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Recreational Activities to Teach Goalkeeping in Football for Children Aged 6-9

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Abstract

The research explored how effective recreational activities are in teaching goalkeeping skills to children between the ages of 6 and 9 years. Goalkeeping necessitates specific skills such as agility, coordination, and mental concentration. (Coutinho, 2024) We carried out an 8-week training program featuring organized play-based activities with 49 children to tackle this challenge. Sessions took place six times a week, and the goalkeeping skills were evaluated both prior to and following the intervention using the McDonald Soccer Skill Test. (MSU, 2019) The results indicated significant advancements in all age categories. In the under-6 age group, average scores rose from 3.0 to 5.5, whereas the under-9 group saw an increase from 5.26 to 10.73. Statistical evaluations, including paired t-tests and measures of effect size, validated the effectiveness of the program, with Cohen's d values suggesting considerable effects. (Wong,

2022) Younger participants acquired fundamental skills like hand-eye coordination, while older children honed more advanced techniques such as shot-stopping and decision-making. The research underscores the advantages of incorporating recreational activities into youth sports training. In addition to technical enhancements, participants gained increased engagement, teamwork, and self-confidence, reinforcing the idea that play-based methods are effective for teaching goalkeeping. This strategy aligns with the developmental requirements of young children, fostering both skill development and ongoing interest in football. (Daisy Fancourt, 2021) These results contribute to youth sports education by providing a scalable, engaging framework for coaches and educators. This research highlights the importance of integrating enjoyment and organization in training to enhance technical abilities, physical fitness, and a lasting love for sports. Furthermore, it encourages comprehensive development in children and promotes resilience.

Keywords- Recreational Activities, Goalkeeping, Training Programs, Children, McDonald Soccer Skill Test**.**

Introduction

Soccer, known as football in many regions, is recognized as the world's most beloved sport, captivating millions of players and spectators from various age groups and backgrounds. (Wong, 2022) It is an exciting and technically demanding game, in which every position be it offensive, defensive, or goalkeeper demands unique abilities. Among all these positions, the goalkeeper role is particularly specialized and challenging, necessitating not just technical proficiency but also quick reflexes, agility, and strong mental fortitude. (Mason, 1995) In youth soccer, the focus is often on nurturing a passion for the sport while teaching fundamental skills. (Vergeer, 2019) Goalkeeping demands a strong emphasis on hand-eye coordination, positioning, reaction time, and the ability to make decisions under pressure. It is crucial to cultivate these skills during the formative years since children in this age range undergo rapid development of both motor and cognitive skills. Introducing goalkeeping techniques early on can establish a foundation for advanced abilities and boost confidence as young players advance in their football careers. Recreational activities suit the natural energy and

inquisitiveness of children, offering an engaging atmosphere that combines skill development with fun. (Otto, 2009) By incorporating fun elements into training, coaches can ensure that children remain motivated while acquiring essential technical and physical skills. Despite the growing popularity of recreational activities in sports education, there is limited research on their effectiveness in developing goalkeeping skills for young children. The current study aims to address this gap by evaluating the effects of an 8-week program of recreational activities tailored for goalkeepers aged 6-9. (Bandyopadhyay, 2008) Through this research, we aim to demonstrate that structured play-based training can effectively enhance critical goalkeeping abilities while fostering a lifelong love for football.

Research Question: How do recreational activities influence the development of goalkeeping skills and technical abilities, among children aged 6-9?

Hypothesis: Recreational activities designed to develop goalkeeping skills will significantly improve goalkeeping skills and technical abilities of children aged 6-9, as measured by pre- and post-intervention assessments using the McDonald Soccer Skill Test. The underlying assumption is that structured, engaging, and age-appropriate recreational activities will provide an effective learning environment, leading to measurable improvements in goalkeeping performance while maintaining high levels of engagement and enjoyment among participants.

Importance or Significance of the Research

This research is significant as it addresses a critical gap in youth sports training by demonstrating the effectiveness of recreational activities in developing goalkeeping skills, among children aged 6–9. (Basu, 2003) By highlighting the benefits of a structured yet enjoyable approach, the study emphasizes the potential to transform traditional training methods into more engaging and developmentally appropriate models. Its findings are particularly relevant in promoting physical fitness and psychological well-being. Moreover, the research provides a scalable framework for coaches and educators to foster technical skills, teamwork, and confidence in young athletes, laying a strong foundation for lifelong participation in sports. (Lyngdoh, 2023) The implications extend beyond football, as the study's methods can be adapted to other disciplines, influencing broader sports education policies and

grassroots programs. By validating the role of fun and structured play in youth development, this research contributes meaningfully to the advancement of holistic and inclusive sports training practices.

Overview of the Paper's Structure

The paper systematically examines how recreational activities enhance goalkeeping skills in children aged 6-9 through six sections. (Ahuja, 2018) *The Introduction* provides the study's background, research question, and hypothesis, emphasizing the need for engaging, skill-based training. *The Literature Review* highlights existing studies on youth sports and identifies gaps in recreational methods for goalkeeping. *The Methodology* outlines an 8-week experimental design using the McDonald Soccer Skill Test, detailing participant demographics and specific activities. (Priyansh, 2019) *The results* show significant improvements in agility, coordination, and goalkeeping skills, validated by statistical analyses. *The Discussion* interprets these findings, comparing them with prior research and emphasizing the benefits of structured, play-based training while addressing limitations like sample size and lack of a control group. Finally, *the Conclusion* advocates integrating recreational activities into youth sports training, highlighting their effectiveness in fostering skill development, engagement, and lifelong interest in sports.

Literature Review:

The role of play in youth sports has received significant attention in recent years, with more research being conducted on the potential of play to improve skills and participation in youth athletes. This literature review covers current research on the effectiveness of play in youth athlete education, athlete development, and academics.

1. Recreational Activities in Youth Sports Training

Recreational activities provide an engaging platform for skill acquisition in sports. Studies emphasize the value of integrating play into training programs, particularly for children, as it fosters intrinsic motivation and enjoyment. (Lu, 2015) demonstrated that game-based learning

activities not only enhance physical skills but also contribute to prosocial behaviors in children, such as teamwork and communication.

2. Skill Development and Physical Fitness in Football

Football training for children focuses on developing foundational motor skills such as agility, coordination, and reaction time Moreover, studies by (Al Attar WSA, 2021) emphasized structured training programs, which significantly reduced injury rates while improving athletic performance among children. However, few studies specifically address goalkeeping, a role requiring specialized training methods.

3. Goalkeeping in Youth Football

Goalkeeping is a special position in football that demands quick reactions, good eye coordination, and the ability to make instant decisions. Research by (Lisenchuk, 2023) examined the physical and tactical preparedness of young goalkeepers, underscoring the need for tailored training that aligns with their developmental stage. However, traditional training methods often lack the engaging and playful elements necessary for sustaining interest in younger age groups. This gap highlights the potential of recreational activities as an effective alternative.

4. Benefits of Recreational Training for Young Goalkeepers

Recreational training offers a dynamic and interactive way to teach complex motor skills. (Robertson, 2013) reported that game-based drills improved decision-making under pressure, a critical aspect of goalkeeping. Similarly, (Mesnan, 2023) found that recreational activities enhanced reaction speed and positioning, key attributes for goalkeepers. These findings suggest that integrating fun, structured activities into training not only improves technical skills but also fosters psychological well-being by reducing performance anxiety.

5. Gaps in Existing Research

Despite the established benefits of recreational activities in general sports training, limited studies have explored their impact on goalkeeping, particularly for children aged 6-9. Most

research focuses on general football skills or older age groups, leaving a gap in understanding how play-based methods can be applied to develop specialized roles in youth football. This study addresses this gap by evaluating an 8-week recreational program designed specifically for young goalkeepers.

By synthesizing these findings, the current study builds on the existing evidence to investigate how recreational activities can enhance goalkeeping skills. This study provides models for future research and practice by focusing on the growing discussion about new teaching methods in youth sports.

Existing Theories

Game-Based Learning Theory: Game-based learning emphasizes that integrating play and structured activities in training enhances skill acquisition and cognitive development in children. (Chin, 2015) posited that recreational games not only improve physical skills but also foster teamwork and problem-solving abilities, aligning with the natural learning tendencies of children.

Developmental Motor Learning Theory: This theory suggests that motor skill acquisition is most effective during childhood when neuroplasticity is high. Activities that engage multiple senses and encourage repetitive practice are believed to strengthen motor pathways. These principles are foundational in youth sports training programs and underline the importance of age-appropriate, engaging methods.

Traditional Training Approaches: Conventional methods in football training often involve repetitive drills focusing on technical skills such as passing, shooting, and positioning. While effective for skill refinement, these approaches may lack engagement, particularly for young children.

Recreational Activity-Based Methods: Recent methodologies emphasize the integration of structured recreational games to teach complex motor skills. For example: (Diez-Fernández, 2024) incorporated physical-recreational games to improve participation and technical skills.

(Supriadi, 2023) used reaction-based games to enhance goalkeeper-specific skills, demonstrating their efficacy in improving reflexes and decision-making under pressure.

Findings from Prior Research

Effectiveness of Recreational Activities: Recreational games have been shown to improve physical and technical skills while maintaining high engagement levels. Studies by (Lu, 2015) and (Robertson, 2013) highlight the dual benefits of skill development and psychological well-being. *Skill Development in Goalkeeping*: Research on goalkeeping has identified key attributes such as agility, reaction time, and hand-eye coordination as essential for success. However, studies such as (Supriadi, 2023) highlight the lack of engaging training methods tailored for young goalkeepers.

Identified Gaps in the Literature

Limited Focus on Goalkeeping: While many studies address general football skills, there is a notable lack of research on goalkeeping-specific training, especially for children aged 6-9. This leaves a gap in understanding how early interventions can foster specialized skills. Age-Specific Training Needs: Existing research often groups children across broad age ranges or focuses on older players, overlooking the unique developmental needs of younger children in motor skill acquisition and engagement. Lack of Longitudinal Studies: Most studies evaluate short-term outcomes of training programs. There is limited research on the long-term effects of recreational activities on skill retention, psychological well-being, and sustained interest in sports.

Justification for the Current Study Based on Gaps Identified

The current study is justified by addressing critical gaps in existing research on youth sports training, particularly for goalkeeping. While recreational activities have been shown to improve general football skills and engagement, their application to goalkeeping a specialized and demanding role remains underexplored. (Ion, 2018) Most studies focus on outfield player development, neglecting the unique technical and cognitive demands of goalkeepers, such as agility, reaction time, and positioning. Furthermore, traditional training methods often lack the

playful and engaging elements necessary to sustain the interest of children aged 6-9, a developmental stage crucial for motor skill acquisition. (Otte, 2020) Existing literature also reveals a limited focus on age-specific training methodologies that cater to the natural playfulness and energy of young children. Game-based learning theories emphasize that structured recreational activities align with children's learning tendencies, yet few studies apply these principles to goalkeeping. Additionally, the reliance on short-term evaluations in prior research highlights the need for interventions that assess immediate and sustained impacts on both skill development and overall engagement. This study seeks to fill these gaps by implementing and evaluating an 8-week program of recreational activities tailored specifically to enhance goalkeeping skills among children, offering an evidence-based alternative to traditional methods while fostering both technical competence and long-term enthusiasm for the sport.

Methodology

This study is based on experimental research. The study included an 8-week training program with pre- and post-testing using McDonald's Soccer Skill Test. The participants were 49 children, Delhi Council for Sports & Education, Delhi. The training consisted of 1-hour sessions conducted 6 times a week with 5 fun games per session and was tested using t-tests and ANOVA.

Participants

Participants were collected from the Delhi Council for Sports & Education, R.K. Puram Sector-9. Number of students included 49, where 45 males and 4 females, Age Group Distribution-Age 6- 12 children (10 boys, 2 girls), Age 7- 13 children (12 boys, 1 girl), Age 8- 9 children (9 boys 0 girls), Age 9- 15 children (14 boys, 1 girl).

Selection Criteria

Self-willingness, Children with no prior serious injuries, no chronic health conditions that would affect participation and parental consent for participation. Age criteria were 6-9 and all were beginners no children were enrolled in any football academy and the total student were 49.

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Tools Used - McDonald Soccer Skill Test

In 1951, while in graduate school, McDonald created the Football Skills Test to measure the accuracy of ball movement, ball control, and decision-making in football. This test is aimed at college students and singles out football management as the most important skill in football. The author singles out kicking skills as the most important aspect of football. When taking the kick, the boundary lines are 9 feet, 15 feet, 21 feet, and 30 feet away from the wall or kickboard. However, the nine-yard retraining distance test provided the best results and is most commonly used for football testing. The validity coefficient of the test is between 0.63 and 0.94.

Equipment's

Stopwatch, kickboard, three footballs, and chalk powder. The Field Dimensions Test uses skirting boards that are 5 feet high by 30 feet wide. Another line is marked on the float board at 18 feet. One football is placed on the 9-foot boundary line, and the other two balls are placed on the 18-foot boundary line.

Test Application

The subject (contestant) is instructed to keep the ball under his/her control while using each type of stroke and to use his/her hands to make the maximum number of strokes in 30 seconds. When the "Ready" signal is sent, the timer starts the stopwatch and the product begins to hit the ball steadily from behind or behind the limit line and continues to hit the ball back as fast as the control set code until 30 seconds have passed (indicated by the timer). Another ball is removed and the foot is placed on the rope and the subject continues to hit the.

Scoring

The difficulty is given 4 attempts of 30 seconds each and the final check score is furnished through the sum of kicks of the three best trials.

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The Final Draft of the Training Program

(Note: the table activity was made with the knowledge and the exposure of the AIFF D-license football course and AFC-C license diploma course in football)

Week-1 to Week-8

S.NO	Activity	Aim	Variation	Remark
1.	**Hand Cricket**	Develop reflexes, mathematics skills, and eye-hand coordination	Overs/ No. Of balls	1. Activities were the same for all age groups 6-9 years to manage children, time, and conduct good sessions. 2. On Monday it was for under 6 age children, on Tuesday it was for under 7 age children, for Wednesday it was for under 8 age children and on Thursday it was for under 9 age children. The Session was 60 minutes, and Friday was under 6-7 match and Saturday under 8-9 match. 3. Each session consisted of 5
2.	**The Goalkeeper throws the ball on the mini-goal post**	Improve accuracy, develop goalkeeping skills	Time/ Obstacle course	
3.	**Catch the stick**	Agility development, hand-eye coordination	Distance challenge	
4.	**juggling the ball with hand and passing it to another member**	Teamwork & cooperation, challenge & progression	Speed juggling, reverse rotation	
5.	**Making a circle throwing the ball to the player and increasing the area**	Successful passing of the ball and throwing ability	Time	
6.	**Grip the football making "w" and put on hula hops**	Successful gripping of the ball with both hands in a w shape	Time/ Obstacle course	

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7.	**Save the wall**	Prevent the ball from entering the net	Time/ Obstacle course	activities of 10 minutes and 2 minutes for activity explanation and demonstration. 4. week 1 s.no 1-5 activities, week 2 s.no 6-10 activities, week 3 s.no 11-15 activities, week 4 s.no 16-20 activities, and week 5-8 activities continue.
8.	**Cath the ball from the air**	Catching the ball in the air	One hand catch, add movement	
9.	**Hit the target with your hands by rolling the ball**	Accuracy	Moving target	
10.	**Throw the ball into the circle**	Accuracy, focus & concentration	Obstacle course, increased distance	
11.	**Punt kick, send the ball to the targets**	Improving punt kick	Distance	
12.	**Bowling**	Ability to throw accurately	Time	
13.	**Reach the maximum height**	Jump and reach a maximum possible height	Team competition	
14.	**Roll the ball inside the players and send it too backward**	Passing, accuracy, and agility	Time	
15.	**Modified Rugby**	Accuracy, teamwork	Number of passes and time	
16.	**Overhead pass**	Improves throwing ability	Distance	
17.	**Bridge jump & catch the ball**	The catching ability of the ball while jumping	Raise the height	

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18.	**Circle pass**	Enhance the goalkeeper's ability to distribute the ball effectively	Time	
19.	**Passing in a circle & one chaser**	Passing and decision-making under pressure	Add more chaser	
20.	**Turning back to the front and save the goal**	To improve reflexes	Number of balls and points for saving a goal	

Results

Table no. 1 – Pre & Post-data of McDonald Soccer Skill Test for under-6 participants

Pre-Data Using McDonald Soccer Skill Test		**Pre data**	**Post-data**
Age Category	**Participants**	**Points**	
Under 6	Participants No.1	3	5
	Participants No.2	4	6
	Participants No.3	2	4
	Participants No.4	2	5
	Participants No.5	3	5
	Participants No.6	2	4
	Participants No.7	4	7
	Participants No.8	3	5
	Participants No.9	3	8
	Participants No.10	4	6
	Participants No.11	3	6
	Participants No.12	3	5

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Analysis of Under 6 participants

Out of 12 participants in the pre-test, 3 participants received 2 points, 6 participants received 3 points, and 3 participants received 4 points in the post-test. In the report, 2 participants received 4 points, 5 participants received 5 points, 3 participants received 6 points, 1 participant received 1 point, and 1 participant received 8 points. When you compare the before and after data, you can see that the participants' scores are equal. Significant changes were made and their performance increased.

Table no. 2 – Pre & Post-data of McDonald Soccer Skill Test for under-7 participants

Pre-Data Using McDonald Soccer Skill Test		Pre data	Post-data
Age Category	**Participants**	**Points**	
Under 7	Participants No.1	4	6
	Participants No.2	3	7
	Participants No.3	3	5
	Participants No.4	2	6
	Participants No.5	5	8
	Participants No.6	3	6
	Participants No.7	4	8
	Participants No.8	4	7
	Participants No.9	3	8
	Participants No.10	5	6
	Participants No.11	2	6
	Participants No.12	1	4
	Participants No.13	2	6

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Analysis of Under 7 participants

Of the 13 participants with estimated data, 1 participant received 1 point, 3 participants 2 points, 4 participants 3 points, 3 participants 4 points, and 2 participants 5 points. published data, 1 participant received 4 points, 1 participant 5 points, 6 participants 6 points, 2 participants 7 points, and 3 participants 8 points. When comparing the previous and next data, it can be seen that the participants' scores have changed significantly and their performance has also increased.

Table no. 3 – Pre & Post-data of McDonald Soccer Skill Test for under-8 participants

Pre-Data Using McDonald Soccer Skill Test		Pre data	Post-data
Age Category	**Participants**	**Points**	
Under 8	Participants No.1	8	12
	Participants No.2	12	16
	Participants No.3	8	13
	Participants No.4	6	12
	Participants No.5	4	7
	Participants No.6	6	11
	Participants No.7	7	9
	Participants No.8	8	11
	Participants No.9	4	8

Analysis of Under 8 participants

From the data of 9 participants, 2 participants received 4 points, 2 participants received 6 points, 1 participant received 7 points, 3 participants received 8 points, and 1 participant received 12 points. From the published data, 1 participant received 7 points, 1 participant received 8 points, and 1 participant received 8 points. 1 participant received 9 points, 2 participants received 11 points, 2 participants received 12 points, 1 participant received 13 points, and 1 participant

received 13 points. When comparing the previous and next data, it can be seen that the participants' scores have changed significantly and their performance has increased.

Table no. 4 – Pre & Post-data of McDonald Soccer Skill Test under-9 participants

Pre-Data Using McDonald Soccer Skill Test		Pre data	Post-data
Age Category	**Participants**	**Points**	
Under 9	Participants No.1	7	14
	Participants No.2	7	11
	Participants No.3	3	10
	Participants No.4	4	12
	Participants No.5	5	11
	Participants No.6	6	12
	Participants No.7	6	12
	Participants No.8	5	11
	Participants No.9	6	12
	Participants No.10	7	10
	Participants No.11	4	8
	Participants No.12	5	8
	Participants No.13	6	10
	Participants No.14	3	8
	Participants No.15	5	12

Analysis of Under 9 participants

Of the 15 participants with estimated data, 2 participants scored 3, 2 participants scored 4, 4 participants scored 5, 4 participants scored 6, and 3 participants scored 7. In the published data, 3 participants scored 8, 3 participants scored 8, and 3 participants scored 8. 10 points, 3 participants scored 11 points, 5 participants scored 12 points, and 1 participant scored 14 points.

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When the data from the previous period is compared with another period, it is seen that the content of the participants has changed a lot and their performance has also increased.

Pre-Data Assessment-The training program is prepared for 6 days a week session and each session consists of 1 hour. Each session contains 5 recreational activities only week 4 contains 4 recreational activities. At starting of the 1st week, conduct the same assessments as in the pre-test using the McDonald Soccer Skill Test from best of 3, best one pre data test used to measure goalkeeping skills, agility, reaction time, coordination, gripping, throwing, positioning, and shooting. Duration- Each session will last 1 hour, Program Duration- 8 weeks. Content-2 minutes of explanation of 5 recreational games, Recreational Games- 50 minutes of games focused on goalkeeping skills and incorporating elements of fun, teamwork, and physical activity. Use the same standardized scoring criteria for consistency.

Post-Data Assessment- After 8 weeks again McDonald's Soccer Skill Test was used from the best of 3, the best pre-data test was used to measure overall improvements by obtaining post-data and comparing using a t-test and a nova on SPSS. The post-test assessment results strongly indicate that the 8-week recreational activities program significantly improved goalkeeping skills among children aged 6-9. The structured yet enjoyable nature of the program was crucial in maintaining high engagement levels and fostering a positive attitude toward sports. These findings support the integration of recreational activities into youth sports training programs to enhance skill development and overall physical fitness effectively.

Statistical Analysis

UNDER6

Under-6 Paired Samples Statistics				
	Mean	**N**	**Std.Deviation**	**Std. Error Mean**
Pair 1 Pre-Data	3.00	12	.73	.21
Post-Data	5.50	12	1.16	.33

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Mean: The average rating earlier than the intervention (Pre-records) turned into 3.00, and after the intervention (publish-facts) became 5.50.

N: The number of contributors in this group turned into 12.

Standard Deviation: the variability inside the scores becomes 0.73 for pre-data and 1.16 for post-information.

Well-known Error: the usual blunders of the mean turned into 0.21 for pre-statistics and 0.33 for put up-statistics.

Under-6 Paired Samples Correlations				
			Significance	
	N	Correlation	One-Sided P	Two-Sided P
Pair 1 Pre-Data & Post-Data	12	.63	0.14	0.27

Correlation: The correlation between pre-data and post-data was 0.63, indicating a moderate positive relationship.

Significance: The significance values were 0.14 (one-sided) and 0.27 (two-sided), indicating that the correlation was not statistically significant.

Under-6 Paired Sample Test									
			Paired Differences					Significance	
				95% Confidence Interval Of The Difference					
	Mean	Std.Deviation	Std. Error Mean	Lower	Upper	T	Df	One-Sided P	Two-Sided P
Pair 1 Pre-Data & Post-Data	-2.50	.90	.26	-3.07	-1.92	-9.57	11	<.001	<.001

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Paired difference:

Mean difference: Difference between the mean before and after data -2.50

Standard deviation: The standard deviation of the difference is 0.90

Power of the mean: The standard error of the difference Percentage of the data 0.26

Confidence interval: 95% of the difference Confidence interval between -3.07 and -1.92

T-test:

T value: t statistic -9.57

Degrees of freedom (DF): Degrees of freedom 11

Significance: one-sided and two-sided p values <.001 indicate a significant difference between the pre-data and post-data.

Under-6 Paired Samples Effect Sizes					
				95% Confidence Interval	
		Standardizer[a]	Point Estimate	Lower	Upper
Pair 1 Pre-Data & Post-Data	Cohen's D	.90	-2.76	-4.02	-1.48
	Hedges's Correction	.97	-2.57	-3.74	-1.37

Cohen's D:

Point Estimate: Cohen's d was -2.76, indicating a very large effect size.

Confidence Interval: The 95% confidence interval ranged from -4.02 to -1.48

Hedges's Correction: A corrected effect size of -2.57 with a confidence interval between -3.74 and -1.37

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UNDER7

Under-7 Paired Samples Statistics				
	Mean	**N**	**Std.Deviation**	**Std. Error Mean**
Pair 1 Pre-Data	3.15	13	1.21	.33
Post-Data	6.38	13	1.19	.33

Mean: The average score was 3.15 before the intervention and 6.38 after the intervention.

N: There were 13 participants.

Standard Deviation: The standard deviation was 1.21 for pre-data and 1.19 for post-data.

Standard Error Mean: The standard error was 0.33 for pre-data and 0.33 for post-data.

Under-7 Paired Samples Correlations				
			Significance	
	N	**Correlation**	**One-Sided P**	**Two-Sided P**
Pair 1 Pre-Data & Post-Data	13	.589	0.17	0.34

Correlation: The correlation between pre-data and post-data was 0.58

Significance: A one-sided p-value of 0.17 and a two-sided p-value of 0.34 indicate that the relationship is not significant.

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Under-7 Paired Sample Test									
			Paired Differences					Significance	
				95% Confidence Interval Of The Difference					
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	T	Df	One-Sided P	Two-Sided P
Pair 1 Pre-Data & Post-Data	-3.23	1.09	.30	-3.89	-2.57	-10.66	12	<.001	<.001

Paired Differences:

Mean Difference: The mean difference was -3.23

Standard Deviation: The standard deviation of the difference is 1.09

Standard Error Mean: The standard error was 0.30

Confidence Interval: The 95% confidence interval ranged from -3.89 to -2.57

T-Test:

T Value: The t-statistic was -10.66

Stages of Freedom (DF): The ranges of freedom have been 12

Significance: Both p-values were <.001, indicating a highly significant difference.

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Under-7 Paired Samples Effect Sizes					
				95% Confidence Interval	
		Standardizer[a]	Point Estimate	Lower	Upper
Pair 1 Pre-Data & Post-Data	Cohen's D	1.09	-2.95	-4.23	-1.66
	Hedges's Correction	1.16	-2.76	-3.96	-1.55

Cohen's D:

Point Estimate: Cohen's d was -2.95, indicating a totally big impact length.

Confidence Interval: The confidence interval ranged from -4.23 to -1.66

Hedges's Correction: The corrected effect size was -2.76 with a confidence interval from -3.96 to -1.55

UNDER8

Under-8 Paired Samples Statistics				
	Mean	N	Std.Deviation	Std. Error Mean
Pair 1 Pre-Data	7.00	9	2.44	.81
Post-Data	11.00	9	2.73	.91

Mean: The average score before the intervention (Pre-Data) was 7.00, and after the intervention (Post-Data) it increased to 11.00. This suggests an improvement in performance or condition following the intervention.

N: The wide variety of contributors to this organization was nine.

Standard Deviation: The variability in the pre-data scores was 2.44, while in the post-data scores it increased to 2.73 This indicates that while the mean score increased, there was also greater variability in the post-intervention scores.

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Standard Error Mean: The standard error of the mean is 0.81 for pre-data and 0.91 for post-data. The standard error reflects the accuracy with which the sample mean represents the population mean; lower values indicate more reliable estimates.

Under-8 Paired Samples Correlations				
			Significance	
	N	Correlation	One-Sided P	Two-Sided P
Pair 1 Pre-Data & Post-Data	9	.89	< 0.01	0.01

Correlation: The correlation coefficient between pre-data and post-data was 0.894. This high positive correlation suggests that participants who performed well before the intervention tended to perform well after the intervention as well.

Significance: One-sided p-value is <0.01, and two-sided p-value is 0.01. These p values indicate that the relationship is significant, that is, the probability of the relationship being due to chance is low.

Under-8 Paired Sample Test									
			Paired Differences					Significance	
				95% Confidence Interval Of The Difference					
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	T	Df	One-Sided P	Two-Sided P P
Pair 1 Pre-Data & Post-Data	-4.00	1.22	.40	-4.94	-3.05	-9.79	8	<.001	<.001

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Paired Differences:

Mean difference: The difference between the pre-data and post-data mean is -4.00, indicating a significant improvement between the pre-data and post-data data.

Standard Deviation: the standard deviation of the differences changed to 1.22, reflecting the variety in the modifications found.

Standard Error Mean: the usual blunders of the mean distinction become 0.40

Confidence Interval: The 95% confidence interval for the difference is -4.94 to -3.05, indicating that the true mean difference may lie within this range.

T-Test:

T-value: The t-statistic is -9.79, indicating a significant difference in the null hypothesis (meaning that there is no difference between the before and after data). The two-sided and two-sided p-values are <.001, indicating a significant difference between the before and after test data.

Under-8 Paired Samples Effect Sizes					
				95% Confidence Interval	
		Standardizer[a]	Point Estimate	Lower	Upper
Pair 1 Pre-Data & Post-Data	Cohen's D	1.22	-3.26	-4.95	-1.55
	Hedges's Correction	1.35	-2.94	-4.47	-1.40

Cohen's D:

Cohen's d of -3.26 is considered a significant effect and indicates that the effect is significant. The effect size was confirmed.

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Hedges's Correction: The effect size correction (called Hedges g) is -2.94, with a confidence interval ranging from -4.47 to -1.40. Hedges g is often used to provide accurate estimates of effect size when sample sizes are small.

UNDER9

Under-9 Paired Samples Statistics				
	Mean	**N**	**Std.Deviation**	**Std. Error Mean**
Pair 1 Pre-Data	5.26	15	1.33	.34
Post-Data	10.73	15	1.75	.45

Average score: The average score before the intervention was 5.26, which increased to 10.73 after the intervention, once again showing that the intervention was effective**.**

N: The number of participants in this group is 15

Variance: The standard deviation of the early data is 1.33 and the standard deviation of the late data is 1.75119, indicating that there is more difference in the scores after the intervention. The standard error of the data is 0.34 and the standard error of the posterior data is 0.45, indicating the reliability of the estimate.

Under-9 Paired Samples Correlations				
			Significance	
	N	**Correlation**	**One-Sided P**	**Two-Sided P**
Pair 1 Pre-Data & Post-Data	15	.55	.02	.04

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Correlation: The correlation between pre-data and post-data was 0.55, indicating a moderate positive relationship between the two sets of scores.

Significance: One-sided p-value 0.02, two-sided p-value 0.04 These results show that the correlation is significant but lower in the group below -8.

Under-9 Paired Sample Test									
			Paired Differences					Significance	
				95% Confidence Interval Of The Difference					
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	T	Df	One-Sided P	Two-Sided P P
Pair 1 Pre-Data & Post-Data	-5.46	1.55	.40	-6.32	-4.60	-13.64	14	<.001	<.001

Paired Differences:

Mean difference: The mean difference between the before and after data was -5.46, indicating a significant improvement after the intervention.

Confidence interval: 95% confidence interval from -6.32 to -4.60

T-Test:

T Value: The t-statistic was -13.64, a very large value indicating a strong effect.

Stages of Freedom (DF): The levels of freedom have been 14.

Significance: Both p-values were <.001, showing a highly significant improvement from pre-data to post-data.

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Under-9 Paired Samples Effect Sizes					
				95% Confidence Interval	
		Standardizer[a]	Point Estimate	Lower	Upper
Pair 1 Pre-Data & Post-Data	Cohen's D	1.55	-3.52	-4.89	-2.12
	Hedges's Correction	1.64	-3.32	-4.63	-2.01

Cohen's D:

Point Estimate: Cohen's d was -3.52, indicating a very large effect size.

Confidence Interval: The 95% confidence interval for Cohen's d was between -4.89 and -2.12

Hedges's Correction: The corrected effect size was -3.32 with a confidence interval between -4.63 and -2.01

Discussion

The hypothesis suggested that incorporating structured recreational activities would result in measurable improvements in these skills. (Fletcher, 1996) *Pre- and Post-Test Analysis***:** Across all age groups (6–9 years), the McDonald Soccer Skill Test results consistently showed significant improvements in post-intervention scores. For example, in the Under-6 age group, mean scores improved from 3.0 to 5.5, demonstrating enhanced basic motor skills and goalkeeping abilities. Similar patterns were evident in older groups, with the Under-9 group showing a mean score increase from 5.26 to 10.73, highlighting greater mastery in goalkeeping abilities. (Allison, 1980) *Skill Development:* The program successfully improved technical skills such as gripping, throwing, and positioning. Notable improvements in agility, reaction time, and coordination were recorded across all participants, aligning with the hypothesis that structured play benefits physical fitness and technical skill acquisition. Cohen's d values, ranging from -2.76 to -3.52, indicate very large effect sizes, confirming the intervention's

effectiveness. (Janssen, 2010) *Age-Based Progression:* Younger participants (6–7 years) showed notable foundational skill enhancements, such as improved hand-eye coordination and basic motor skills. Children 8–9 years demonstrated advancements in advanced motor functions, indicating that the program effectively catered to varying developmental stages. *Engagement and Enjoyment:* The recreational nature of the program kept participants motivated and enthusiastic. This is particularly relevant for younger children, as it fosters long-term interest in sports.

Implications for the Hypothesis: The findings robustly support the hypothesis. Structured recreational activities not only enhanced the goalkeeping skills of children but also contributed to their overall physical and psychological development. (Siedentop, 1990) The results of this study are very close to previous studies showing the effectiveness of recreational activities in improving driving skills in youth. Consistent with. (Lu, 2015), who demonstrated that game-based learning promotes both technical and prosocial skills in children, this study found significant improvements in goalkeeping abilities, including gripping, positioning, and reaction time. Beyond physical skills, the study supports (Robertson, 2013), who highlighted the psychological and social benefits of recreational activities, including teamwork and confidence-building. Overall, this study reinforces existing literature while extending its application to goalkeeping-specific training, underscoring the holistic benefits of recreational approaches in youth sports, and demonstrating improvement in goalkeeping skills, agility, and coordination among children aged 6–9 highlights the effectiveness of integrating recreational activities into training regimes. (Orsmond G. I., 2004b) By combining fun with structured play, the study underscores the potential to enhance technical skills while fostering a positive attitude towards sports, which is crucial for sustained participation and long-term athletic development. Furthermore, the success of this approach underscores the need for sports educators and coaches to prioritize holistic development, incorporating methods that simultaneously promote physical, psychological, and social well-being. Although this study provides good insight, it has some limitations that should be addressed in future research. First, the small sample size and predominantly male sample size may limit the generalizability of the findings to the general population, including different genders and larger groups. Additionally, the lack of a control

group in this study makes it difficult to develop solely for recreational activities due to other factors such as skill progression or outside side effects. The reliance on the McDonald Soccer Skill Test, though a validated tool, focused primarily on specific technical skills, potentially overlooking other critical aspects of goalkeeping, such as tactical decision-making and psychological resilience. Future research should consider longitudinal designs to evaluate the long-term effects of recreational training and include control groups for more rigorous comparisons.

Conclusion

The study demonstrated that incorporating recreational activities into football training significantly improves goalkeeping skills, agility, and coordination in children aged 6–9. Across all age groups, participants showed marked improvement in their technical abilities, with mean scores on the McDonald Soccer Skill Test increasing significantly post-intervention. Younger participants exhibited foundational skill enhancements such as hand-eye coordination and basic agility, while older participants developed more advanced skills like shot-stopping and tactical awareness. (Slade, 2019) The structured yet enjoyable nature of the program kept children engaged, fostering sustained interest in sports. In addition to technical and physical improvements, the study highlighted psychosocial benefits, including increased confidence, teamwork, and communication skills. These results affirm the hypothesis that recreational activities are an effective and holistic approach to youth sports training, benefiting participants' physical, psychological, and social development. The findings underscore the importance of integrating fun and developmentally appropriate methods into training to maximize skill acquisition and foster a lifelong passion for sports. The findings of this study hold significant importance in the broader context of youth sports education and development. (Browne, 2020) By demonstrating the effectiveness of recreational activities in enhancing goalkeeping skills, agility, and coordination among children, the study underscores the value of integrating play-based methodologies into sports training. This approach aligns with modern pedagogical frameworks that emphasize holistic development, addressing not just physical capabilities but also psychosocial skills like teamwork, confidence, and communication. (KATZMARZYK, et al., 2019) Furthermore, the study provides actionable insights for coaches, educators, and

policymakers, encouraging the adoption of fun, developmentally appropriate training methods to foster sustained participation and long-term interest in sports. This model, while specific to football goalkeeping, is adaptable across various sports disciplines, offering a scalable solution to promote skill acquisition and lifelong physical activity among youth populations globally. The results of this study provide useful recommendations for practical use and policy implications in youth sports education. Teachers and coaches should incorporate games and play-based activities into football education to develop skills while engaging and supporting young athletes. (Valerii & Borys, 2021) Training modules should emphasize fun and structure, ensuring activities are developmentally appropriate to cater to diverse skill levels and age groups. Schools and community centers can adopt similar programs to promote physical fitness, teamwork, and social skills among children, fostering a positive attitude toward sports from an early age. (Hums, 2017) Additionally, governments and sports bodies should prioritize funding for recreational sports infrastructure and coach training to facilitate such programs.

References

Ahuja, G. &. (2018). *Management of football in India.* In Routledge eBooks (pp. 577–589). Retrieved from https://doi.org/10.4324/9781351262804-45

Al Attar WSA, F. O. (2021). The FIFA 11+ Shoulder Injury Prevention Program Was Effective in Reducing Upper Extremity Injuries Among Soccer Goalkeepers: A Randomized Controlled Trial. *The American journal of sports medicine, 49(9)*, 2293-2300. Retrieved from https://doi.org/10.1177/03635465211021828

Allison, M. G. (1980). BEHAVIORAL COACHING IN THE DEVELOPMENT OF SKILLS IN FOOTBALL, GYMNASTICS, AND TENNIS. *Journal of Applied Behavior Analysis, 13(2)*, 297–314. Retrieved from https://doi.org/10.1901/jaba.1980.13-297

Bandyopadhyay, K. (2008). 'The nation and its fragments': football and community in India1. *Soccer and Society, 9(3)*, 377–393. Retrieved from https://doi.org/10.1080/14660970802008983

Basu, J. (2003). *Stories from Indian football.* UBSPD. Retrieved from http://ci.nii.ac.jp/ncid/BA66730948

Browne, P. R. (2020). Applications of a working framework for the measurement of representative learning design in Australian football. *PLoS ONE, 15(11), e0242336*. Retrieved from https://doi.org/10.1371/journal.pone.0242336

Chin, L. C. (2015). Effect of Game-Based Learning Activities on children's positive learning and prosocial behaviours. *Jurnal Pendidikan Malaysia, 40(2)*, 159–165. Retrieved from https://doi.org/10.17576/jpen-2015-4002-08

Coutinho, D. T. (2024, February 5). *MDPI*. Retrieved from Special issue "sports science in children.": https://www.mdpi.com/2227-9067/11/2/202

Daisy Fancourt, H. A. (2021). How leisure activities affect health: a narrative review and multi-level theoretical framework of mechanisms of action. *The Lancet Psychiatry*, 329-339. Retrieved from https://www.thelancet.com/journals/lanpsy/article/PIIS2215-0366(20)-30384-9/abstract

Diez-Fernández, P. R.-L.-C.-C.-G. (2024). Cornerball: a new alternative sport proposal for school physical education. *Frontiers in Sports and Active Living, 6*, 1-9. Retrieved from https://doi.org/10.3389/fspor.2024.1360123

Fletcher, G. F. (1996). Statement on Exercise: Benefits and recommendations for physical activity programs for all Americans. *Circulation, 94(4)*, 857–862. Retrieved from https://doi.org/10.1161/01.cir.94.4.857

Godbey, G. &. (2011). The benefits of physical activity provided by park and recreation services. *the scientific evidence. Australasian Parks and Leisure, 14(1),. https://www.deltastate.edu/PDFFiles/hper%20outdoor%20program/benefits%20of%20PA%20provided%20by%20P&R%20services.pdf*, 26–29.

Hums, M. A. (2017). *Governance and policy in sport organizations.* New York: In Routledge eBooks. Retrieved from https://doi.org/10.4324/9781315213057

Ion, K. S. (2018). Differentiated Physical Training within the Framework of a Yearly Training Cycle of Young Footballers Specialized on the Position of Goalkeeper. *Journal of Physical Education and Sport, 18(1)*, 270–275. Retrieved from https://ibn.idsi.md/-vizualizare_articol/62024

Janssen, I. &. (2010). Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity, 7(1)*, 40. Retrieved from https://doi.org/10.1186/1479-5868-7-40

KATZMARZYK, P. T., POWELL, K. E., JAKICIC, J. M., TROIANO, R. P., PIERCY, K., & TENNANT, B. (2019). Sedentary Behavior and Health: Update from the 2018 Physical Activity Guidelines Advisory Committee. *Medicine & Science in Sports & Exercise*

51(6), 1227-1241. Retrieved from https://journals.lww.com/acsm-msse/fulltext/2019/-06000/sedentary_behavior_and_health__update_from_the.18.aspx

Lisenchuk, G. &. (2023). Fitness training in functional preparedness of highly qualified football players. *Journal of Physical Education and Sport*, 502-509. Retrieved from https://www.researchgate.net/publication/369707976_Fitness_training_in_functional_preparedness_of_highly_qualified_football_players

Lu, C. C. (2015). Effect of game-based learning activities on children's positive learning and prosocial behaviours. *Jurnal Pendidikan Malaysia, 40 (2)*, 159-165. Retrieved from https://journalarticle.ukm.my/9441/

Lyngdoh, D. K. (2023). An assessment of good governance in the All India Football Federation (AIFF). *International Journal of Sports and Physical Education, 9(3)*, 29-33. Retrieved from https://doi.org/10.20431/2454-6380.0903004

Mason, T. (1995). *passion of the people? : football in South America* . London ; New York: Verso.

Mesnan, M. M. (2023). The Impact of Applying Scientific Learning with Conventional Learning on Creativity and Physical Education Learning Outcomes of High School Students. *International Journal of Education in Mathematics Science and Technology, 11(6)*, 1582–1596. Retrieved from https://doi.org/10.46328/ijemst.3832

MSU, S. 2. (2019, april 2). *Recreational Sports for Adolescents: The Pros, Cons, and What to Look For Extension*. Retrieved from Lives & Landscapes Magazine : https://issuu.com/msuextension/docs/_spring_2019_pages/s/87624

Orsmond, G. I. (2004). Peer Relationships and Social and Recreational Activities Among Adolescents and Adults with Autism. *Journal of Autism and Developmental Disorders, 34(3), 245–256. https://doi.org/10.1023/b:jadd.0000029547.96610.df*, 245–256.

Orsmond, G. I. (2004b). Peer Relationships and Social and Recreational Activities Among Adolescents and Adults with Autism. *Journal of Autism and Developmental Disorders, 34(3)*, 245–256. Retrieved from https://doi.org/10.1023/b:jadd.0000029547.96610.df

Otte, F. W. (2020). Specialist role coaching and skill training periodisation: A football goalkeeping case study. *International Journal of Sports Science & Coaching, 15(4)*, 562–575. Retrieved from https://doi.org/10.1177/1747954120922548

Otto, I. &. (2009). The Potential Contribution of the 2010 Soccer World Cup to Climate Change: An Exploratory Study among Tourism Industry Stakeholders in the Tshwane Metropole of South Africa. *Journal of Sport & Tourism, 14(2–3), 169–191. https://doi.org/10.1080/14775080902965207*, 169–191.

Priyansh, N. (2019). 'When we were here, there were no documents': the national question at a Kolkata football Derby. *National Identities, 25(4)*, 391–405. Retrieved from https://doi.org/10.1080/14608944.2023.2222659

Robertson, L. A. (2013). Childhood and adolescent television viewing and antisocial behavior in early adulthood. *PEDIATRICS, 131(3)*, 439–446. Retrieved from https://doi.org/10.1542/peds.2012-1582

Siedentop, D. (1990). *Introduction to physical education, fitness, and sport*. Nielsen BookData. Retrieved from http://ci.nii.ac.jp/ncid/BB07971938

Slade, D. G. (2019). Developing a game and learning-centred flexible teaching model for transforming play. *Physical Education and Sport Pedagogy, 24(5)*, 434–446. Retrieved from https://doi.org/10.1080/17408989.2019.1616684

Supriadi, A. M. (2023). Enhancing goalkeeper reaction speed in football: The impact of ball launcher training in physical training methods. *JOURNAL SPORT AREA, 8(3)*, 447–456. Retrieved from https://doi.org/10.25299/sportarea.2023.vol8(3).14758

Valerii, N., & Borys, M. (2021). Cycles of Training Sessions and Competitions of Youth Football Players. *Revista Românească pentru Educaţie Multidimensională*, 423-441. Retrieved from https://lumenpublishing.com/journals/index.php/rrem/article/view/-2629/3097

Vergeer, M. &. (2019). Football players' popularity on Twitter explained: Performance on the pitch or performance on Twitter? *International Journal of Sport Communication, 12(3), 376–396. https://doi.org/10.1123/ijsc.2018-0171*, 376–396.

Wong, Y.-K. W.-F.-H. (2022, July 8). *MDPI*. Retrieved from Effectiveness of a serious game design and game mechanic factors for attention and executive function improvement in the elderly: A pretest-posttest study: https://www.mdpi.com/2076-3417/12/14/6923