

**IMMEDIATE IMPACT OF FUNBALL TRAINING PROGRAM ON JUMPING
AND AGILITY PERFORMANCE IN SCHOOL MALE SOCCER PLAYERS –
A RANDOMIZED CONTROLLED TRIAL**

By

ABHIRAM A

Dissertation Submitted to the
Odisha University of Health Sciences, Bhubaneswar, Odisha

In Partial Fulfillment

Of the requirements for the degree of

MASTER OF PHYSIOTHERAPY (MPT)

In

SPORTS SCIENCE

Under the Guidance of

DR. ASIFUZZAMAN SHAHRIYAR AHMED (PT)

Associate Professor, ABSMARI

Co- Guide

DR. GAYATRI UPASANA ACHARYA (PT)

Assistant Professor, ABSMARI



ABHINAV BINDRA SPORTS MEDICINE & RESEARCH INSTITUTE

Bhubaneswar, Odisha

2023-2025

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I hereby declare that this dissertation/thesis entitled “IMMEDIATE IMPACT OF FUNBALL TRAINING PROGRAM ON JUMPING AND AGILITY PERFORMANCE IN SCHOOL MALE SOCCER PLAYERS – A RANDOMIZED CONTROLLED TRIAL ” is a bonafide and genuine research work carried out by me under the guidance of Name & designation of the Guide.

Date:

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Signature of candidate:

ABHIRAM A

University reg.no:23MP435021

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Date:

Place: Bhubaneswar, Odisha

Signature of the Guide:

Dr. Asifuzzaman Shahriyar Ahmed (PT)

Associate Professor, ABSMARI

CERTIFICATE BY THE CO- GUIDE

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Date:

Place: Bhubaneswar, Odisha

Signature of Co- Guide:

Dr. GAYATRI UPASANA ACHARYA (PT)

Assistant Professor, ABSMARI

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Date:

Place:

Signature & Seal of the Principal

Dr. Chinmaya Kumar Patra (PT)

Principal, ABSMARI



ODISHA UNIVERSITY OF HEALTH SCIENCES

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ACKNOWLEDGEMENT

At the very outset, I expressing my deepest gratitude to Lord Jagannath for his boundless blessings and guidance throughout this journey.

I would like to sincerely thank Shri Abhinav A. Bindra, the visionary Founder of our institution, for creating an environment that has allowed me to grow both academically and personally. Your leadership is a constant source of inspiration.

I would also like to extend my heartfelt thanks to our esteemed principal, Dr. Chinmaya Kumar Patra (PT), for your unwavering guidance and support throughout this journey. Your commitment to fostering an environment of learning and growth has greatly contributed to my academic achievements.

I am thankful to my guide, Dr. Asifuzzaman Shahriyar Ahmed (PT), Associate Professor of ABSMARI. Your mentorship, insightful feedback, and patience have been invaluable throughout this process. I am also grateful to my co-guide Dr. Gayatri Upasana Acharya (PT) for her insight and encouragement that help me in refining my research skill and navigate every challenge with confidence.

My deepest appreciation goes to my parents, whose love and sacrifices have been the cornerstone of all my achievements. Your unwavering belief in me has been my greatest source of motivation.

Date:

Place: Bhubaneswar

Signature of the Candidate

ABHIRAM A

LIST OF ABBREVIATIONS USED

CG - Control Group

CGVPOST – Control group vertical jump post

CGVPRE – Control group vertical jump pre

EG - Experimental Group

EGVPOST – Experimental group vertical jump post

EGVPRE – Experimental group vertical jump pre

MICODT - Modified Illinois Change of Direction Test

RCT - Randomized controlled trial

ABSTRACT

Background: Agility, jumping ability and lower limb power are important components of soccer performance, influencing sprinting, rapid change of directions, and technical execution. The FUNBALL training program is a football specific training protocol designed for injury prevention.

Aim: This study aims to examine the immediate effect of FUNBALL training program on agility and vertical jump performance in high school aged male soccer players.

Method: A randomized controlled trial was conducted on 36 high school male soccer players (aged 13-18 years) who were randomly allocated into two groups, an experimental group (FUNBALL training) and a control group (regular warm-up). Following a familiarization session, baseline measurements were recorded using the Sargent Chalk Jump Test (vertical jump) and the Modified Illinois Change of Direction Test (agility). The intervention group completed the FUNBALL program (15–20 minutes), while the control group performed their usual warm-up of equal duration. Post intervention testing was conducted immediately. Data were analyzed using paired and independent t-tests, with statistical significance set at $p \leq 0.05$.

Results: Between-group analysis showed a significant improvement in agility performance in the FUNBALL group compared with the control group ($p = 0.000$) and a moderate but significant improvement in vertical jump ($p = 0.046$). Within-group analysis of the FUNBALL group demonstrated highly significant

improvements in both agility ($p = 0.000$) and vertical jump ($p = 0.000$). The control group showed only a small improvement in agility ($p = 0.011$) and no significant change in vertical jump ($p = 0.055$).

Conclusion: The FUNBALL training program shows immediate improvements in agility and moderate gains in vertical jump performance, suggesting its effectiveness as a football-specific training protocol. Its engaging and structured design may also enhance player adherence and help for both performance enhancement and injury prevention.

Keywords: Acute effect; Agility; Football; FUNBALL; Soccer performance; Vertical jump; Warm up; Youth athletes.

TABLE OF CONTENTS

Sl.no	Content	Page number
1	Introduction	1-5
2	Aim and Objectives	6-7
3	Hypothesis	8-9
4	Review of Literature	10-17
5	Methodology & Procedure	18-30
6	Statistical Analysis	31-32
7	Results	33-43
8	Discussion	44-48
9	Conclusion	49-50
10	Limitations & Recommendations for future study	51-52
11	Summary	53-55
12	Statement of Funding	56-57
13	Bibliography	58-62
14	Annexures	63-73

LIST OF TABLES

Sl. No	Tables	Pages
1	FUNBALL Exercise protocol	26
2	Regular warm up	30
3	Test of normality	35
4	Between group analysis of experimental group	41
5	With in group analysis of experimental group	41
6	With in group analysis of control group	42

LIST OF FIGURES

Sl. No	Figures	Pages
1	Consort flow diagram	22
2	Y balance exercise	27
3	Straight arm plank	27
4	Hamstring walk outs	28
5	Squat lunges	28
6	Skater jumps	29
7	Forward sprinting	29

LIST OF GRAPHS

Sl.no	GRAPHS	Page. No
1	Normality graph of experimental group age	36
2	Normality graph of control group age	36
3	Normality graph of experimental group height	37
4	Normality graph of experimental group weight	37
5	Normality graph of control group height	38
6	Normality graph of control group weight	38
7	Normality graph of control group agility pre	39
8	Normality graph of experimental group vertical jump pre	39
9	Normality graph of control group pre	40
10	Normality graph of experimental group agility pre	40
11	Bar graph of between group analysis of control group and experimental group	42
12	Bar graph of within group analysis of experimental group	43
13	Bar graph of within group analysis of control group	43

1. INTRODUCTION

INTRODUCTION

Soccer is among the most popular and widely participated sports globally, especially within school-aged youth populations¹. It requires players to develop multiple physical qualities, including endurance, strength, speed, coordination, and technical proficiency, with particular emphasis on agility and jumping ability, which are essential for optimal on-field performance^{2,3}. The characteristic of football game is that it is dynamic and requires players to move more agile and agile to score goals. Football is a high-intensity, intermittent team game that emphasizes explosive actions including jumping, sprinting, and kicking. Soccer's high-speed motions include acceleration, maximum speed, and quick change of direction⁴.

Agility is commonly described as the ability to rapidly move the entire body while changing speed or direction in reaction to an external stimulus, is essential for effective maneuvering around opponents and reacting to dynamic game situations⁵. Agility is considered an important component in football, requiring players to quickly respond to external cues and change their direction, which is essential for both attackers and defender⁶. It is found that agility affect the speed of dribbling in soccer, which is important skill in soccer⁷.

Explosive leg power evidenced by jumping ability is crucial for activities such as heading, sprinting, and quick directional shifts⁸.

For school-aged male soccer players, these motor abilities constitute fundamental performance determinants that contribute both to competitive success and injury prevention⁹.

Youth football (soccer) carries a high risk of injury. In male youth football players, overall injury rates have been reported to range from approximately 2.4 to 12.0 injuries per 1,000 hours of play.

Injury prevention training plays an important role in development and sustainability of youth soccer players' careers¹. Due to the high physical demands and frequent rapid changes in direction, acceleration, and deceleration, soccer players especially adolescents are vulnerable to musculoskeletal injuries, most notably in the lower limbs². Implementing structured injury prevention programs in training routines has been demonstrated to significantly reduce the incidence, severity, and recurrence of common injuries while enhancing players' physical capacities and overall performance^{5,10}.

These prevention programs often incorporate neuromuscular training components such as balance exercises, plyometrics, strength training, proprioceptive drills, and agility training designed to improve joint stability, muscle coordination, and movement mechanics¹.

The FUNBALL training program is a scientifically developed, multicomponent, exercise-based injury prevention intervention tailored for adolescent male football (soccer) players. This program combines neuromuscular training elements such as dynamic balance, core stability, eccentric strength, and plyometric activities with cognitive engagement through ball handling and game-like scenarios. Given its multi-component design, FUNBALL not only targets sport-specific physical attributes but also enhances motivation and psychological engagement in adolescent soccer players.

Previous studies shows that FUNBALL significantly decreased overall injury incidence by 31%, particularly reducing thigh injuries and moderate to severe time loss injuries,

thereby improving player availability and supporting long-term athletic development in youth football¹³. There is only limited research exists on immediate effects of FUNBALL or similar playful, game specific drills on performance outcomes such as agility and vertical jump in school-aged soccer players. Previous studies assessed the acute effect of similar football specific training programs that shows immediate performance improvement¹². Asgari et al.2023 compared the acute effect of soccer specific warmup program and highlight that Football+ benefit for performance optimization before competitions and matches.

No randomized controlled trials have assessed the immediate impact of FUNBALL training program on jumping and agility performance in this population. Determining if a single session can produce performance potentiation would provide strong evidence for using FUNBALL as a scientifically supported warm-up or training intervention.

The rationale for this study lies in bridging this gap by investigating whether an acute FUNBALL training session elicits immediate improvements in key performance metrics vertical jump height and agility in school male soccer players. Assessing these outcomes in a randomized controlled trial design ensures methodological rigor and allows for causal inference. Immediate performance gains would inform practitioners about the utility of FUNBALL program in match-day preparations and short-duration training settings, aligning with contemporary emphasis on efficient, engaging, and injury-preventive practices in youth athlete development.

Therefore, this study seeks to address this research gap by evaluating the immediate impact of a single FUNBALL training session on agility and jumping performance in school male football players through the randomized controlled trial. The findings can provide critical insights into the functional benefits of FUNBALL as a warm-up or

acute intervention and inform programming decisions for youth soccer training that optimize both injury prevention and performance enhancement.

2. AIMS & OBJECTIVES

Aims & Objectives

Aim: Check immediate impact of FUNBALL training program on jumping and agility performance.

Objectives:

1. To assess the immediate effect of a single session of the FUNBALL training program on vertical jump performance.
2. To evaluate the immediate effect of the FUNBALL training program on agility.
3. To compare the changes in vertical jump and agility between players performing the FUNBALL training program and those following a usual warm-up routine.

3. HYPOTHESIS

Hypothesis

Alternative hypothesis:

There will be significant difference in agility performance and jump performance in FUNBALL Program group compared to control group

Null hypothesis:

There will be no significant difference in agility performance and jump performance, between the FUNBALL program group and the control group.

4. REVIEW OF LITERATURE

Review Of Literature

FUNBALL:

Obertinca et al. (2023) carried out a cluster-randomized controlled trial including 55 youth teams from Kosovo, spanning the U15, U17, and U19 categories. Teams were allocated to an intervention group, which incorporated the FUNBALL program twice weekly following their regular warm-up, or a control group that maintained their usual training routine. Across an entire competitive season (August 2021–May 2022), players in the intervention group experienced a significantly lower overall injury rate compared with controls (IRR = 0.69, 95% CI: 0.55–0.87). Reductions were particularly evident for thigh injuries and for both moderate and severe time-loss injuries (>7 days). Adherence to the program was high, with players completing it in over 70% of training sessions, averaging 2.2 sessions per week. Based on these findings, the authors recommended regular integration of the FUNBALL program into youth football training to enhance player safety and reduce injury risk¹¹.

Obertinca et al. (2023) described how the FUNBALL injury-prevention program was developed specifically for youth football players. Unlike earlier injury-prevention programs, which were mostly adapted from adult protocols, FUNBALL was designed to overcome key challenges such as poor adherence, limited football-specific content, and low player motivation. The program features competitive, partner-based exercises and frequent ball use, giving players choices within each exercise category to keep sessions engaging. The authors highlight that tailoring

prevention programs to players' preferences may be crucial for improving long-term participation and sustaining injury-prevention efforts, although more research is needed to confirm these benefits¹³.

Khan et al. (2025) in a narrative review, highlighted the importance of structured injury prevention programs in youth football and compared two football specific injury prevention programs the FIFA 11+ and the FUNBALL program. Football is a physically demanding sport involving frequent sprints, cutting maneuvers, and player contact, which makes young athletes susceptible to injuries such as ligament tears, fractures, and concussions. The review describes the FIFA 11+ as a structured warm-up protocol focusing on balance, coordination, agility, strength, and neuromuscular control through dynamic stretches, strength drills, and plyometric exercises. Evidence from multiple trials has shown that it significantly reduces overall injury rates, particularly severe and overuse injuries. In contrast, the FUNBALL program was specifically developed for young male players and includes football-specific activities such as sprinting, cutting, and ball-handling, along with core stability, balance, and plyometric training. Conducted after the regular warm-up and performed at least twice weekly, FUNBALL has been reported to lower the incidence of thigh injuries and decrease moderate to severe time loss injuries across a competitive season. The review concludes that multi component, evidence-based programs like FIFA 11+ and FUNBALL are crucial for safeguarding youth players, improving performance readiness, and supporting long term participation in football¹⁴.

IMMEDIATE EFFECT OF EXERCISES

Asgari et al. (2023) carried out a randomized crossover trial with thirty-eight collegiate soccer players (22 males and 16 females) to compare the immediate effects of Football+ and FIFA 11+ warm-up protocols. The Football+ routine combined light running, dynamic hip stretches, lunges, shoulder contact drills, Copenhagen and Nordic hamstring exercises, small-sided games, plyometric, and anaerobic drills, aiming to replicate real match demands. Performance was assessed using four tests: 20 m sprint, countermovement jump (CMJ), Illinois Agility Test (IA), and dribbling speed (DS). Results showed that Football+ led to significant improvements in sprint performance, agility, and dribbling speed compared to 11+, with the strongest effect observed for agility ($d = 1.43$). No meaningful difference was noted in CMJ performance. Interestingly, female players benefitted most in agility and dribbling, whereas male players saw the greatest gains in sprint and agility. Study concluded that incorporating football-specific and engaging components such as small-sided games and plyometrics makes Football+ a more effective pre-competition warm-up compared to FIFA 11+, as it better prepares players for high-intensity match demands.

Ayala et al. (2017) investigated the short-term effects of three commonly used warm-up routines—FIFA 11+, Harmoknee, and a traditional dynamic warm-up—on multiple physical performance parameters in amateur football players. In this randomized crossover study, sixteen players completed each protocol on separate days, allowing direct comparison within the same participants. The researchers measured a comprehensive set of nineteen variables, including joint range of motion, hamstring-to-quadriceps (H/Q) strength ratios, dynamic postural control, sprint times over 10 m and 20 m, jump height, and reactive strength index. The results showed no meaningful differences between the three warm-up types in joint flexibility, muscle strength balance, postural stability, or jumping-related performance. Interestingly, both FIFA 11+ and Harmoknee were linked to slower 10 m and 20 m sprint times compared to the dynamic warm-up, with players running approximately 1.7% and 2.4% slower, respectively. Based on these findings, the study concluded that dynamic warm-ups may be preferable when the goal is to maximize immediate sprint performance before training sessions or competitive play¹⁵.

AGILITY AND FOOTBALL

Pamungkas et al (2023) conducted a correlational study, explored the link between agility and football performance in female players involving 20 athletes from the Putri Mataram Sleman team, aged 15–20 years, who trained three times per week. Agility was measured using the Illinois Agility Test (validity score 0.87), and football playing ability was evaluated using the David Lee Development Test. Normality of data was confirmed using the Shapiro–Wilk test ($p = 0.085$). The results revealed a very strong

positive correlation ($r = 0.964$) between agility and football playing skills, suggesting that players with higher agility tended to perform better in game-related tasks. The authors highlighted the importance of agility training as a key component in developing overall football performance and recommended integrating agility-focused drills into routine training sessions¹⁶.

VERTICAL JUMP AND FOOTBALL

Lorenzo et al. (2016) conducted a cross-sectional correlational study investigated the association between vertical jump performance and maximal kicking velocity in elite soccer players. The study assessed kicking velocity with both the dominant and non-dominant legs and evaluated several vertical jump tests, including squat jump (SJ), countermovement jump without arm swing (CMJ), countermovement jump with arm swing (CMJA), and reactive jump (RJ). The results indicated no significant correlations between anthropometric variables and kicking velocity. However, significant positive correlations were observed between vertical jump performance and maximal kicking velocity of the dominant leg ($r = 0.47$ for SJ, $r = 0.58$ for CMJ, $r = 0.44$ for CMJA, and $r = 0.51$ for RJ). Moreover, players achieved significantly higher kicking velocities with their dominant leg compared to their non-dominant leg ($t = 18.04$, $p < 0.001$). The authors concluded that vertical jumps could serve as effective indicators of neuromuscular performance related to kicking ability, particularly when using the

dominant leg, highlighting the importance of lower-limb power in soccer-specific skills¹⁷.

OUTCOME MEASURES

Salles et al 2012 discussed the validity and reproducibility of the Sargent Jump Test as a tool for assessing explosive strength in youth soccer players. The study recruited 45 male players from different clubs competing in a local U15 championship. Participants performed three vertical jumps in each testing session, with the highest jump recorded. The first Sargent Jump Test results were compared to measurements from a jump platform (Jump test), considered the gold standard, to establish validity. Intra- and inter-evaluator reproducibility was evaluated by comparing results across multiple tests conducted on separate days and by different evaluators. Statistical analysis using intraclass correlation coefficients (ICC) and the Bland–Altman test demonstrated excellent validity ($r = 0.99$, $p = 0.001$) and reproducibility, both intra- ($r = 0.99$, $p = 0.001$) and inter-evaluator ($r = 1.0$, $p = 0.001$). These findings confirm that the Sargent Jump Test is a highly reliable and valid instrument for measuring explosive leg power in homogeneous groups of young soccer players, making it a suitable choice for performance monitoring in both research and training contexts¹⁸.

Hachana et al. (2014) investigated the reliability and validity of the Modified Illinois Change of Direction Test (MICODT) in ninety-five under-14 soccer players from professional and semi-professional academies. The study aimed to create a more soccer-specific measure of agility by shortening the total distance of the

traditional Illinois Change of Direction Test (ICODT) to approximately 30 meters and modifying the starting position from prone to standing, reflecting real game situations. The results demonstrated excellent relative reliability (ICC = 0.99) and low measurement error (SEM = 1.24%), with MICODT showing a greater ability to detect true performance changes compared to ICODT. Furthermore, MICODT significantly differentiated between elite and sub-elite players ($p = 0.005$), whereas ICODT failed to show such discrimination. The authors concluded that MICODT is a more suitable and sensitive tool for assessing change-of-direction speed in youth soccer players, making it highly relevant for talent identification and training monitoring in this population¹⁹.

5. METHODOLOGY & PROCEDURE

Methodology & Procedure

Study Design:

Study designed as a randomized controlled trial (RCT) using a pretest-posttest control group format to evaluate immediate effects of FUNBALL training program on vertical jump height and agility in school football players

Study Population:

36 male high school soccer players took part in the study with 18 in FUNBALL training group and 18 in routine warm up group. Participants are of age group between 13-18. G*power software calculated the sample size.

Sampling Technique: Purposive sampling

Study Setting: School soccer ground

Study Duration: 1 year

- Ethical clearance: 6 months
- Sample selection, data collection: 4 months
- Statistical analysis, results analysis, discussion: 2 months

Inclusion Criteria:

- Actively playing football minimum of 2 days/week.
- Age group 13-18 years.
- Male soccer players

Exclusion Criteria:

- History of injury within the last 6 months.

- Engaged in intensive physical activities before 48 hours of test session.
- Presence of self-reported DOMS before the test.

Materials Used:

Basic football training equipment, such as foot balls, cones, hurdles, and training kits. Measuring tape, chalk for marking, stop watch

Study Approval:

Ethical approval for the participant information materials, study design, and testing procedures was granted by the Institutional Research Ethics Committee of the Abhinav Bindra Sports Medicine and Research Institute before data collection.

Outcome Measures Used:

Vertical jump (Sargent Chalk Jump Test)

The participant stands flat-footed beside a wall with the right side of the body facing it. While standing, the right arm is fully extended overhead, and the highest reachable point is marked on the wall using chalk on the fingertips.

Prior to the jump, the participant is allowed to bend the knees and swing the arms to generate maximal upward force. At the peak of the jump, the participant touches the wall with the right hand to leave a second mark indicating the highest point reached.

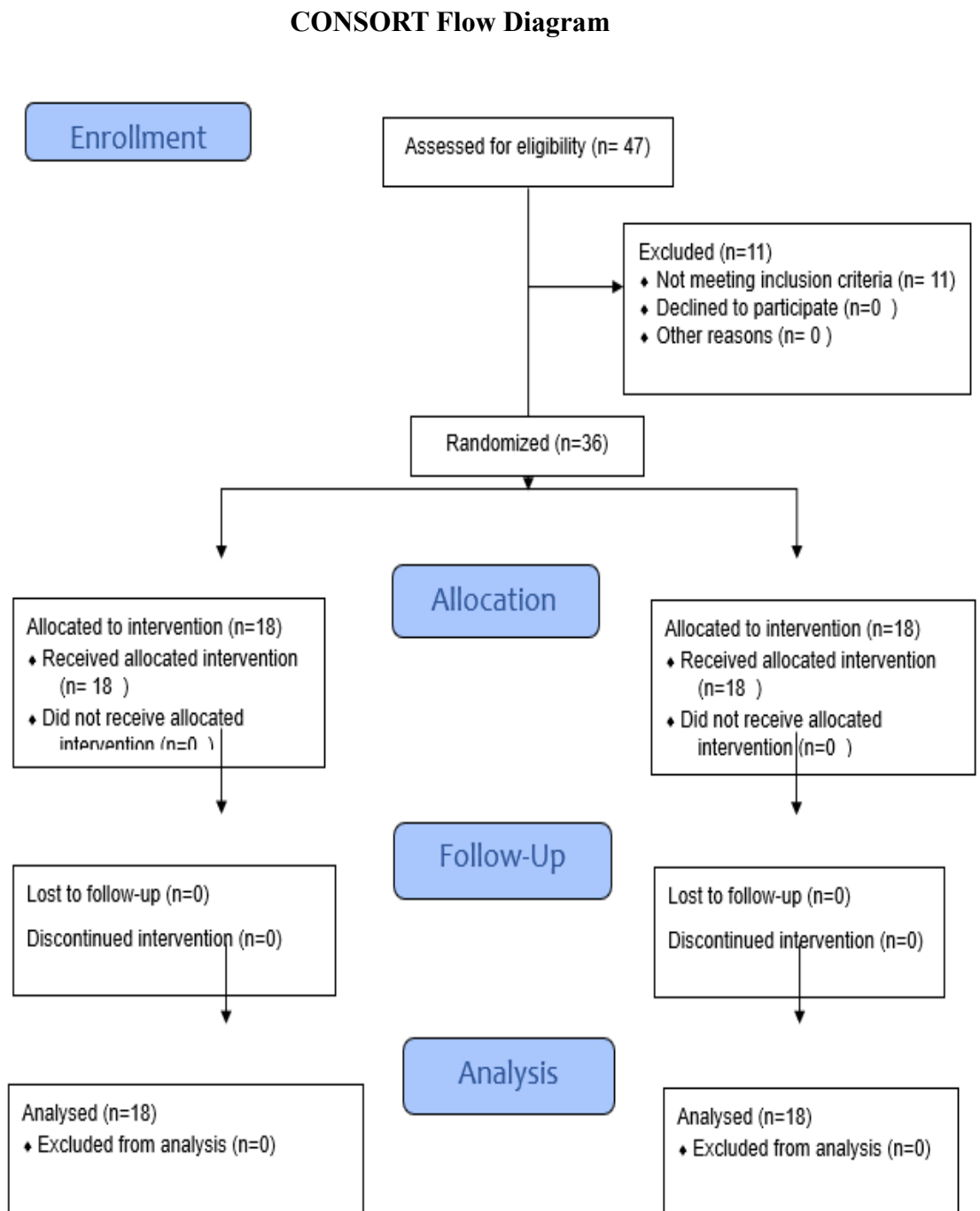
The vertical jump height is calculated by subtracting the initial standing reach height from the jump mark. Each participant performs three attempts with at

least 45 seconds of rest between trials, and the best jump height is taken for analysis.

Agility (Modified Illinois Change of Direction Test)

The Modified Illinois Change of Direction Test (MICODT) is conducted using a cone layout specifically designed to create an agility course. Participants begin from a stationary standing position, and upon receiving the start signal, they sprint through the course while maneuvering around the cones. The test requires several changes of direction over a total distance of approximately 30 meters. Participants are instructed to complete the course in the shortest possible time, ensuring they run around each cone as directed. Performance is timed using a stopwatch. If a participant fails to follow the prescribed route or instructions, the trial is discontinued and test is repeated.

Figure.1 Consort flow diagram



This study designed as a randomized controlled trial using a pretest-posttest control group format to assess the immediate effects of FUNBALL training on vertical jump height and agility in school football players. Ethical approval was obtained from the institutional ethical committee prior to recruitment of players. High school male soccer players aged 13-18 years were screened for eligibility based on predefined inclusion and exclusion criteria. Written informed consent was collected from all participants and their legal guardians prior to enrollment. A total of 36 male participants were recruited using purposive sampling from local school football teams. (AVSGHSS high school).

The inclusion criteria for participation were players who actively engaged in football training at least twice per week. Players with a recent injury (within the past 6 months) or who had participated in intense physical activity in the 48 hours prior to testing were excluded. Players who had self-reported delayed onset muscle soreness at any testing session also excluded from the study.

An independent researcher, blinded to the study's objectives, carried out the randomization process and allocated participants into two groups, the experimental group which perform FUNBALL training program and the control group, which continued with their usual warm-up routine.

Before starting the testing and intervention, a familiarization session was conducted for all participants to introduce the Sargent Chalk Jump Test and the Modified Illinois Agility Test, ensuring correct technique and reducing difficulties during testing. The experimental group also underwent a separate session to learn the correct execution of all FUNBALL exercises prior to the intervention phase. All exercises were described

in detail. Baseline measurements, including height and weight, were recorded before testing.

Pre-test assessments included the Sargent vertical jump test to measure lower limb power and Modified Illinois Change of Direction Test to assess soccer specific agility. Pretest was conducted after 48 hours of familiarization to avoid learning effect and for proper recovery. Testing was conducted at the same football ground and scheduled at the same time (early evening) of day for all players to control for environmental and circadian factors. Each test was repeated three times, and the highest score was recorded for analysis.

Following the pretest, the experimental group completed a single session of the FUNBALL training program, whereas the control group performed their usual warm-up routine, consisting of light jogging, ball exercises, and general dynamic stretching. Post-test measurements were taken immediately (3min) after the intervention, following the same procedures as in the pretest to ensure consistency. All data were recorded systematically, with testing performed at the same time of day and under consistent environmental conditions.

INTERVENTION:

FUNBALL consisted of six fundamental exercise categories. (1) balance, (2) core stability, (3) hamstring muscles eccentrics, (4) gluteal muscle activation, (5) plyometrics and (6) running/sprinting. Each category contained two different exercises to offer more variability. The coach was free to decide which of the two to choose (Obertinca et al 2023) so here in this study one session b exercises are chosen. It was chosen randomly by lot system. The FUNBALL consist of some optional Games at the

end of mandatory exercises, it was not used in this study because it was optional category 'games' to increase the attractiveness of the programme¹¹.

The balance exercise, core stability exercise, gluteal muscle activation and running/sprinting exercises comprised 6 levels of difficulty. During the familiarization session, it was confirmed that all players successfully completed level 4 of difficulty for each exercise. However, no players were able to perform the level 5, level 6 of difficulty for each exercise. Therefore, the level 4 of difficulty was chosen for this study. Hamstring eccentrics and plyometrics exercises comprised of 5 levels of difficulty, all participants successfully completed level 3 difficulty for each exercise and not able to perform level 4, level 5 so the level 3 of difficulty was chosen.

Table 1. FUNBALL exercise protocol ¹¹.

Exercises	Repetitions /duration
Balance	
a. single leg stance	2 sets×30 s (on each leg)
b. Y balance	3 sets×6–8 repetitions (on each leg)
Core stability	
a. Plank and side plank	2 sets×20–40 s (on each position)
b. Straight arm plank	2 sets×8–12 repetitions
Hamstring muscles eccentrics	
a. Nordic hamstring	1–2 sets×3–10 repetitions
b. Hamstring walk- outs	2–3 sets×30 s
Gluteal muscle activation	
a. Head, shoulder, hip, knee, Ankle	2 sets×6–10 repetitions
b. Squat lunges	2–3 sets×8–12 repetitions
Plyometric	
a. Forward jumps	4 sets×3 jumps
b. Skater jumps	4 repetitions (2 on each leg)
Running/sprinting	
a. Diagonal running/sprinting	3 repetitions
b. Forward running/sprinting	3 repetitions



Figure 2. Y balance exercise



Figure 3. Straight arm plank



Figure 4. Hamstring walk- outs



Figure 5. Squat lunges



Figure 6. Skater jumps



Figure 7. Forward Sprinting

Table 2. Regular warm up

Exercises	Repetitions /duration
Jogging	4 min
Backward jogging	2 x 50 meter
Side way running	2 x 50 meter
Stretching of hamstring, calf, quadriceps adductors.	15 sec hold each side
Close gates	2 x 10 rep per side
Open gates	2 x 10 rep per side

6. STATISTICAL ANALYSIS

Statistical Analysis

Data were analyzed using SPSS version 27.0, with level of significance set as $P < 0.05$. Shapiro-Wilk test was applied to assess normality of data. Baseline demographic variables (height, weight, age) did not follow a normal distribution ($P < 0.05$) and results were presented as median and interquartile range (IQR). The main outcome measures followed normal distribution ($P > 0.05$) and were presented as mean \pm standard deviation (SD). Within group comparisons were performed using the paired t-test and between group comparisons were performed using independent t-test.

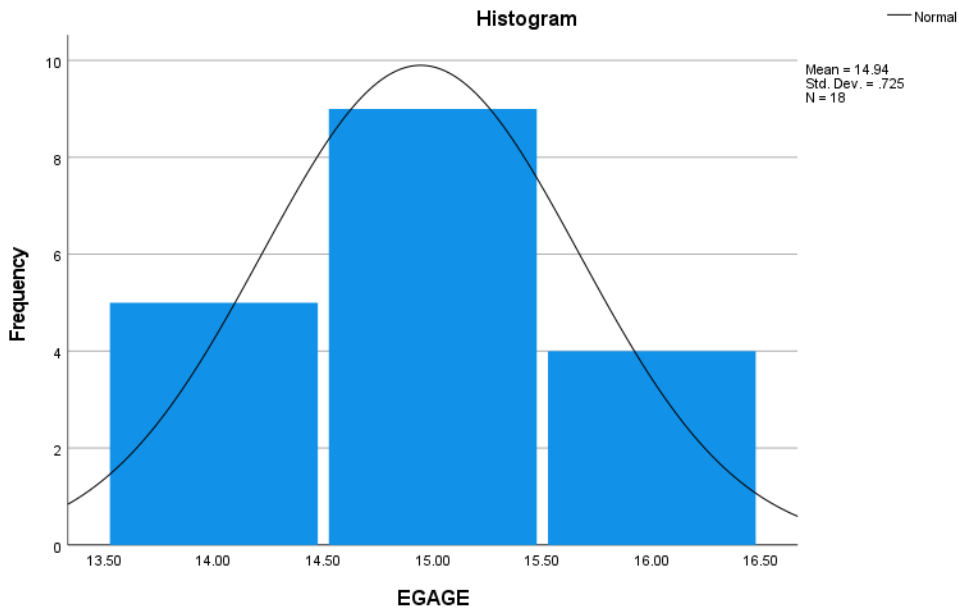
7. RESULTS

Results

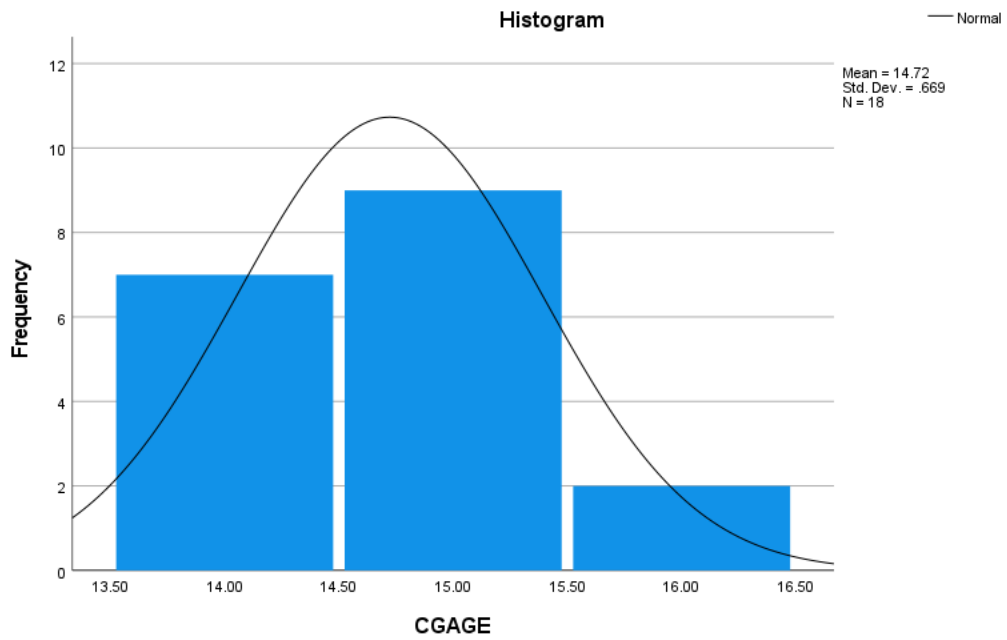
Results of this study show that FUNBALL training program produced a significant improvement in both agility and vertical jump performance among school male soccer players. Between group analysis found that the FUNBALL group showed a highly significant increase in agility performance compared to the control group ($p = 0.000$). Similarly, vertical jump performance showed a statistically significant improvement in the FUNBALL group when compared with the control group ($p = 0.046$). Within group analysis further confirmed these outcomes, as the FUNBALL group exhibited a strong pre-to-post intervention improvement in both agility ($p = 0.000$) and vertical jump ($p = 0.000$). In contrast, the control group showed only a minor but statistically significant improvement in agility ($p = 0.011$), while changes in vertical jump performance did not show statistical significance ($p = 0.055$). These results indicate that the FUNBALL program has an immediate and meaningful effect on enhancing performance related outcomes, particularly agility, in young soccer players.

Table 3. Test of normality

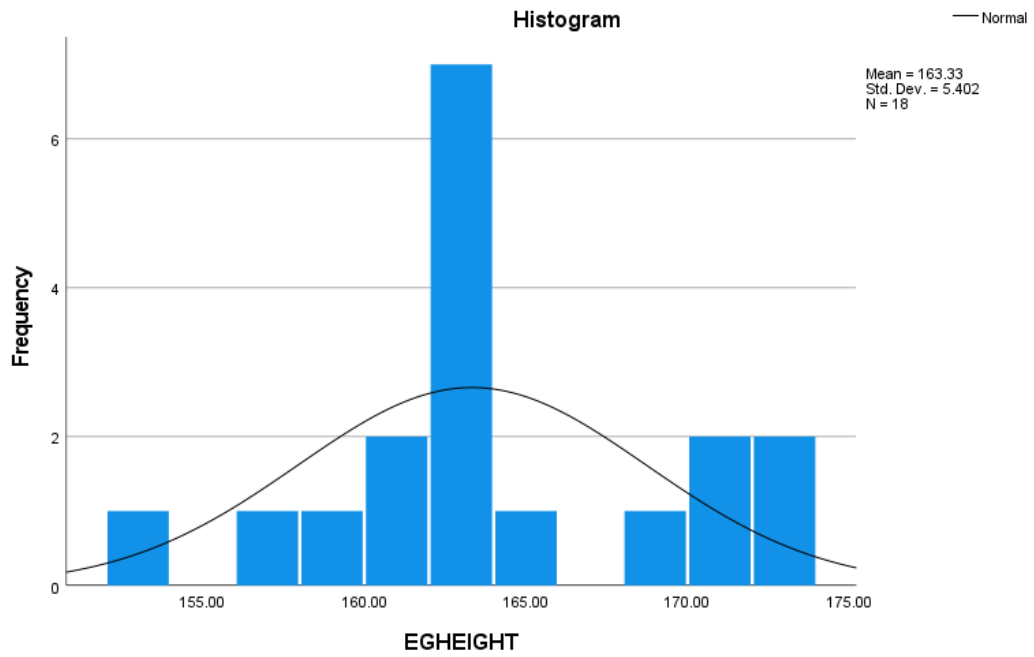
VARIABLES	EG Mean ± SD	p-value	CG Mean ± SD	p-value
AGE	14.944 ± .725	.003	11.698 ±.453	.000
HEIGHT	163.33 ± 5.401	.192	161 ±4.934	.259
WEIGHT	49.166 ± 4.11	.809	48.555 ±5.03	.065
AGILITY	12.165 ±.501	.425	12.169 ±.432	.151
VERTICAL JUMP	261. ± 6.221	.633	255.88 ±3.802	.238



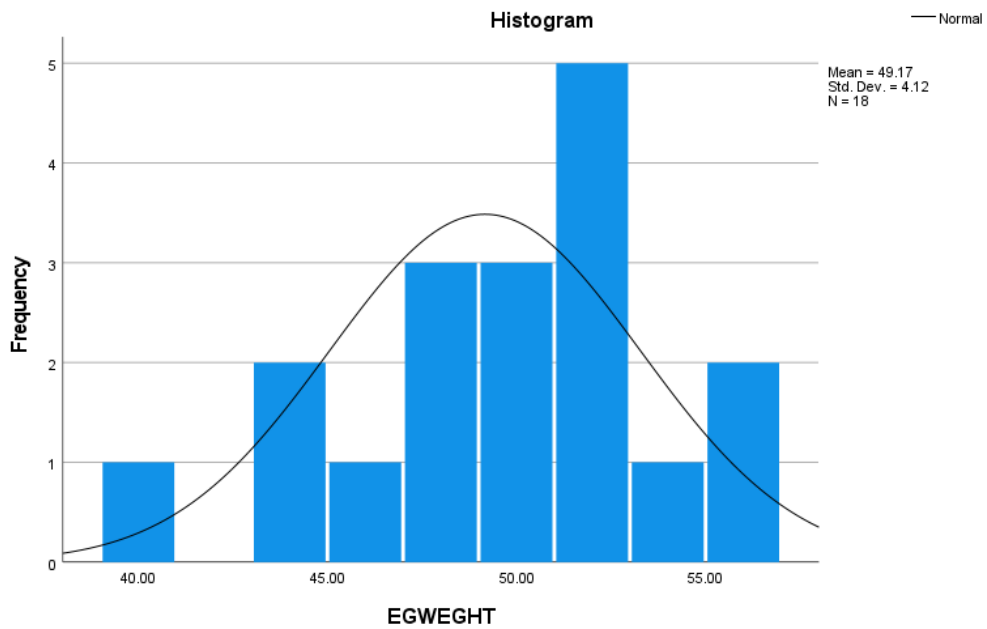
Graph.1 Normality graph of experimental group age



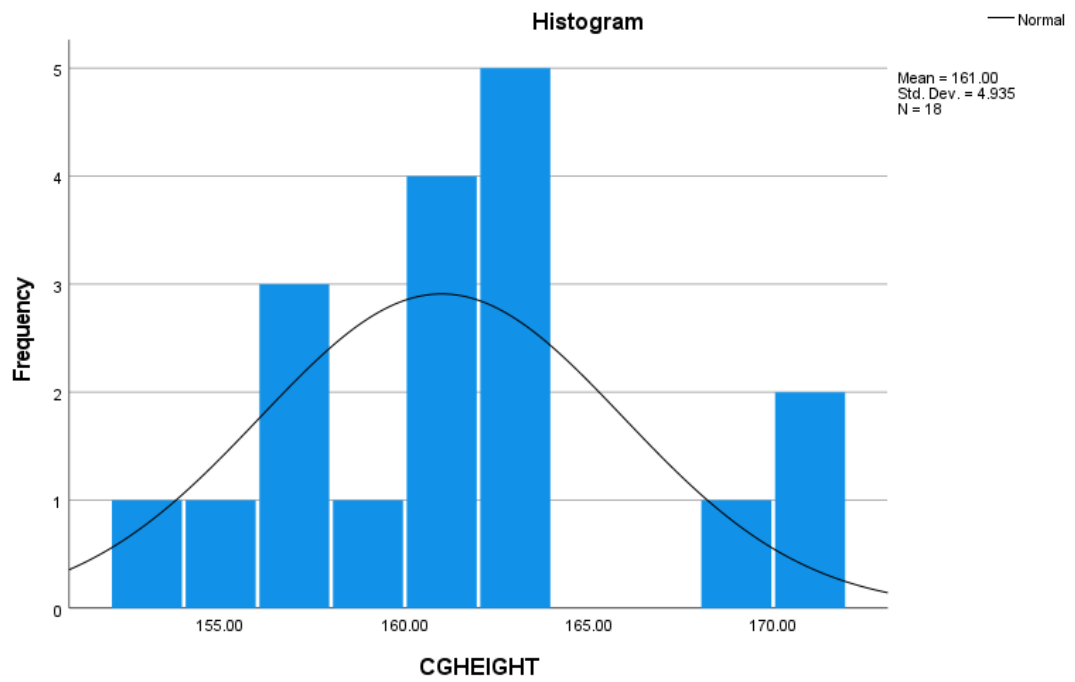
Graph 2. Normality graph of control group age



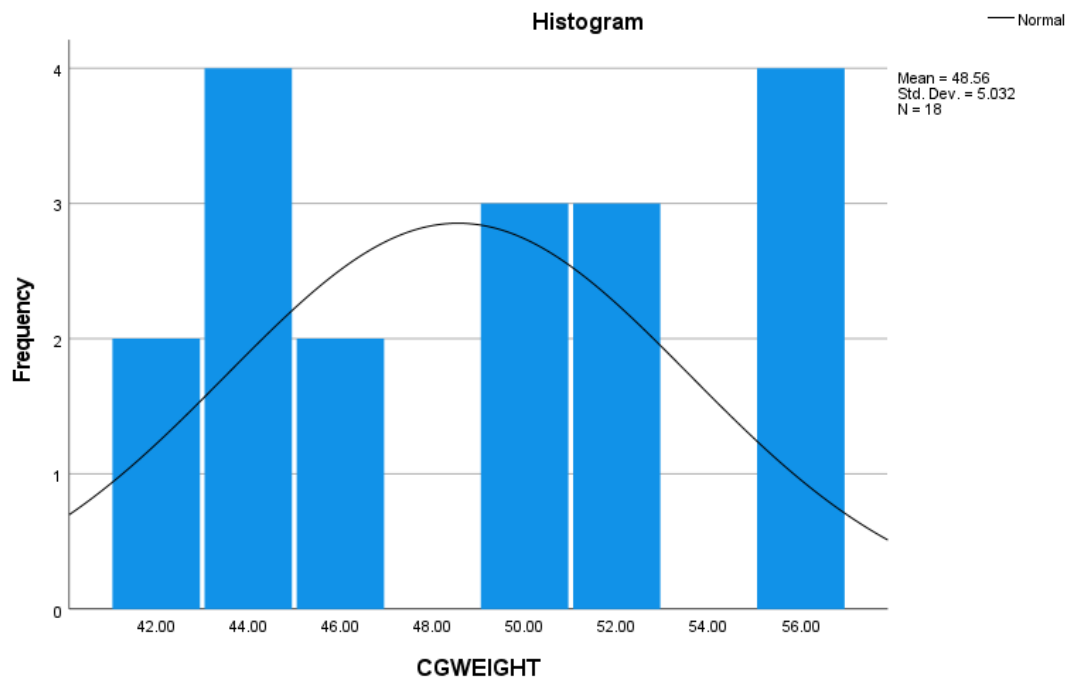
Graph 3. Normality graph of experimental group height



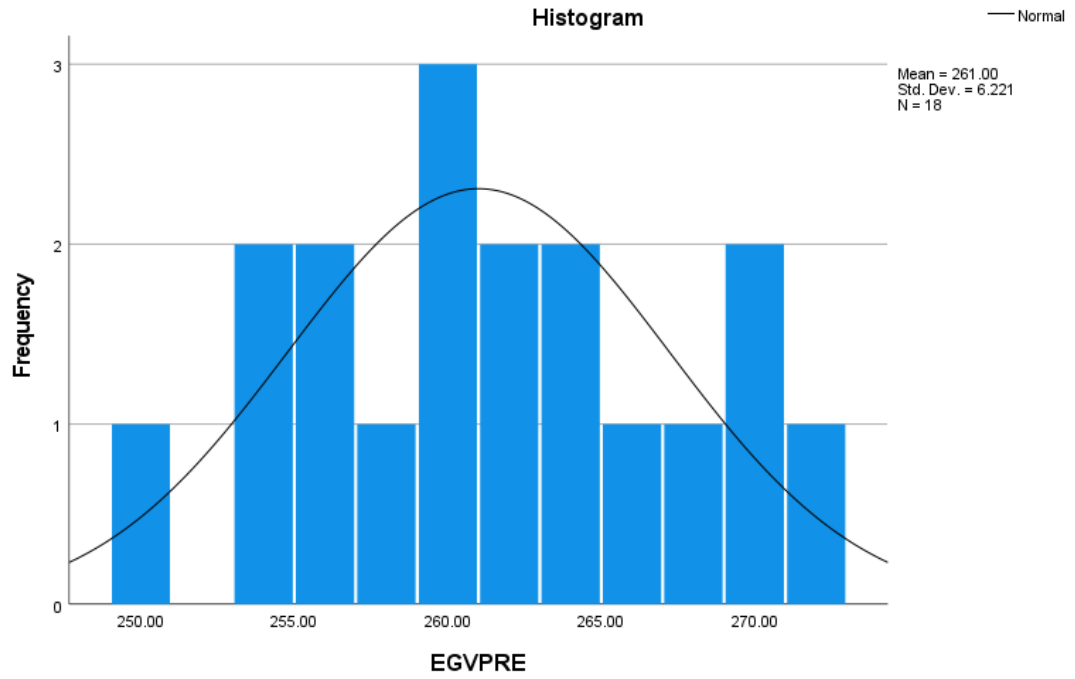
Graph 4. Normality graph of experimental group weight



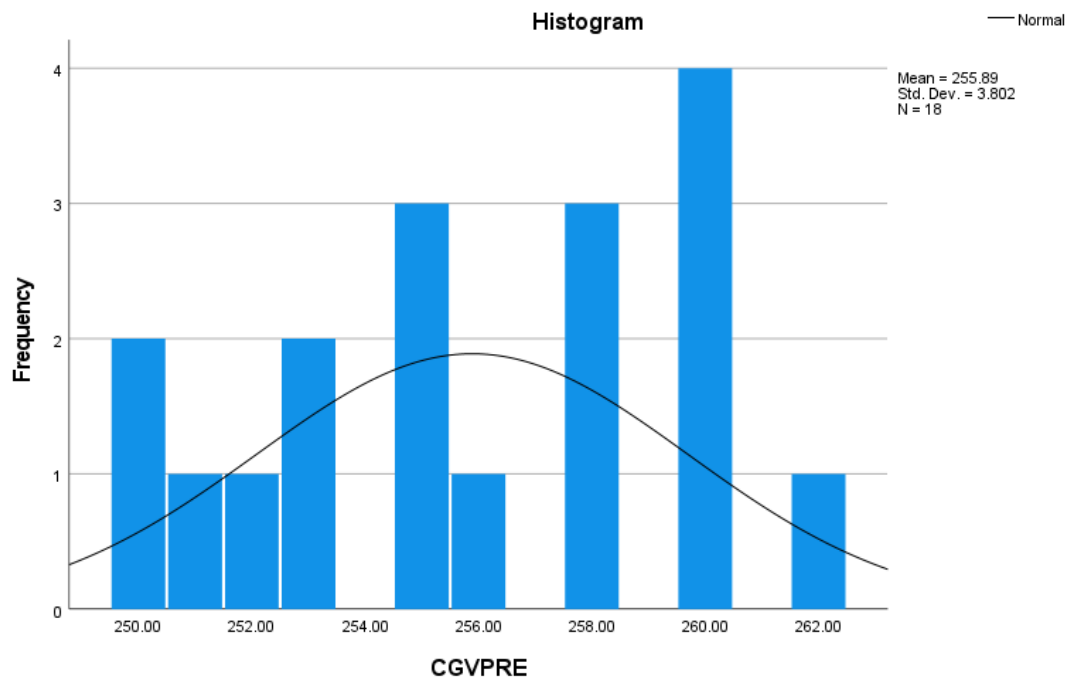
Graph 5. Normality graph of control group height



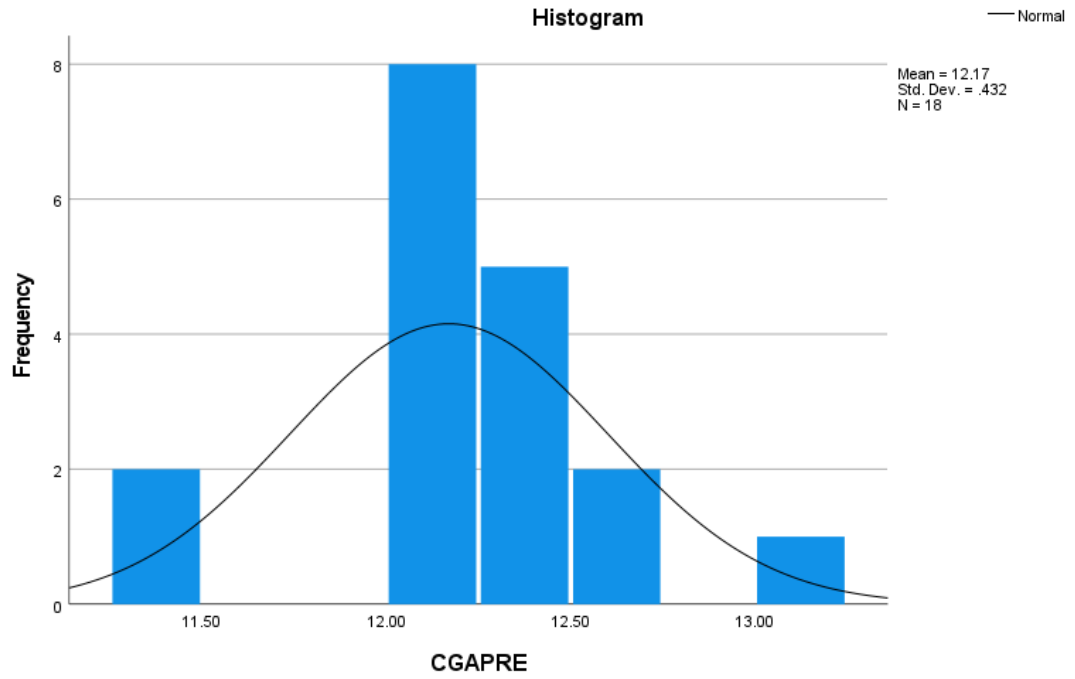
Graph 6. Normality graph of control group weight



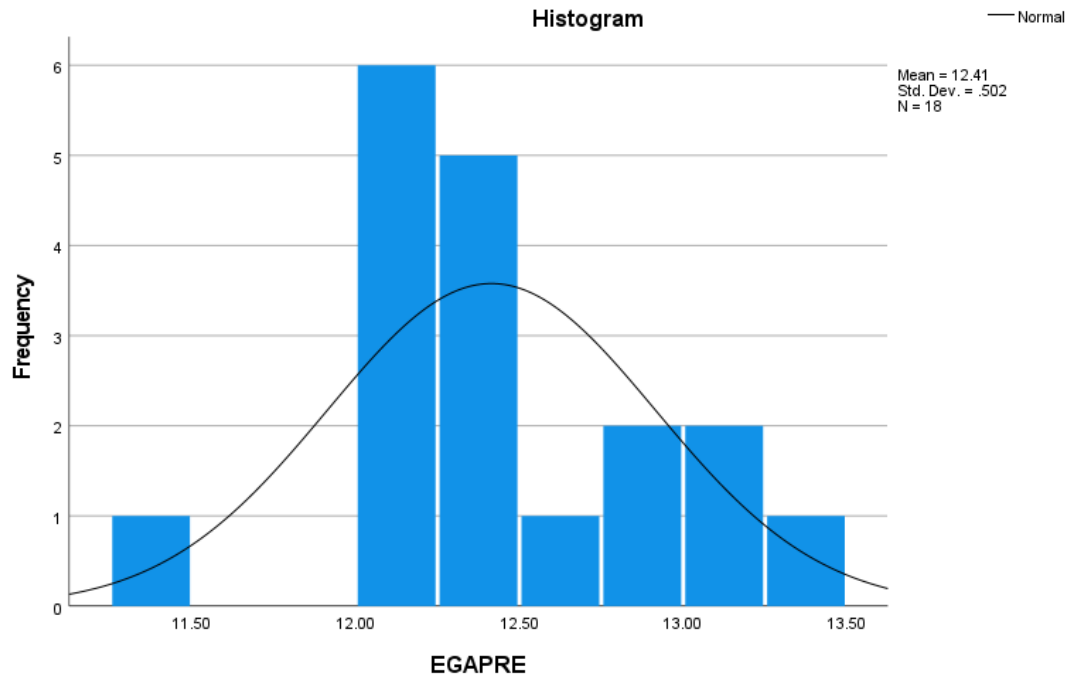
Graph 7. Normality graph of experimental group vertical jump pre



Graph 8. Normality graph of control group vertical jump pre



Graph 9. Normality graph of control group agility pre



Graph 10: Normality graph of experimental group agility pre

Table 4. Between group analysis

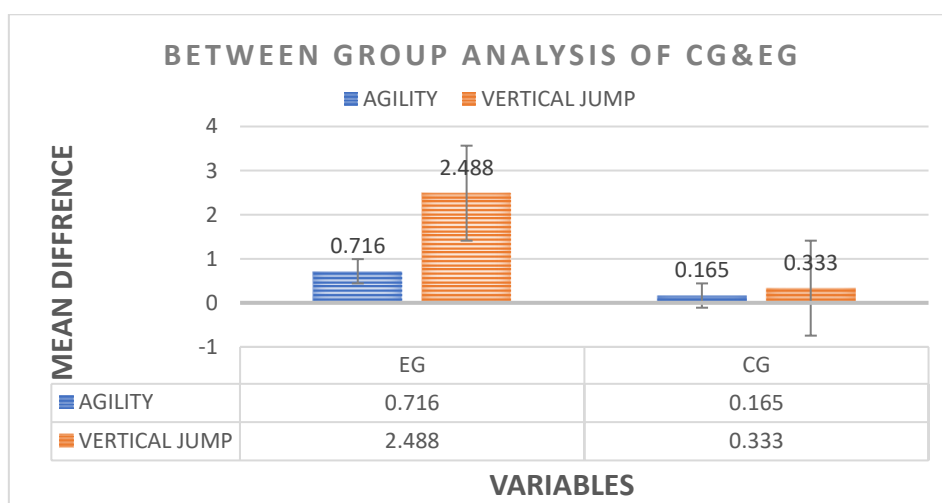
VARIABLES	EG	CG	t	p-value
	Mean ± SD	Mean ± SD		
AGILITY	.716±.5	.165±.244	4.198	.000
VERTICAL JUMP	2.488±1.944	.333±.685	4.229	.046

Table 5. With in group analysis of EG

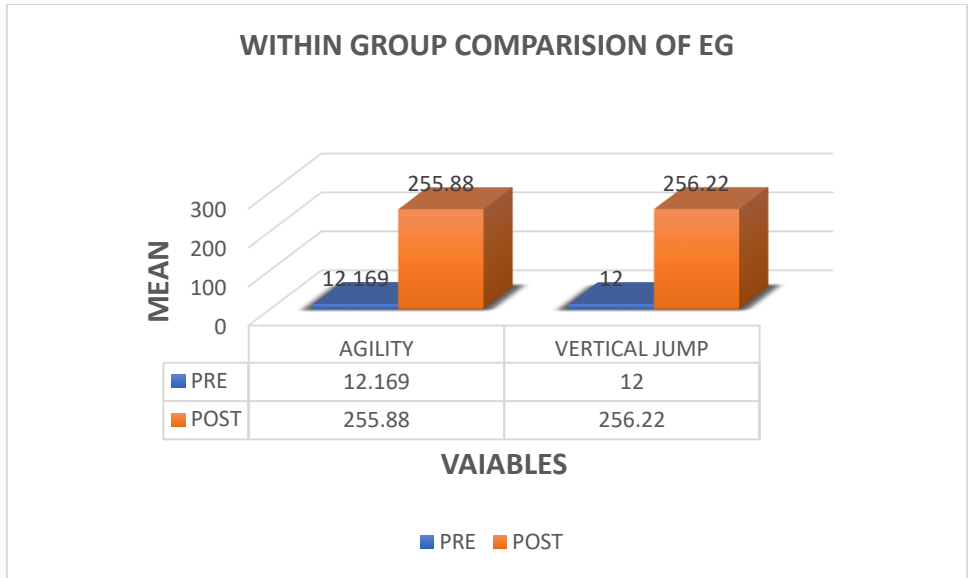
VARIABLES	PRE	POST	MEAN DIFFERENCE	t	P
	Mean ± SD	Mean ± SD			
AGILITY	12.414±.5	11.698±.453	.716	6.072	.000
VERTICAL JUMP	261±6.221	263.66±6.74	-2.666	-5.657	.000

Table 6. With in group analysis of CG

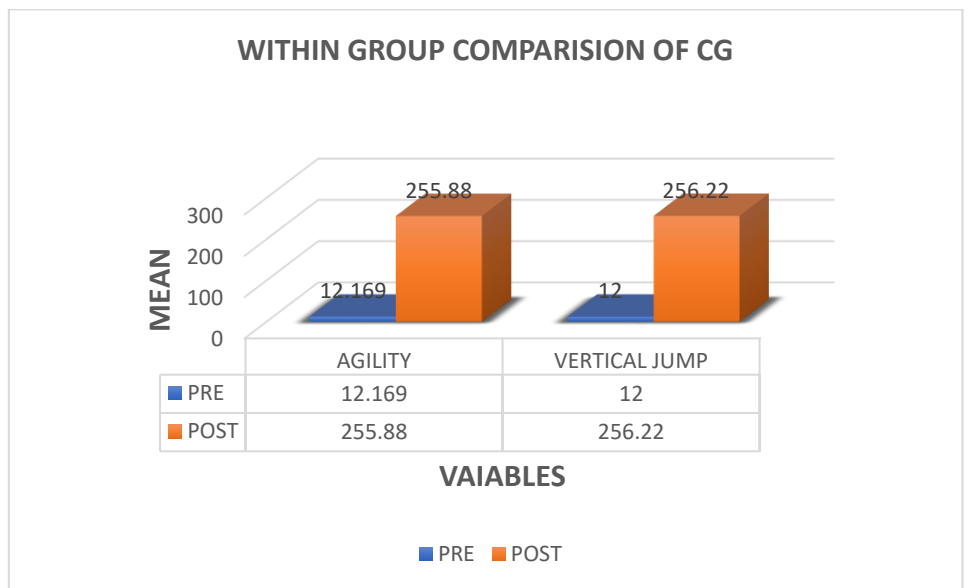
VARIABLES	PRE	POST	MEAN DIFFERENCE	t	P
	Mean ± SD	Mean ± SD			
AGILITY	12.169±.432	12±.528	.165	2.861	.011
VERTICAL JUMP	255.88±3.802	256.22±3.858	-.333	-2.062	.055



Graph 11. Bar graph showing between group analysis of control group & experimental group



Graph 12. Bar graph showing within group analysis of experimental group



Graph 13. Bar graph showing within group analysis of control group

8. DISCUSSION

Discussion

The aim of the study was to check the immediate effect of FUNBALL training on two key physical performance measures, agility and vertical jump in high school aged male soccer players. The work is novel because it focusses on immediate, short-term changes that occur within a single session rather than long-term training effects, this is less explored in youth soccer of this age category and few studies have measured performance outcomes immediately following similar warm-ups or specialized dynamic training protocols¹².

In the result of this study, between group analysis showed that the FUNBALL group improved their agility significantly ($p = 0.000$) and their vertical jump moderately ($p = 0.046$) compared to the control group. Within the FUNBALL group analysis, both agility ($p = 0.000$) and vertical jump ($p = 0.000$) improved strongly. This shows the benefit of FUNBALL training program on agility and jumping performance, which is important factor in soccer game play. The within group analysis of control group shows significant improvement in agility ($p = 0.011$) but vertical jump did not show statistical significance ($p = 0.055$).

The study tested the primary hypothesis, FUNBALL training may immediately improve the agility and jumping performance. The result shows strong evidence for the agility hypothesis, with both within group and between group results for agility shows highly significant ($p \leq 0.000$ in FUNBALL vs control and FUNBALL pre vs post). The vertical jump hypothesis is moderately supported, with a significant difference between FUNBALL group and control group ($p = 0.046$) and within FUNBALL pre vs post ($p = 0.000$), but no significant progress in vertical jump were observed in the control

group. The study findings show that, single session of the FUNBALL training program significantly improve agility performance and provides a moderate, immediate improvement in vertical jump performance. This improvement may positively affect the game performance as agility is essential for effective maneuvering around opponents and reacting to dynamic game situations^{5,8}. Explosive leg power is evidenced by jumping ability is crucial for activities such as heading, sprinting, and quick directional shifts⁸.

Previous studies examining the impact of various warm up strategies on immediate performance effect show that dynamic and high intensity warm ups are effective in optimally preparing athletes for performance¹². Previous studies found better agility and vertical jump performance after warm-up + dynamic stretching compared to warm-up alone. Asgari et al.2023 found that warm ups including dynamic stretching, high-intensity running, and plyometrics yield immediate improvements in agility compared to more static or traditional warm-ups¹². These findings support our results that agility is particularly sensitive to immediate, well-designed, dynamic and engaging interventions like FUNBALL training program.

It is evident that incorporating walking lunges and plyometric drills has been shown to enhance vertical jump performance¹². Thomas et al. (2009) reported that plyometric training is effective in developing players' muscle power and improving their agility performance¹². Thus, improvements in the jumping performance could be due to the squat lunges and plyometrics exercises integrated into the FUNBALL program.

Core training enhances jump performance by providing greater stability to the spine and pelvis, which improves the transfer of force between the lower and upper limbs and maximizes overall power output during jumping movements²¹.

Research on trunk kinematics during cutting maneuvers indicates that athletes with reduced forward trunk lean tend to perform change of direction tasks more quickly, highlighting the importance of trunk control in enhancing agility performance²². The core stability training program included in the FUNBALL training program may positively affect the lower limb power output and hence improve the jump performance.

Partner-based training activities can boost performance by integrating physical, neuromuscular, and psychological components. Physically, such drills frequently include reactive and competitive elements that stimulate greater motor unit recruitment and heighten neuromuscular activation. Partner based reactive drills, in which one player responds to actions of another simulate real game agility demands requiring quick decision making, anticipatory control, and acceleration deceleration ability leading to quick change of direction performance²³. FUNBALL program consist of partner-based exercises which may improve the motivation and performance of the players.

Although this study provides important findings, several limitations should be considered. The study only assessed immediate effects. It does not reveal whether improvements persist over hours or translate to better match performance. Only high school aged male soccer players were included so the results may not generalize to female athletes or other age groups.

From a sports performance perspective, the study results support that, including FUNBALL as a pre-game or pre-training routine for youth soccer players to improve performance. Coaches and trainers can use FUNBALL to prepare players both physically and mentally, enhancing agility and potentially reducing injury risk (as supported by Obertinca et al. 2023) It is evident that FUNBALL training twice per week

reduce the overall injury in soccer players¹¹. Thus, integrating FUNBALL twice per week could serve as a dual benefit of injury prevention plus immediate performance improvement without requiring additional training time.

Future research should focus on evaluating the duration of immediate performance enhancement and examine longitudinal effects by applying FUNBALL over several weeks or a season, measuring both performance gains and injury reduction. Include female athletes and different age groups to improve generalizability. Assess psychological outcomes, such as motivation and enjoyment, as these factors could mediate adherence and performance improvements. Compare FUNBALL with other popular injury-prevention and warm-up programs for acute performance outcomes.

9. CONCLUSION

Conclusion

The results shows that FUNBALL program significantly improve agility performance and provides moderate but meaningful improvements in vertical jump height compared to the control group participated in a regular warm-up. Findings highlight FUNBALL as an effective, football specific training strategy that can immediately enhance performance while simultaneously supporting injury prevention. The program's engaging format, which integrates football related drills and ball use, likely contributes player's motivation and enjoyment. Based on these outcomes, coaches and trainers encouraged to include FUNBALL protocol as part of their pre-training or pre-competition preparation to enhance player readiness and overall performance.

**10. LIMITATIONS & RECOMMENDATIONS FOR FUTURE
STUDY**

Limitations & Recommendations for future study

The future studies should evaluate the duration of the immediate performance enhancement and examine longitudinal effects by applying FUNBALL over several weeks or a season, measuring both performance gains and injury reduction. Include female athletes and different age groups to improve generalizability. Assess psychological outcomes, such as motivation and enjoyment, as these factors could mediate adherence and performance improvements. Compare FUNBALL with other popular injury-prevention and warm-up programs for acute performance outcomes.

11. SUMMARY

Summary

This randomized controlled trial aimed to investigate the immediate impact of the FUNBALL training program on agility and vertical jump performance among high school aged male soccer players. A total of 36 male players between 13 and 18 years of age were recruited from local school and randomly assigned to the experimental group (FUNBALL warm-up) and the control group (regular warm-up). Ethical clearance was secured from the institutional ethics committee, and written informed consent was obtained from both participants and their guardians prior to data collection.

To minimize difficulties, all participants took part in a familiarization session where they were instructed in the correct techniques for the Sargent Chalk Jump Test and the Modified Illinois Change of Direction Test (to measure agility). Baseline performance data were recorded before the intervention. The experimental group then completed the FUNBALL warm-up in 15–20-minute whereas the control group performed their routine warm-up of equal duration. Post intervention assessments were conducted immediately under comparable conditions.

Statistical analysis show that the FUNBALL group experienced a highly significant improvement in agility compared with the control group ($p = 0.000$) and a moderate but statistically significant increase in vertical jump height ($p = 0.046$). Within group analysis further revealed strong improvements in both agility ($p = 0.000$) and vertical jump ($p = 0.000$) for the experimental group. The control group showed only a slight improvement in agility ($p = 0.011$) and no significant change in vertical jump ($p = 0.055$).

The result suggests that the FUNBALL program is a practical and effective injury prevention approach for enhancing immediate agility and moderately improving vertical jump performance in high school soccer players. Its football specific and engaging design may promote player motivation. Based on these findings, incorporating FUNBALL into pre-training or pre-match routines is recommended to enhance physical readiness and potentially lower injury risk.

12. STATEMENT OF FUNDING

This study did not receive any specific grant or financial assistance from public, commercial, or non-profit organizations. The research was fully self-funded, and no external funding was applicable.

13. BIBLIOGRAPHIC REFERENCES

1. Zouhal H, Abderrahman AB, Dupont G, Truptin P, Le Bris R, Le Postec E, et al. Effects of neuromuscular training on agility performance in elite soccer players. *Front Physiol.* 2019; 10:947. doi:10.3389/fphys.2019.00947.
2. Chaalali A, Rouissi M, Chtara M et al. Agility training in young elite soccer players: promising results compared to change of direction drills. *Biol Sport.* 2016;33(4):345-351
3. Ilma Čaprić, Mima Stanković, Mila Manić et al. Effects of plyometric training on agility in male soccer players-a systematic review. *J Mens Health.* 2022;18(7):147
4. Trajković N, Sporiš G, Krističević T, Madić DM, Bogataj Š. The importance of reactive agility tests in differentiating adolescent soccer players. *Int J Environ Res Public Health.* 2020;17(11):3839.
5. Neag I, Mihaila I, Fleancu LJ, Stancu M, Potop V, Barbu D, et al. Agility development in youth soccer: the efficacy of fixed-role small-sided games. *Front Sports Act Living.* 2025; 7:1593906.
6. Young W, Rayner R, Talpey S. It's Time to Change Direction on Agility Research: A Call to Action. *Sports Med Open.* 2021; 7:12
7. Dindin Abidin, Aridhotul Haqiyah. Agility and Balance on the Speed of Dribbling in Soccer. In: 1st South Borneo International Conference on Sport Science and Education (SBICSSE 2019). 2020;407
8. Zheng T, Kong R, Liang X, Huang Z, Luo X, Zhang X, et al. Effects of plyometric training on jump, sprint, and change of direction performance in adolescent soccer player: A systematic review with meta-analysis. *PLoS One.* 2025;20(4): e0319548.

9. Khan MA, Al Sehem SA, Alahmadi OA. Injury Prevention Programs in Youth Football: A Narrative Review of the FIFA 11+ and FUNBALL Programs. *Cureus*. 2025. doi:10.7759/cureus.82232
10. Min Sun, Kim Geok Soh, Shuzhen Ma, Xinzhi Wang, Junlong Zhang, Azhar Bin Yaacob. Effects of speed, agility, and quickness (SAQ) training on soccer player performance-A systematic review and meta-analysis. *PLoS ONE*. 2025;20(2): e0316846.
11. Obërtinca R, Meha R, Hoxha I, et al. Efficacy of a new injury prevention programme (FUNBALL) in young male football (soccer) players: a cluster-randomised controlled trial. *Br J Sports Med* [Internet]. 2024 [cited 2025 Sep 22]; Epub ahead of print.
12. Asgari M, Schmidt M, Terschluse B, Sueck M, Jaitner T. Acute effects of the FIFA11+ and Football+ warm-ups on motor performance. A crossover randomized controlled trial. *PLoS ONE*. 2023;18(4): e0284702. doi: 10.1371/journal.pone.0284702.
13. Obërtinca R, Meha R, Hoxha I, Shabani B, Meyer T, aus der Fünten K. Efficacy of a new injury prevention programme (FUNBALL) in young male football (soccer) players: a cluster-randomised controlled trial. *Br J Sports Med*. 2024; 0:1-8. doi:10.1136/bjsports-2023-107388.
14. Khan MA, Al Sehem SA, Alahmadi OA. Injury Prevention Programs in Youth Football: A Narrative Review of the FIFA 11+ and FUNBALL Programs. *Cureus*. 2025. doi:10.7759/cureus.82232
15. Ayala F, Calderón-López A, Delgado-Gosálbez JC, Parra-Sánchez S, Pomares-Noguera C, Hernández-Sánchez S, et al. Acute Effects of Three Neuromuscular






Warm-Up Strategies on Several Physical Performance Measures in Football Players. PLoS ONE. 2017;12(1):e0169660.

16. Pamungkas G, Komarudin, Saryono, Sabillah MI. The relationship of agility with women's football playing skills. JORPRES (Journal Olah raga Prestasi). 2023;19(1):1-5.
17. Rodríguez-Lorenzo L, Fernandez-del-Olmo M, Sanchez-Molina JA, Martín-Acero R. Role of Vertical Jumps and Anthropometric Variables in Maximal Kicking Ball Velocities in Elite Soccer Players. J Hum Kinet. 2016; 53:143-53. doi:10.1515/hukin-2016-0018.
18. Salles PG, Vasconcellos FAV, Salles GFC, Fonseca RT, Dantas EHM. Validity and Reproducibility of the Sargent Jump Test in the Assessment of Explosive Strength in Soccer Players. J Hum Kinet. 2012; 33:115-21. doi:10.2478/v10078-012-0050-4.
19. Hachana Y, Chaabène H, Ben Rajeb G, Khelifa R, Aouadi R, Chamari K, et al. Validity and Reliability of New Agility Test among Elite and Subelite under 14-Soccer Players. PLoS ONE. 2014 Apr 21;9(4):e95773.
20. Abade E, Sampaio J, Gonçalves B, Baptista J, Alves A, Viana J. Effects of different re-warm up activities in football players' performance. PLoS ONE. 2017;12(6): e0180152. doi: 10.1371/journal.pone.0180152.
21. Rodríguez-Perea A, Reyes-Ferrada W, Jerez-Mayorga D, et al. Core training and performance: a systematic review with meta-analysis. Biol Sport. 2023;40(4):975-992

22. Sasaki S, Nagano Y, Kaneko S, Sakurai T, Fukubayashi T. The relationship between performance and trunk movement during change of direction. *J Sports Sci Med.* 2011; 10:112-118.
23. Paul DJ, Gabbett TJ, Nassis GP. Agility in Team Sports: Testing, Training and Factors Affecting Performance. *Sports Med.* 2015.

14.ANNEXURES

IEC APPROVAL LETTER

 ABSMARI	ABSMARI ETHICS COMMITTEE ABHINAV BINDRA SPORTS MEDICINE AND RESEARCH INSTITUTE, BHUBANESWAR, ODISHA CDSCO Reg. No.: ECR/1981/Inst/OD/24																		
Prof. (Dr.) E. Venkata Rao Chairperson	Mr. Chinmaya Kumar Patra Member Secretary																		
Ref. No. <u>ABSMARI/IEC/2025/189</u>	Date: <u>14/05/2025</u>																		
APPROVAL LETTER APPENDIX - VIII																			
To,																			
<table border="1"><thead><tr><th colspan="2">MEMBERS</th></tr></thead><tbody><tr><td>Dr. Smaraki Mohanty Clinician</td><td rowspan="5"></td></tr><tr><td>Dr. Satyajit Mohanty Scientific Member</td></tr><tr><td>Mr. Shib Shankar Mohanty Legal Expert</td></tr><tr><td>Ms. Annie Hans Social Scientist</td></tr><tr><td>Ms. Subhashree Samal Lay Person</td></tr><tr><td>Mr. Deepak Ku. Pradhan Scientific Member</td></tr><tr><th colspan="2">IEC-SECRETARIAT</th></tr><tr><td>Mr. Gouranga Ku. Padhy Mr. Susant Ku. Raychudamani</td><td></td></tr></tbody></table>	MEMBERS		Dr. Smaraki Mohanty Clinician		Dr. Satyajit Mohanty Scientific Member	Mr. Shib Shankar Mohanty Legal Expert	Ms. Annie Hans Social Scientist	Ms. Subhashree Samal Lay Person	Mr. Deepak Ku. Pradhan Scientific Member	IEC-SECRETARIAT		Mr. Gouranga Ku. Padhy Mr. Susant Ku. Raychudamani		ABHIRAM A ABSMARI 273, PAHAL, BHUBANEWAR-752101					
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Protocol Title: Immediate Impact of FUNBALL training program on jumping and agility performance in School male soccer players – A randomized controlled trial																			
Protocol ID.: ABS-IEC-2025-PHY-035																			
Subject: Approval for the conduct of the above referenced study																			
Dear Mr./Ms./Dr ABHIRAM A																			
With reference to your Submission letter dated 06/01/2025 the ABSMARI IEC has reviewed and discussed your application for conduct of the study on dated 24/04/2025.																			
The following documents were reviewed and discussed																			
<table border="1"><thead><tr><th>S.N.</th><th>Documents</th><th>Document (Version/Date)</th></tr></thead><tbody><tr><td>1</td><td>IEC Application Form</td><td>24/04/2025</td></tr><tr><td>2</td><td>Informed Consent Form</td><td>24/04/2025</td></tr><tr><td>3</td><td>Undertaking form PI</td><td>24/04/2025</td></tr><tr><td>4</td><td>CRF</td><td>24/04/2025</td></tr><tr><td>5</td><td>COI from the Investigators</td><td>24/04/2025</td></tr></tbody></table>	S.N.	Documents	Document (Version/Date)	1	IEC Application Form	24/04/2025	2	Informed Consent Form	24/04/2025	3	Undertaking form PI	24/04/2025	4	CRF	24/04/2025	5	COI from the Investigators	24/04/2025	
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The following members were present at meeting held on 24-04-2025																			
																			
1																			
<p> Utkal Signature, Plot No.-273, Ground Floor, Pahal, Bhubaneswar-752101</p> <p> +91-63707-03654</p> <p> iec@absmari.com</p>																			



ABSMARI ETHICS COMMITTEE

ABHINAV BINDRA SPORTS MEDICINE AND RESEARCH INSTITUTE,
BHUBANESWAR, ODISHA

CDSOReg. No.: ECR/1981/Inst/OD/24

Prof. (Dr.) E. Venkata Rao
Chairperson

Mr. Chinmaya Kumar Patra
Member Secretary

Ref. No. ABSMARI/IEC/2025/189

Date: 14/05/2025

S.N.	Name of the Member	Designation & Qualification	Representation as per NDCT 2019	Gender (M/F)	Affiliation with the Institution (Y/N)
1	Prof. Dr. E. Venkata Rao	Professor (MBBS, MD, Dept. of Community Med.) IMS & Sum Hospital, BBSR	Chair Person	M	N
2	Dr. Smaraki Mohanty	Asst. Prof-IMS & Sum Hospital/MBBS, MD (Community Med)	Clinician	F	N
3	Mr. Chinmaya Kumar Patra	Principal-ABSMARI, MPT	Member Secretary	M	Y
4	Ms. Annie Hans	Disability Inclusive Development Co-Ordinator in Humanity and Inclusion (India/Nepal/Srilanka). /MA in Social Work	Social Scientist	F	N
5	Ms. Subhashree Samal	Ref. Reader-Pol Sc.	Lay Person	F	N
6	Mr. Deepak Kumar Pradhan	Asst. Prof-ABSMARI, MPT	Scientific Member	M	Y

MEMBERS

Dr. Smaraki Mohanty
Clinician

Dr. Satyajit Mohanty
Scientific Member

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Legal Expert

Ms. Annie Hans
Social Scientist

Ms. Subhashree Samal
Lay Person

Mr. Deepak Ku. Pradhan
Scientific Member

IEC-SECRETARIAT

Mr. Gouranga Ku. Padhy
Mr. Susant Ku. Raychudamani

This is to confirm that only members who are independent of the Investigator and the Sponsor of the trial have voted/ provided opinion on the trial.

This Committee approves the documents and the conduct for the study in the presented form with necessary recommendation.

The ABSMARI IEC must be informed about the progress of the study in the prescribed format attached, any SAE occurring in the course of the study, any changes in the protocol and patient information/informed consent/assent and request to provide a copy of the final report.

The ABSMARI IEC follows procedures that are in compliance with the requirements of ICH (International Conference on Harmonization) guidance related to GCP (Good Clinical Practice) and applicable Indian regulations.

Yours sincerely,

Mr. Chinmaya Kumar Patra
Member Secretary
ABSMARI Ethics Committee
Pahal, Bhubaneswar
Member Secretary
ABSMARI ETHICS COMMITTEE



2

Utkal Signature, Plot No.-273,
Ground Floor, Pahal, Bhubaneswar-752101

+91-63707-03654

iec@absmari.com

ANNEXURE 2

INFORMED CONSENT

Informed Consent form to participate in a clinical trial

Study Title: Immediate Impact of FUNBALL training program on jumping and agility performance in School male soccer players - A randomized controlled trial.

Study Number:

Subject's Name: _____ Subject's Initials: _____

Age: _____

Address of the Subject _____

Qualification _____

Occupation: Student/Self-Employed/ Service/Housewife/Others (Please tick as appropriate)

Name and address of the nominee(s) and his relation to the subject _____

(i) I confirm that I have read and understood the information sheet dated _____ for the above study and have had the opportunity to ask questions.

(ii) I understand that my participation in the study is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected.

(iii) I understand that the Sponsor of the clinical trial, others working on the

Sponsor's behalf, the Ethics Committee and the regulatory authorities will not need my permission to look at my health records both in respect of the current study and any further

research that may be conducted in relation to it, even if I withdraw from the trial. I agree to this access. However, I understand that my identity will not be revealed in any information released to third parties or published.

(iv) I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s)

(v) I agree to take part in the above study.

Signature (or Thumb impression) of the Subject/Legally Acceptable Representative:

Date: ____/____/____

Signatory 's Name: _____

Signature of the Investigator: _____

Date: Study Investigator 's Name: _____

Signature of the Witness: _____

Date: ____/____/____

Name of the Witness: _____

*Copy of the Information Sheet and duly filled Informed Consent Form shall be handled over to the subject or his/her attendant.

ANNEXURE 3

INFORMED CONSENT FOR PARENTS

Informed Consent form to participate in a clinical trial

Study Title: Immediate Impact of FUNBALL training program on jumping and agility performance in School male soccer players – A randomized controlled trial.

Study Number:

Subject's Parents Name: _____ Subject's Parents Initials: _____

Parents Age: _____

Address of the Subject's parent: _____

Qualification of the parent: _____

Occupation of the parent: Student/Self-Employed/Service/Housewife/Others (Please tick as appropriate)

(i) I confirm that I have read and understood the information sheet dated _____ for the above study and have had the opportunity to ask questions.

(ii) I understand that my ward's participation in the study is voluntary and that he/she is free to withdraw at any time, without giving any reason, without his/her medical care or legal rights being affected.

(iii) I understand that the Sponsor of the clinical trial, others working on the Sponsor's behalf, the Ethics Committee and the regulatory authorities will not need my permission to look at my ward's health records both in respect of the current study and any further research that may be conducted in relation to it, even if my ward withdraws from the trial. I agree to this access. However, I understand that my ward's identity will not be revealed in any information released to third parties or published.

(iv) I agree not to restrict the use of any data or results that arise from this study provided such a use is only for scientific purpose(s)

(v) I permit my ward to take part in the above study.

Signature (or Thumb impression) of the Subject's Parent:

Date: ____/____/____

Signatory 's Name: _____

Signature of the Investigator: _____

Date: Study Investigator 's Name: _____

Signature of the Witness: _____

Date: ____/____/____

Name of the Witness: _____

ANNEXURE 4

CASE REPORT FORM (CRF)

NAME:

AGE:

GENDER:

DOMINANCE:

ADDRESS:

CONTACT NUMBER:

OUTCOME MEASURES:

OUTCOME MEASURE	PRE-INTERVENTION SCORE
Modified Illinois Change of Direction Test	
Sargent Jump Test	

OUTCOME MEASURE	POST-INTERVENTION SCORE
Modified Illinois Change of Direction Test	
Sargent Jump Test	

ANNEXURE 5

Master Chart

	EGAGE	EGVPRE	EGVPOS	EGAPRE	EGAPOS	CGVPRE	CGVPOS	CGAPRE	CGAPOS	EGHEIG	EGWEG	CGAGE	CGHEIG	CGWEIG
		T	T		T		T		T	HT	HT		HT	HT
1	14.00	270.00	273.00	12.07	12.00	250.00	251.00	12.00	12.00	171.00	47.00	15.00	162.00	42.00
2	14.00	260.00	265.00	12.38	12.00	253.00	253.00	12.25	12.11	156.00	40.00	15.00	170.00	50.00
3	14.00	253.00	254.00	12.94	12.00	260.00	262.00	11.25	11.20	162.00	50.00	14.00	159.00	46.00
4	15.00	255.00	257.00	13.02	12.00	255.00	255.00	12.30	12.30	162.00	51.00	16.00	162.00	43.00
5	14.00	265.00	268.00	12.09	11.00	255.00	255.00	12.00	12.00	153.00	44.00	14.00	156.00	52.00
6	15.00	263.00	264.00	13.00	12.00	258.00	258.00	12.70	12.60	164.00	56.00	15.00	154.00	44.00
7	15.00	250.00	254.00	12.00	12.00	258.00	258.00	12.35	12.30	172.00	52.00	14.00	157.00	49.00
8	16.00	260.00	268.00	12.41	12.10	260.00	261.00	12.67	12.67	160.00	51.00	15.00	160.00	51.00
9	15.00	262.00	265.00	12.69	11.00	262.00	262.00	11.30	11.28	163.00	53.00	15.00	168.00	50.00
10	15.00	253.00	256.00	12.27	11.00	258.00	258.00	13.02	13.00	162.00	49.00	15.00	161.00	51.00
11	15.00	258.00	256.00	13.44	12.00	250.00	251.00	12.00	11.30	162.00	44.00	14.00	171.00	56.00
12	16.00	263.00	265.00	11.37	11.00	253.00	253.00	12.00	11.34	162.00	52.00	14.00	162.00	55.00
13	15.00	271.00	274.00	12.05	12.00	256.00	257.00	12.21	12.10	170.00	55.00	14.00	160.00	42.00
14	14.00	270.00	273.00	12.00	11.50	252.00	251.00	12.10	12.00	172.00	51.00	15.00	163.00	44.00
15	16.00	268.00	271.00	12.08	11.07	255.00	255.00	12.00	11.30	168.00	45.00	16.00	153.00	56.00
16	16.00	256.00	257.00	12.38	11.90	251.00	252.00	12.40	12.30	163.00	47.00	14.00	161.00	55.00
17	15.00	261.00	264.00	12.90	12.00	260.00	260.00	12.40	12.28	160.00	50.00	15.00	157.00	45.00
18	15.00	260.00	262.00	12.37	12.00	260.00	260.00	12.10	12.00	158.00	48.00	15.00	162.00	43.00

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