & confidence	Partner-balance tasks; movement imitation/dance	Promote mastery experiences; support self-efficacy and social connectedness
5	Skill integration & problem-solving	Mini-games (e.g., simplified soccer/basketball); obstacle circuits	Integrate skills in game-like contexts; enhance coordination and decision-making
6	Teamwork & skill circuits	Cooperative relay challenges; stations/circuits	Reinforce participation and persistence; improve perceived competence via repetition and support
7	Consolidation & self-efficacy	Combined activities from earlier weeks; progressive skill challenges	Consolidate learned skills; strengthen self-efficacy through successful performance
8	Review & closure	Team challenges; final obstacle course	Reinforce enjoyment and group cohesion; provide positive closure and reflection

**Session structure (applied to all weeks):** Warm-up (~10 min; light aerobic activity + dynamic stretching), Main play (~30 min; structured games/skill tasks), Cool-down (~5 min; stretching + brief guided reflection/feedback). Activities were progressively modified to increase challenge while maintaining inclusivity and emphasizing cooperation and positive reinforcement over competition.

### 2.4. Outcome Measures

**Self-esteem.** Children’s self-esteem was assessed using the Rosenberg Self-Esteem Scale (child-adapted version) (22). The scale includes 10 items rated on a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree), with

higher scores indicating higher self-esteem. Internal consistency in the present sample was high (Cronbach’s  $\alpha = 0.91$ ).

**Perceived physical competence.** Perceived physical competence was measured using the Physical Self-Perception Profile for Children (PSPP-C) (23). The PSPP-C includes 24 items in a structured-choice format scored on a 4-point scale, with higher scores indicating higher perceived competence. Internal consistency was high (Cronbach’s  $\alpha = 0.92$ ).

**Psychological well-being.** Psychological well-being was assessed using the KIDSCREEN-27 questionnaire (24), which includes 27 items across five domains (physical well-being, psychological well-being, autonomy and parent

relations, social support and peers, and school environment) rated on a 5-point Likert scale (1 = never to 5 = always). In the present study, the KIDSCREEN-27 was scored as a single composite indicator of psychological well-being (specify: total score or relevant subscale), with higher scores indicating better well-being. Internal consistency was high (Cronbach’s  $\alpha = 0.90$ ).

### 2.5. Data Collection Procedure

Assessments were administered approximately one week before (pre-intervention) and approximately one week after (post-intervention) the structured play program. Questionnaires were completed in a quiet classroom setting under the supervision of the research team and teachers. Standardized instructions were provided, and researchers assisted participants as needed to ensure comprehension. Scoring followed published guidelines. If required by the scoring manual, raw scores were converted to standardized scores for analysis.

### 2.6. Statistical Analysis

Data were analyzed using SPSS version 29 (IBM Corp., Armonk, NY, USA). Descriptive statistics (mean  $\pm$  SD) were calculated for all outcome variables at pre- and post-intervention. Assumptions were assessed prior to inferential analyses: normality was evaluated using the Shapiro–Wilk test and inspection of Q–Q plots/histograms; homogeneity of variance was tested using Levene’s test; and linearity and homogeneity of regression slopes were examined using scatterplots and interaction terms between baseline scores (covariates) and group. Primary intervention effects were examined using analysis of covariance (ANCOVA) for each outcome, with post-intervention scores as the dependent variable, baseline (pre-intervention) scores as

covariates, and group (intervention vs. control) as the independent variable. Effect sizes were reported using partial eta squared ( $\eta^2p$ ) with conventional interpretation thresholds (small = 0.01, medium = 0.06, large = 0.14). As secondary analyses, paired-sample t-tests were used to assess within-group pre–post changes, and independent-sample t-tests were used to compare post-test scores between groups. Missing data (<5%) were handled using listwise deletion. All tests were two-tailed, and statistical significance was set at  $p < 0.05$ .

## 3. Findings and Results

A total of 68 children completed the study, with 34 participants in the structured play intervention group and 34 in the control group. Participants were aged between 8 and 11 years ( $M = 9.4$ ,  $SD = 1.1$ ). The sample consisted of 51% boys ( $n = 35$ ) and 49% girls ( $n = 33$ ). There were no statistically significant differences between the intervention and control groups in terms of age or sex distribution ( $p > 0.05$ ), indicating demographic equivalence at baseline (Table 2). Descriptive statistics for self-esteem, perceived physical competence, and psychological well-being at pre- and post-intervention are shown in Table 2. At baseline, no significant differences were observed between the intervention and control groups for any outcome variable ( $p > 0.05$ ). Following the intervention period, the structured play group demonstrated higher mean scores across all outcomes compared with the control group. Specifically, self-esteem increased from  $28.7 \pm 3.5$  to  $32.1 \pm 3.2$  in the intervention group, whereas the control group showed only a slight change ( $28.4 \pm 3.3$  to  $28.9 \pm 3.4$ ). Similar trends were observed for perceived physical competence and psychological well-being (Table 2).

**Table 2**

*Descriptive Statistics of Outcome Measures at Pre- and Post-Intervention*

Outcome	Group	Pre-Intervention Mean $\pm$ SD	Post-Intervention Mean $\pm$ SD
Self-Esteem	Intervention ( $n = 34$ )	$28.7 \pm 3.5$	$32.1 \pm 3.2$
	Control ( $n = 34$ )	$28.4 \pm 3.3$	$28.9 \pm 3.4$
Physical Competence	Intervention ( $n = 34$ )	$65.2 \pm 7.1$	$73.4 \pm 6.5$
	Control ( $n = 34$ )	$64.8 \pm 6.8$	$66.1 \pm 7.0$
Psychological Well-Being	Intervention ( $n = 34$ )	$97.5 \pm 8.2$	$106.3 \pm 7.5$
	Control ( $n = 34$ )	$96.9 \pm 7.9$	$98.1 \pm 8.0$

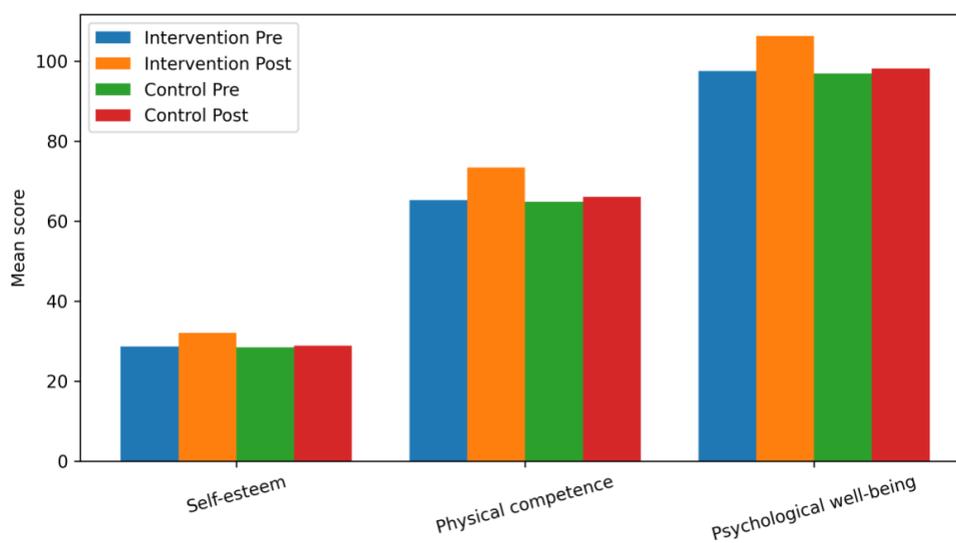
Values are presented as mean  $\pm$  standard deviation.

Means, standard deviations, skewness, kurtosis, and normality tests for the study variables are presented in Table 2. The results of the Shapiro–Wilk test indicated that none of the primary variables followed a normal

distribution ( $p < 0.05$ ), supporting the use of non-parametric and variance-based analytical approaches such as PLS-SEM.

**Figure 1**

*Mean pre- and post-intervention scores for self-esteem, perceived physical competence, and psychological well-being in the intervention and control groups.*



Prior to the main analyses, statistical assumptions were evaluated. The Shapiro–Wilk test indicated that all outcome variables were approximately normally distributed ( $p > 0.05$ ). Visual inspection of Q–Q plots and histograms also supported the assumption of normality. Levene’s tests indicated homogeneity of variances across groups ( $p$ -values ranged from 0.43 to 0.87). Additionally, the assumptions of linearity and homogeneity of regression slopes were satisfied, as no significant interaction was observed between the covariate (baseline scores) and group membership ( $p > 0.05$ ). These findings supported the use of ANCOVA for the primary analyses.

To evaluate the effect of the structured play intervention, analysis of covariance (ANCOVA) was conducted for each outcome variable using post-intervention scores as the dependent variable and baseline

scores as covariates. The results are presented in Table 3. After controlling for baseline differences, the structured play intervention had a significant effect on all outcome variables. Children in the intervention group demonstrated significantly higher self-esteem scores at post-test compared with the control group ( $F(1,65) = 18.42, p < 0.001, \eta^2p = 0.22$ ). Similarly, perceived physical competence was significantly greater in the intervention group than in the control group ( $F(1,65) = 32.15, p < 0.001, \eta^2p = 0.33$ ). Psychological well-being also showed a significant improvement in the intervention group relative to the control group ( $F(1,65) = 24.87, p < 0.001, \eta^2p = 0.28$ ). According to conventional effect size interpretations, these values indicate large intervention effects across all outcomes.

**Table 3**

*ANCOVA Results for the Effects of the Structured Play Intervention on Outcome Variables*

Outcome Variable	F (1, 65)	p-value	Partial $\eta^2$ ( $\eta^2p$ )	Effect Size
Self-Esteem	18.42	< 0.001	0.22	Large

Physical Competence	32.15	< 0.001	0.33	Large
Psychological Well-Being	24.87	< 0.001	0.28	Large

Note. ANCOVA models were conducted using post-intervention scores as dependent variables and baseline scores as covariates. Effect size interpretation follows Cohen’s guidelines (small = 0.01, medium = 0.06, large = 0.14).

Within-group comparisons using paired-sample t-tests are summarized in Table 4. The intervention group showed significant improvements from pre- to post-intervention for all outcomes, including self-esteem ( $t = 7.21, p < 0.001$ ), perceived physical competence ( $t = 9.36, p < 0.001$ ), and

psychological well-being ( $t = 8.12, p < 0.001$ ). In contrast, the control group did not demonstrate statistically significant changes over time in self-esteem ( $p = 0.27$ ), physical competence ( $p = 0.08$ ), or psychological well-being ( $p = 0.15$ ).

**Table 4**

*Within-Group Pre–Post Comparisons for Outcome Variables (Paired-Sample t-Tests)*

Outcome Variable	Group	Pre-Intervention Mean ± SD	Post-Intervention Mean ± SD	t	p-value
Self-Esteem	Intervention	28.7 ± 3.5	32.1 ± 3.2	7.21	< 0.001
	Control	28.4 ± 3.3	28.9 ± 3.4	1.12	0.27
Physical Competence	Intervention	65.2 ± 7.1	73.4 ± 6.5	9.36	< 0.001
	Control	64.8 ± 6.8	66.1 ± 7.0	1.78	0.08
Psychological Well-Being	Intervention	97.5 ± 8.2	106.3 ± 7.5	8.12	< 0.001
	Control	96.9 ± 7.9	98.1 ± 8.0	1.45	0.15

Note. Paired-sample t-tests were conducted separately for each group to evaluate changes between pre- and post-intervention scores.

#### 4. Discussion

The present study examined the effects of an eight-week school-based structured play intervention on self-esteem, perceived physical competence, and psychological well-being in children aged 8–11 years. The findings indicate that children who participated in the structured play program demonstrated significantly greater post-intervention improvements across all three outcomes than children in the control group who continued usual activities. After adjustment for baseline scores, ANCOVA results showed large effects for self-esteem, perceived physical competence, and psychological well-being, supporting the potential value of structured play for promoting both physical and psychosocial development in middle childhood. The improvement in self-esteem observed in the intervention group is consistent with evidence suggesting that engaging children in enjoyable, mastery-oriented movement experiences may strengthen positive self-evaluations. Structured play commonly integrates skill progression, opportunities for success, and positive social interaction, which may reinforce children’s sense of competence and self-worth (25-27). In the present program, cooperative games and skill-based challenges were delivered in a supportive environment, enabling

children to experience achievement with encouragement and constructive feedback. These features align with prior research indicating that programs emphasizing enjoyment and mastery are associated with improvements in children’s self-esteem (27). More broadly, the findings are consistent with the view that self-esteem is shaped through repeated experiences of competence and social validation (28).

Perceived physical competence also increased significantly following the intervention. This finding aligns with research showing that structured, developmentally appropriate activity programs can enhance children’s perceptions of their physical abilities, an important component of physical self-concept and a predictor of continued engagement in physical activity (9). The intervention targeted fundamental movement skills (e.g., running, jumping, balance, and object control), which likely contributed to children perceiving tangible improvements in their motor abilities. Such improvements in perceived competence are consistent with studies reporting benefits of skill-focused, play-based interventions for children’s physical self-perceptions and motor development (29). In addition, the cooperative and team-based structure may have reinforced perceived competence by creating repeated opportunities for successful participation in a socially supportive setting, which is

particularly relevant during middle childhood when peer feedback becomes increasingly influential.

Psychological well-being also improved significantly in the intervention group, suggesting that structured play may support children's emotional and social functioning. This is consistent with previous studies indicating that physical activity—particularly when enjoyable and socially engaging—can contribute to better mood states, reduced stress, and stronger feelings of belonging in children (30, 31). The play-based nature of the program may influence psychological well-being through multiple pathways, including positive affective experiences during activity, strengthened peer relationships through cooperative games, and enhanced self-efficacy as children accomplish progressively challenging tasks (6, 13). Although the present study did not measure biological mediators, it is plausible that neurophysiological mechanisms associated with physical activity (e.g., acute changes in stress-related and mood-related processes) may also contribute. However, these mechanisms should be examined directly in future research. The large effect sizes observed across outcomes highlight the potential of structured play as a multidimensional intervention. Compared with traditional physical education settings that may emphasize competition or performance comparisons, the structured play approach prioritizes inclusivity, enjoyment, and gradual skill progression. This may reduce fear of failure and social comparison while supporting intrinsic engagement, thereby enhancing both psychosocial and physical outcomes over time. The consistent exposure to structured sessions over eight weeks—incorporating warm-up, structured activities, and brief cool-down reflection—may have helped reinforce these benefits.

From a theoretical perspective, the findings align with self-determination theory and competence motivation theory. Self-determination theory proposes that satisfaction of basic psychological needs (competence, autonomy, and relatedness) supports intrinsic motivation and well-being (32, 33). The structured play program was designed to provide skill-appropriate challenges (competence), opportunities for participation and choice during activities (autonomy), and cooperative tasks that encouraged peer interaction (relatedness). Competence motivation theory similarly suggests that repeated successful performance

experiences can strengthen perceived competence and self-concept, which may help explain the observed improvements in perceived physical competence and self-esteem. The findings have practical implications for educators, policymakers, and health professionals. Implementing structured play within schools and community programs may represent a feasible approach to supporting children's physical activity engagement while also promoting positive psychosocial outcomes. Given concerns about childhood inactivity and the increasing recognition of mental and emotional well-being as public health priorities, structured play may provide a low-cost and scalable option that can be integrated into school curricula or after-school programming. Importantly, the emphasis on inclusivity makes this approach potentially suitable for children with varying baseline skill levels and confidence. Several limitations should be considered when interpreting these results. First, the study used a quasi-experimental design with non-random allocation, which may introduce selection bias and limits causal inference. Although baseline values were comparable and ANCOVA adjusted for pre-intervention scores, randomization would strengthen internal validity. Second, the outcomes were assessed using self-report questionnaires, which may be affected by response bias and social desirability. Third, the intervention duration was eight weeks; therefore, the sustainability of effects beyond the immediate post-test period remains unknown. Finally, the sample was recruited from a limited geographic area, which may limit generalizability to other cultural or socioeconomic contexts.

Future research should evaluate the longer-term sustainability of structured play benefits using follow-up assessments and longitudinal designs. Studies using larger and more diverse samples would improve external validity, and inclusion of objective indicators of physical activity (e.g., accelerometry) could provide complementary evidence to self-report outcomes. In addition, implementation research comparing teacher-led versus facilitator-led models may help identify practical delivery approaches for scaling structured play within schools.

## 5. Conclusion

In conclusion, this study provides evidence that an eight-week structured play intervention was associated with significant improvements in children's self-esteem, perceived physical competence, and psychological well-being. The findings support the incorporation of enjoyable, inclusive, and skill-focused play activities within school and community settings to promote holistic development. Overall, structured play appears to be a promising approach for supporting children's physical and psychosocial health during a critical developmental period.

## Authors' Contributions

All authors contributed equally to the conception and design of the study, data collection and analysis, interpretation of the results, and drafting of the manuscript. Each author approved the final version of the manuscript for submission.

## Declaration

AI-assisted tools, including large language models, were utilized solely to enhance English-language clarity and overall presentation. The authors independently reviewed, edited, and verified all content, and they take full responsibility for the accuracy, integrity, and originality of the final manuscript. No AI tool was employed to generate, analyze, or manipulate the study data or results.

## Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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## Declaration of Interest

The authors report no conflict of interest.

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## Ethics Considerations

Ethical approval for the study was obtained from the Islamic Azad University of Aliabad Katoul (Code: IR.IAU.AK.REC.1398.001). Permission was also granted by school authorities prior to data collection.

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