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

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A B S T R A C T

Structured play has been proposed as an effective approach to enhance both physical and psychological health in children. However, empirical evidence on its impact on self-esteem, physical competence, and psychological well-being remains limited.
Objective: This study examined the effects of an eight-week structured play intervention on self-esteem, physical competence, and psychological well-being in children aged 8–11 years. A total of 68 children were recruited from primary schools and assigned to either a structured play intervention group (n = 34) or a control group (n = 34). The intervention consisted of twice-weekly 45-minute sessions incorporating skill-based activities, cooperative games, and reflection periods. Outcomes were assessed using the Rosenberg Self-Esteem Scale (child-adapted), Physical Self-Perception Profile for Children, and KIDSCREEN-27 for psychological well-being. Pre- and post-intervention data were analyzed using ANCOVA, controlling for baseline scores, with effect sizes reported as partial eta squared (η^2p). ANCOVA revealed significant intervention effects on all outcomes. Self-esteem improved significantly in the intervention group compared to 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. Structured play interventions are effective in enhancing self-esteem, physical competence, and psychological well-being in children, highlighting their potential for promoting holistic development in school and community settings.

Keywords: *Child, Play Therapy, Self Concept, Physical Fitness, Mental Health*

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, engaging, and holistic interventions that promote both physical and psychological health 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 physical activity 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. It 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.

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. These positive experiences contribute to a sense of competence, which in turn 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 essential for fostering lifelong 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 supportive context may be especially important for children who are less confident or less physically active, as it reduces fear of failure and social comparison.

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

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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. There is a need for more comprehensive investigations that consider both physical and psychological outcomes to better understand the holistic impact of structured play interventions on child health.

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 structured play interventions on self-esteem, physical competence, and psychological well-being in children. 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. Understanding the impact of structured play 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 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 allow for the evaluation of changes in psychological and physical outcomes following participation in a structured play program while maintaining feasibility within a school-based setting. Measurements were collected at baseline (pre-intervention) and immediately after the 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 to participate in the study. The required sample size was determined using G*Power software (version 3.1) for a mixed-design ANOVA with two groups (structured play intervention and control) and two measurement points (pre- and post-intervention), assuming a medium effect size ($f = 0.25$), $\alpha = 0.05$, and 80% power, which indicated that at least 52 participants were needed; 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 institution, aged 8–11 years, physically able to participate in moderate-intensity structured play activities, and had written informed consent from a parent or guardian along with verbal assent to participate. Children were excluded if they had medical conditions, physical disabilities, or injuries limiting participation, diagnosed neurological, developmental, or psychological disorders affecting self-esteem, physical competence, or psychological well-being, were participating in other organized physical activity or psychological programs during the study period, missed more than 20% of intervention sessions, or had incomplete baseline or post-intervention data. Participants were assigned to either the structured play intervention group or the control group based on convenience assignment, with the control group continuing their regular routines without exposure to the structured play intervention during the study period.

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2.3. *Structured Play Intervention*

The structured play intervention was implemented over a period of 8 weeks, with sessions conducted two times per week, each lasting approximately 45 minutes. The intervention was designed to promote enjoyment, inclusivity, and skill development through age-appropriate play activities. The program consisted of a variety of structured play activities, including cooperative games, movement-based challenges, and skill-focused tasks targeting fundamental motor skills such as running, jumping, throwing, balancing, and coordination. Each session followed a standardized format comprising a warm-up phase, a main activity phase, and a cool-down phase. Activities were progressively modified to increase complexity and challenge while ensuring that all children could participate successfully regardless of their initial skill level. Emphasis was placed on positive reinforcement, encouragement, and group cooperation rather than competition. Facilitators provided constructive feedback to support skill acquisition and promote positive self-perceptions. The intervention was delivered by trained instructors, who followed a structured session plan to ensure consistency across sessions (Table 1). Children in the control group continued with their usual activities during the intervention period, which included regular classroom routines and/or standard physical education classes without exposure to the structured play program. No additional play-based or physical activity interventions were introduced for the control group during the study.

Table 1

Structured Play Intervention Program for Children

Week	Session Components	Sample Activities	Primary Objectives
1	Warm-up (10 min)	Light jogging, stretching	Prepare body for activity; increase heart rate safely
	Main Play (30 min)	Cooperative tag, balance games	Introduce structured play; encourage participation and teamwork
	Cool-down (5 min)	Stretching, deep breathing	Reduce fatigue; reinforce relaxation
2	Warm-up (10 min)	Dynamic stretches, movement imitation games	Develop flexibility and coordination
	Main Play (30 min)	Obstacle courses, relay games	Enhance motor skills and physical competence
	Cool-down (5 min)	Stretching and reflection	Promote self-awareness and recovery
3	Warm-up (10 min)	Jumping jacks, group stretching	Prepare muscles for activity
	Main Play (30 min)	Throwing/catching games, cooperative challenges	Improve hand-eye coordination and teamwork
	Cool-down (5 min)	Light stretching and positive feedback	Support self-esteem development
4	Warm-up (10 min)	Movement imitation, fun dance	Warm-up and improve rhythm
	Main Play (30 min)	Team-building games, partner balance tasks	Encourage collaboration, mastery, and confidence
	Cool-down (5 min)	Relaxation exercises	Reinforce psychological well-being
5	Warm-up (10 min)	Dynamic stretches, group movement	Prepare for complex activities
	Main Play (30 min)	Mini-sports games (soccer, basketball), obstacle course	Develop physical competence, coordination, and problem-solving
	Cool-down (5 min)	Breathing exercises and reflection	Enhance emotional regulation and self-esteem
6	Warm-up (10 min)	Group stretches, movement imitation	Prepare body for activity
	Main Play (30 min)	Cooperative relay challenges, skill circuits	Improve motor skills, teamwork, and participation
	Cool-down (5 min)	Stretching and positive reinforcement	Support self-perception and psychological well-being
7	Warm-up (10 min)	Light jogging, balance exercises	Prepare muscles; increase engagement
	Main Play (30 min)	Combination of previous games, skill challenges	Consolidate learned skills and foster self-efficacy
	Cool-down (5 min)	Relaxation, feedback session	Promote self-esteem and reflection
8	Warm-up (10 min)	Group stretching, fun movement	Prepare for final activities
	Main Play (30 min)	Team challenges and obstacle course	Reinforce skills, teamwork, and enjoyment
	Cool-down (5 min)	Guided relaxation and reflection	Enhance psychological well-being and closure

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2.4. Outcome Measures

Self-Esteem: Children's self-esteem was assessed using the Rosenberg Self-Esteem Scale (child-adapted version), a widely used and validated instrument for children aged 8–12 years (22). The scale consists of 10 items rated on a 4-point Likert-type scale (1 = strongly disagree to 4 = strongly agree), with higher scores indicating higher levels of self-esteem. Sample items include statements such as "I like the way I am" and "I feel that I am a person of worth.". In this study, Cronbach's alpha for this scale was obtained to be 0.91.

Physical Competence: Perceived physical competence was measured using the Physical Self-Perception Profile for Children (PSPP-C) (23). This instrument evaluates children's perceptions of their physical abilities across domains including strength, coordination, and overall physical competence. The PSPP-C consists of 24 items presented in a structured choice format, with responses scored on a 4-point scale, where higher scores indicate higher perceived physical competence. Sample items ask children to choose which statement best describes them, e.g., "Some children are good at sports, and some are not. Which one are you more like?". In this study, Cronbach's alpha for this scale was obtained to be 0.92.

Psychological Well-Being: Children's psychological well-being was assessed using the KIDSCREEN-27 questionnaire (24), a validated and widely used instrument for measuring health-related quality of life and well-being in children aged 8–18 years. The questionnaire comprises 27 items across five domains: physical well-being, psychological well-being, autonomy and parent relations, social support and peers, and school environment. Items are rated on a 5-point Likert scale (1 = never to 5 = always), with higher scores indicating better psychological well-being. The KIDSCREEN-27 has demonstrated good reliability (Cronbach's $\alpha = 0.78–0.85$) and validity across diverse child populations. Example items include statements such as "Have you felt full of energy?" and "Have you been able to do the things you wanted in your free time?". In this study, Cronbach's alpha for this scale was obtained to be 0.90.

2.5. Data Collection Procedure

All assessments were administered one week before (pre-intervention) and one week after (post-intervention) the structured play program. Children completed the questionnaires in a quiet classroom setting under the supervision of the research team and teachers. Standardized instructions were provided, and researchers assisted participants when needed to ensure comprehension and accurate responses. Scoring for all scales followed standard procedures, and raw scores were converted to standardized scores where appropriate for analysis.

2.6. Statistical Analysis

All data were analyzed using SPSS version 29 (IBM Corp., Armonk, NY, USA). Descriptive statistics, including means and standard deviations, were calculated for all outcome variables at pre- and post-intervention. Prior to the main analyses, assumptions were checked: normality of continuous outcome variables (self-esteem, physical competence, and psychological well-being) was assessed using the Shapiro–Wilk test and visual inspection of Q-Q plots and histograms, homogeneity of variance was tested with Levene's test, and the assumptions of linearity and homogeneity of regression slopes were verified through scatterplots and interaction tests between the covariate (pre-test scores) and the independent variable (group). The assumption of independence of observations was ensured by the study design. To examine intervention effects, analysis of covariance (ANCOVA) was conducted for each outcome variable, using post-intervention scores as the dependent variable, pre-intervention scores as covariates, and group (intervention vs. control) as the independent variable, thereby adjusting for baseline differences. Effect sizes were calculated using partial eta squared (η^2p) and interpreted according to Cohen's guidelines (small = 0.01, medium = 0.06, large = 0.14). Additionally, paired-sample t-tests were conducted within each group to examine pre- to post-intervention changes, and independent-sample t-tests were used as secondary checks for group differences at post-test. Missing data (<5%) were handled using listwise deletion. All statistical tests were two-tailed, and statistical significance was set at $p < 0.05$.

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3. Findings and Results

3.1. Participant Demographics

A total of 68 children participated in the study, with 34 children in the structured play intervention group and 34 in the control group. Participants' ages ranged from 8 to 11 years (M = 9.4, SD = 1.1), and 51% were boys (n = 35) while 49% were girls (n = 33). There were no significant differences between groups in age or sex distribution ($p > 0.05$), indicating baseline demographic equivalence (Table 2).

Table 2

Participant Demographics

Variable	Intervention (n = 34)	Control (n = 34)	p-value
Age (years), mean ± SD	9.5 ± 1.2	9.3 ± 1.0	0.52
Sex, n (%)			0.81
– Boys	18 (53%)	17 (50%)	
– Girls	16 (47%)	17 (50%)	

3.2. Descriptive Statistics of Outcome Measures

Means and standard deviations for self-esteem, physical competence, and psychological well-being are presented in Table 3. At baseline, the two groups did not differ significantly on any outcome variable ($p > 0.05$). Post-intervention, the structured play group demonstrated higher mean scores across all outcomes compared to the control group.

Table 3

Descriptive Statistics of Outcome Measures

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

3.3. Pre-Assumption Checks

Prior to conducting the main analyses, assumptions were evaluated to ensure the appropriateness of the statistical tests. Normality of all outcome variables was assessed using the Shapiro–Wilk test, which confirmed approximate normal distribution for self-esteem, physical competence, and psychological well-being ($p > 0.05$), with Q-Q plots and histograms showing no major deviations. Homogeneity of variance was verified using Levene's tests, which indicated equal variances across groups for all outcomes (p-values ranged from 0.43 to 0.87). Finally, assumptions of linearity and homogeneity of regression slopes were confirmed through scatterplots, demonstrating linear relationships between pre- and post-test scores, and interactions between covariates and group were non-significant ($p > 0.05$), supporting the use of ANCOVA for the main analyses.

3.4. Intervention Effects

ANCOVA was conducted for each outcome variable, with post-intervention scores as the dependent variable and pre-intervention scores as the covariate (Table 4). Results indicated that the structured play intervention had a significant positive effect on all outcomes. For self-esteem, the intervention group demonstrated significantly higher scores than the control group at post-test after controlling for baseline scores ($F(1, 65) = 18.42$, $p < 0.001$, $\eta^2p = 0.22$). Similarly, significant group differences were observed for perceived physical competence, with children in the intervention group reporting greater competence compared

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to controls ($F(1, 65) = 32.15$, $p < 0.001$, $\eta^2p = 0.33$). Psychological well-being was also significantly higher in the intervention group than in the control group at post-test ($F(1, 65) = 24.87$, $p < 0.001$, $\eta^2p = 0.28$). These findings indicate that participation in the structured play program led to substantial improvements in self-esteem, physical competence, and psychological well-being among children.

Table 4

ANCOVA Results for Intervention Effects

Outcome	F(1, 65)	p-value	Partial η^2 (η^2p)	Interpretation
Self-Esteem	18.42	<0.001	0.22	Large effect
Physical Competence	32.15	<0.001	0.33	Large effect
Psychological Well-Being	24.87	<0.001	0.28	Large effect

3.5. Within-Group Changes

As illustrated in Table 5, Paired-sample t-tests showed that the structured play group improved significantly from pre- to post-intervention on all measures ($p < 0.001$), whereas the control group showed non-significant changes ($p > 0.05$).

Table 5

Within-Group Pre-Post Comparisons (Paired t-tests)

Outcome	Group	Pre Mean ± SD	Post Mean ± SD	t	p
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

4. Discussion

The present study examined the effects of a structured play intervention on self-esteem, physical competence, and psychological well-being in children aged 8–11 years. The findings indicate that children who participated in the structured play program showed significant improvements across all three outcomes compared to a control group that continued with usual activities. Specifically, the structured play group demonstrated higher post-intervention scores in self-esteem, perceived physical competence, and psychological well-being, with large effect sizes, highlighting the effectiveness of play-based interventions in promoting both physical and psychosocial development in school-aged children.

The improvement in self-esteem observed in the intervention group aligns with previous research suggesting that engaging children in enjoyable, skill-enhancing activities fosters a positive self-image and confidence. Structured play often incorporates elements of success, mastery, and social interaction, which can reinforce children's sense of competence and self-worth (25-27). For example, cooperative games and skill-based challenges in the present study allowed children to experience achievement in a supportive environment, which is consistent with the findings of Falci (2011), who reported that physical activity programs emphasizing enjoyment and mastery led to significant increases in self-esteem among primary school children (27). Similarly, the use of positive reinforcement and constructive feedback during sessions likely contributed to children internalizing their successes and viewing themselves more positively, supporting the theoretical framework that self-esteem develops through repeated experiences of competence and social validation (28).

The observed increases in perceived physical competence are consistent with the literature indicating that structured, progressive, and developmentally appropriate physical

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activities improve children's perceptions of their own abilities. Physical competence, a key component of physical self-concept, is known to influence motivation to participate in physical activity, thereby contributing to lifelong healthy behaviors (9). In the present study, the structured play sessions targeted fundamental motor skills such as running, jumping, balancing, and object control, which likely contributed to children recognizing improvements in their abilities. These findings mirror prior works which demonstrated that skill-focused, play-based interventions enhanced children perceived physical competence and overall motor skill proficiency (29). The integration of cooperative and team-based activities may have further reinforced perceived competence by enabling children to succeed in a social context, which is particularly relevant in middle childhood when peer interactions become increasingly influential.

Psychological well-being also improved significantly in the intervention group, suggesting that structured play can positively impact emotional and social functioning. The results indicated enhanced mood, energy, and social engagement following the intervention. This is consistent with prior studies showing that physical activity, when structured and enjoyable, reduces negative emotions, enhances mood, and promotes a sense of belonging among children (30, 31). The play-based nature of the intervention may have contributed to psychological well-being through multiple mechanisms: the release of endorphins and other neurochemical mediators associated with physical activity, the development of social skills and peer support through cooperative games, and the fostering of a sense of autonomy and achievement as children completed skill-based challenges successfully (6, 13). Collectively, these factors provide both biopsychosocial and developmental explanations for the observed improvements.

The large effect sizes observed in this study across all outcomes underscore the potential of structured play as a holistic intervention. Unlike traditional physical education programs that may emphasize competition or performance outcomes, structured play focuses on inclusivity, fun, and gradual skill progression, creating an environment where children are motivated intrinsically rather than pressured externally. The consistent exposure to structured play over eight weeks, with sessions incorporating warm-up, skill-based activities, and cool-down reflection, may have reinforced both the physical and psychosocial benefits simultaneously. These findings support the growing recognition in child health research that interventions should not only target physical fitness but also psychological and social domains to maximize overall well-being.

From a theoretical perspective, the findings can be interpreted through the lens of self-determination theory and competence motivation theory. Self-determination theory posits that fulfilling the basic psychological needs of competence, autonomy, and relatedness enhances intrinsic motivation and well-being (32, 33). The structured play program satisfied these needs by providing skill-appropriate challenges (competence), opportunities for decision-making during games (autonomy), and cooperative activities that fostered peer interaction (relatedness). Competence motivation theory similarly suggests that experiences of success in physical tasks reinforce motivation and self-concept, which is evident in the improvements in physical competence and self-esteem observed in the study.

The findings have important practical implications for educators, policymakers, and health professionals. Implementing structured play interventions within schools or community programs can provide an effective strategy to promote both physical and mental health in children. Given the global concern about childhood inactivity and the rising prevalence of psychological difficulties such as low self-esteem and anxiety, structured play offers a feasible, low-cost, and enjoyable approach that can be integrated into school curricula, after-school programs, or community sports initiatives. Moreover, the intervention can be adapted to diverse populations and settings, making it a versatile tool in public health promotion.

Despite these positive findings, several limitations should be acknowledged. First, the study employed a quasi-experimental design with non-random group allocation, which may introduce selection bias. Although baseline measures were equivalent and ANCOVA controlled for initial differences, randomization would strengthen causal inferences. Second, the study relied on self-report questionnaires to assess psychological and physical outcomes, which may be influenced by social desirability or response bias. Third, the intervention lasted only eight weeks, and long-term effects on self-esteem, physical

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competence, and psychological well-being remain unknown. Finally, while the sample size was sufficient for detecting medium-to-large effects, the study was conducted in a limited geographic area, which may affect generalizability to other populations or cultural contexts.

Future research should consider longitudinal designs to examine the sustainability of benefits from structured play interventions and explore the potential impact on additional health-related outcomes such as physical fitness, academic performance, and social skills. Studies with larger and more diverse samples, including children with special needs or different socioeconomic backgrounds, would enhance generalizability. Additionally, combining objective measures of physical activity (e.g., accelerometers) with self-report assessments could provide a more comprehensive evaluation of intervention effects. Investigating teacher- or peer-led models of structured play may also offer practical insights for scalable implementation in real-world settings.

5. Conclusion

In conclusion, the present study provides evidence that structured play interventions significantly improve self-esteem, physical competence, and psychological well-being in children. The findings highlight the value of incorporating enjoyable, skill-based, and cooperative play activities into children's daily routines as a means of promoting holistic development. By fostering both physical and psychological health, structured play represents a promising and practical approach for supporting positive child development and enhancing overall quality of life. These results reinforce the importance of integrating play-based strategies into educational and community programs, emphasizing that the benefits of play extend well beyond physical activity alone to encompass meaningful psychosocial outcomes.

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 declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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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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