

The Effect of Special Exercises in the Intermittent Style (Short – Short) on Some Physical and Skill Abilities of Youth Football Players

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Abstract: Football is one of the games that has witnessed a remarkable development in the performance of players and their ability to provide distinct levels through their ability to provide the best skill level throughout the game, which indicates the development of their various physical and skill capabilities. There are many and varied exercises that helped in the development of this game, and one of these exercises is the use of (intermittent exercises (short – short), which is based on exercises that are close to the player's performance during the game, the goal of the study is to prepare exercises in the intermittent style (short – short) and their impact on the development of some physical abilities (maximum speed, explosive power, strength marked by speed) and skill(rolling, handling and scoring) for youth football players . The researcher used the experimental method using the method of equal groups on the players of the agreement Sports Football Club, numbering (20) young people after the sample was divided into two experimental and control groups, with (10) players for each group, and the two groups were equated with the study variables , and the group underwent special exercises in the intermittent style (short – short) for (8) week and with (3) training units per week, and through the results, the researcher concluded that – Short) a positive impact on the development of

some physical and skill abilities under study (maximum speed, explosive power, speed-marked strength) and some skills (rolling, handling and scoring)

Keywords: Intermittent Training, Youth Football Players, Physical Performance, Technical Skills, High-Intensity Training

Introduction

Research Introduction and Significance

Sport evolution and transition to higher performance and world records are similarly so multivariate interplay processes that beyond specific technical and physical thresholds we witness the appearance of previously arbitrary limits. It also features many forms of training diversity trainers using with finding performance, physical and technical competence elements through differences in workouts stimuli. There are tactical and yet psychological and educational elements to it as well. Also, the interaction of training process with allied sciences, i.e. training science, psychology and sports medicine have supported this performance enhancement.

Football is the most popular sport in the entire world. You need no special equipment, and consequently it can be performed in a myriad of places. There have been clear steps in the players and their capacity to keep the technical level in a match for 90-

minutes. — potential answers to 'what is/was wrong' hypothesis 4/28 — The football is pretty but win930 This could be progress in skill, particularly physical/technical skill.

Thus, it is backed with alternative training exercises. One of them could be short-short intermittent training, characterized by movement patterns that are very similar to those shapes seen when playing a match. During the ages you focus on physical & technical training this is the age range of 17–19, which is an important development phase for youth players. These are some of the foundational capabilities, which serve as the basis for the progression to things you might do at a senior level.

Introduction: This study is important as the short-short intermittent exercises for performance-based sport although it may be a training modality that can be used in succession as it specifically aims to improve specific physical aspects and key football skills. Helping to increase player physicals and technical. Make up, leaving to a higher standard of performance.

Research Problem

Different training methods in all sports would certainly improve the physical and technical profile of a player helping in better performance during a game. The lack of fitness components and poor functional skills (in particular, play speed and ball switches) were identified by the researcher from their own experience as a player and subsequent observation of 17–19-year-old youth sides. According to the researcher, this is mainly because of a limited variety of diversity in the applications used and training methods.

Therefore, the researcher tackles this problem by preparing an intermittent training unit, each one ranging from short to very short exercise, to be used in units of training in order to develop selected physical qualities and fundamental skills among players of football.

Research Objectives

The study aims to:

1. Design short-short intermittent training exercises to develop selected physical abilities (maximum speed, explosive power, speed-strength) and technical skills (dribbling, passing, shooting) of youth football players.
2. Identify the effect of short-short intermittent training on the development of selected physical abilities of youth football players.
3. Identify the effect of short-short intermittent training on the development of selected technical skills of youth football players.

Research Hypotheses

1. Short-short intermittent training has a positive effect on developing selected physical abilities of youth football players.
2. Short-short intermittent training has a positive effect on developing selected technical skills of youth football players.

Research Scope

- a. Human Scope: Youth players of Al-Ittifaq Sports Club.
- b. Time Scope: From 22 April 2025 to 10 July 2025.
- c. Place Scope: Al-Ittifaq Sports Club stadium.

Definition of Terms

Short-Short Intermittent Training refers to a type of sports training characterized by very short work or effort periods, followed by short rest or recovery periods.

Methodology

The researcher adopted the experimental method due to its suitability for the nature of the research problem and for achieving the study objectives and hypotheses. The experimental method is defined as the intentional manipulation of variables under controlled conditions for a specific phenomenon, followed by observation and interpretation of the resulting changes.

The researcher applied the equivalent groups design, consisting of an experimental group and a control group. Both groups were identical in all conditions except for the experimental variable applied to the experimental group.

Research Population and Sample

The research population consisted of youth players of Al-Ittifaq Sports Club, selected intentionally, with a total of 22 players. The study sample included 20 players selected from the population, while 2 players were excluded due to injury, representing 9.10 percent of the population.

The selected players were randomly assigned using the lottery method into two groups: an experimental group and a control group, each consisting of 10 players. Equivalence between the two groups was established for the study variables. To verify sample equivalence, the researcher statistically analyzed the pre-test results of both groups using appropriate statistical methods. The results indicated randomness and equivalence, as shown in Table 1.

Table (1). Shows the arithmetic means, standard deviations, and the calculated and tabulated t-values for the homogeneity and equivalence tests of the control and experimental groups.

No.	Measurements and Tests	Control Group (Mean)	Control Group (SD)	Experimental Group (Mean)	Experimental Group (SD)	Calculated t-value	Tabulated t-value*	Significance
Homogeneity	1. Height (cm)	181	5.533	182	5.902	0.156	2.1	Random
	2. Weight (kg)	68.30	2.750	68.70	2.311	0.352		Random
	3. Age (years)	18.20	0.632	18.100	0.875	0.293	0.	Random
Equivalence	1. 30 m flying start run (s)	4.074	0.296	4.086	0.261	0.096	2.1	Random

2. Forward hopping for 10 s (m)	39.150	1.546	39.00	1.873	0.195	Random
3. Standing vertical jump (cm)	35.1	4.677	33.8	6.356	0.521	Random
4. Dribbling the ball between cones from the goal line to the penalty line (16.5 m) and back to the goal line (s)	16.204	0.620	16.529	1.088	0.820	Random
5. Rebound passing against the wall for 20 s (repetitions)	8.5	0.894	8.7	0.948	0.497	Random
6. Kicking the ball toward a target drawn on the wall for 20 s (repetitions)	7.9	0.875	7.7	0.948	0.490	Random

*The tabulated t-value at a degree of freedom (18) and a significance level of (0.05).

Methods of Data Collection

The researcher used the following methods:

1. Arabic and foreign sources.
2. Tests and measurements.
3. Pilot study.
4. Devices and tools used:
 - Electronic stopwatches, number (2), type (Smtwtfs / Js. 316).
 - Height measuring tape and cardboard scale for weight measurement.
 - Measuring tape.
 - Cones, number (10).
 - Footballs, number (10).
 - Poles, number (8).
 - Hurdles, number (20).
 - Benches, number (4).

- Football field.

Research Procedures

Identification of Basic Football Skills

The researcher surveyed the opinions of specialists regarding the most important basic football skills according to their importance and priority in training, in a manner consistent with the research topic.

Tests

The researcher identified the physical and technical tests relevant to the study. The physical tests included maximum speed, speed-strength, and explosive power. The technical tests included dribbling, passing, and shooting.

Speed-Strength Tests

a. **First: 30 m Flying Start Run Test (3:81)**

b. **Test Name:** 30 m flying start run.
Test Objective: Measuring maximum speed.

Test Description: The player stands behind the first cone. Upon hearing the whistle, the player starts running until reaching the second cone, which is 20 m from the first cone, then continues running to reach the third cone, which is 30 m from the second cone. The total distance covered by the player is 50 m, as shown in the figure.

Scoring: The time is recorded in seconds and fractions of a second from the moment the player reaches the second cone until the finish, covering a distance of 30 m.

c. **Second: Forward Hopping Test for 10 Seconds (4:28)**

d. **Test Name:** Forward hopping for 10 seconds.
Test Objective: Measuring the strength of the leg muscles.

e. **Test Description:**

- The player starts behind the starting line. Upon hearing the whistle, the player performs hopping on one leg to cover the longest possible distance within 10 seconds.
- Each player is given two attempts, and the best attempt is recorded.

Scoring: The distance covered is measured using a measuring tape to the nearest meter and its fractions.

Third: Standing Vertical Jump Test (5:45)

Test Name: Standing vertical jump.

Test Objective: Measuring the explosive power of the leg muscles.

Test Description:

- The player places the fingers of one hand in chalk, stands facing the wall, and extends both arms upward to the maximum possible height while keeping the heels on the ground.
- A mark is made on the wall, and the recorded height is noted.

Scoring: The distance between the two marks (1 and 2) represents the participant's level of explosive power, measured in centimeters.

Skill Tests

First: Ball Dribbling Test (6:35)

Test Name: Dribbling the ball between cones from the goal line to the penalty line (16.5 m) and back to the goal line.

Test Objective: Measuring dribbling speed and the ability to dribble quickly while changing direction.

Test Procedures: Six cones are fixed on the ground, with a distance of 2.5 m between each cone. The distance between the first cone and the goal line is 4 m.

Test Description:

- The player starts from the goal line. Upon the start signal, the player dribbles the ball between the cones forward and backward, beginning by passing to the left of the first cone.
- Each player is given two attempts, and the best attempt is recorded.

Scoring: The total time taken to complete the forward and return dribbling is recorded. The best performance is determined by the shortest recorded time.

Second: Rebound Passing Test (6:57)

Test Name: Rebound passing against the wall for 20 seconds.

Test Objective: Measuring passing speed.

Required

A smooth wall marked with a target area of 1.5 m × 2.20 m, a line drawn 5 m in front of the wall, three footballs, and two electronic stopwatches.

Test

After hearing the whistle, the player standing behind the starting line kicks the ball toward the wall and strikes it again after it rebounds. This continues until the test duration of 20 seconds ends.

Scoring: The number of correct passes directed toward the wall within 20 seconds is recorded.

Equipment:

Description:

Third: Kicking the Ball Toward the Wall Test (7:42)

Test Name: Kicking the ball at a target drawn on the wall for 20 seconds.

Test Objective: Measuring shooting speed by achieving the highest number of correct attempts within 20 seconds.

Required

Five footballs, a stopwatch, chalk, a measuring tape, and a wall with a rectangular target drawn on it measuring 3 m × 6 m.

Equipment:

Test Procedures:

- A chalk line is drawn parallel to and facing the wall at a distance of 6 m.
- The player stands behind the starting line facing the wall, with the ball placed behind the line.
- Upon the start signal, the timekeeper starts the stopwatch when the player touches the ball with the foot.

Test Description:

- The player kicks the ball using the foot, aiming to direct it accurately within the boundaries of the target on the wall as quickly as possible.
- If the ball moves away from the testing area, the player may use one of the spare balls instead of waiting for the ball to return.
- The player may kick the ball while it is in the air or on the ground, provided that the kick is executed from behind the starting line.
- The test is based on speed.
- If the ball is kicked beyond the starting line, the player must retrieve it using the feet or hands and return it behind the line before continuing the test.

Scoring: The player's score is calculated as the total number of correct kicks achieved within the 20-second duration.

Pilot Study

A pilot study is defined as "a small-scale experiment similar to the actual experiment" (8:35). The researcher conducted the pilot study on 24 April 2025 using a sample outside the main research sample. The pilot sample consisted of four players drawn from the research population. For the researcher, the pilot study served as practical scientific training to identify potential strengths and weaknesses that might arise during test administration, in order to avoid them during the main experiment.

Scientific Foundations of the Tests

The validity, reliability, and objectivity of the tests used in the study were established after conducting the pilot study and before administering the pre-tests. The tests were standardized. Validity and reliability were calculated to ensure the suitability of the tests for the research sample.

Test Validity

Validity is defined as "the extent to which a test measures what it was designed to measure" (9:273). Based on the results of the first and second applications, test validity was determined using the self-validity coefficient, as "self-validity is calculated by taking the square root of the reliability coefficient of the test" (10:240). The results showed that all calculated values were greater than the tabulated t-value of 0.576 at a degree of freedom of 10 and a significance level of 0.05. This indicates that the tests possessed acceptable validity, as shown in Table (4).

Test Reliability

Reliability is defined as "the degree of accuracy, precision, or consistency with which tests measure the characteristics for which they were designed" (11:273). Test reliability was calculated according to scientific testing principles using the test-retest method. The first test was conducted on 28 April 2025 with four players from the study sample. The second test was administered on Saturday, 13 May 2025, under the same conditions and at the same time.

Reliability coefficients were calculated using Pearson's simple correlation coefficient. Statistical analysis revealed that all tests used in the study demonstrated a high degree of reliability, as shown in Table (2).

Table (2). Shows the reliability coefficient and self-validity coefficient of the tests.

No.	Test	Reliability Coefficient	Self-Validity Coefficient
1	30 m flying start run	0.91	0.95
2	Forward hopping for 10 seconds	0.85	0.92
3	Standing vertical jump	0.88	0.93
4	Dribbling between cones from the goal line to the penalty line (16.5 m) and back to the goal line	0.84	0.91
5	Rebound passing against the wall for 20 seconds	0.80	0.89
6	Kicking the ball at a target drawn on the wall for 20 seconds	0.89	0.94

The tabulated value is 0.576 at a degree of freedom of 10 and a significance level of 0.05.

Test Objectivity

Objectivity refers to the absence of subjective judgment by the examiner, ensuring that the test results are free from bias or personal interference. As the level of subjectivity in test judgments increases, objectivity decreases (8:223). Since scoring was based on time units, number of successful attempts, meters, and fractions of meters, the tests demonstrated an acceptable level of objectivity.

Pre-Tests

Pre-tests were conducted for the research sample, including both the control and experimental groups, on 4 May 2025. Physical tests for both groups were administered on 2 May 2025, while skill tests were conducted on 4 May 2025 for both groups at Al-Ittifaq Sports Club stadium. The physical and skill tests included the following:

1. 30 m flying start run.
2. Forward hopping for 10 seconds.
3. Standing vertical jump.
4. Dribbling the ball forward and backward between cones from the goal line to the penalty line (16.5 m).
5. Rebound passing against the wall for 20 seconds.
6. Kicking the ball at a target drawn on the wall for 20 seconds.

Main Experiment

After reviewing numerous sources and studies addressing the effects of short–short intermittent training, and after conducting the pilot study to determine appropriate intensity levels, exercise suitability, and execution characteristics, the training program was presented to experts and specialists in sports training science. The program was then applied to the research sample for eight weeks during the special preparation phase, with three training units per week.

The researcher observed the following considerations during the application of the training program:

- The short–short intermittent training exercises were implemented from 6 May 2025 to 10 July 2025, totaling 24 training units.

- The exercises were applied only to the experimental group by the working team under the supervision of the researcher.
- The duration allocated for implementing the training program within a single training unit ranged from 30 to 35 minutes, beginning at the start of the first part of the main section.
- The control group followed the training program designed by the coach for the same time duration as the experimental group.
- In the short-short intermittent training method (15–15), the work period consisted of 15 seconds of maximal or near-maximal effort performed at very high intensity.
- The rest or recovery period lasted 15 seconds and consisted of either active recovery, such as light walking or slow jogging, or passive recovery involving complete rest, allowing the body to prepare for the next bout.
- The work-to-rest ratio was 1:1, meaning one second of work for every one second of rest.

The duration of performance for other intensity levels was determined based on the principle of proportionality for each exercise, as illustrated in the following example:

Continuous jumping with knees pulled toward the chest in a forward direction at an intensity level of 75 percent.

$$\begin{array}{rclcl}
 \text{Maximum} & \text{time} & \times & \text{required} & \text{intensity} \\
 \text{-----} & & = & \text{performance} & \text{time} \\
 100 & & & & \\
 12 & & \times & & 75 \\
 \text{-----} & = & 9 & \text{seconds} & (\text{performance time}) \\
 100 & & & &
 \end{array}$$

This means that when the maximum time is 12 seconds and the required intensity is 75 percent, the calculated performance time equals 9 seconds.

Post-Tests

The post-tests were conducted after completion of the main experiment on 10–11 July 2025 for both the physical and skill tests. The researcher ensured that the same conditions and testing location used in the pre-tests were maintained in order to avoid any influence on the post-test variables of the research sample.

Statistical Methods

The researcher used the Statistical Package for the Social Sciences (SPSS).

Result and Discussion

Table (3). Shows the arithmetic means, standard deviations, and the calculated and tabulated t-values between the pre- and post-test results of the physical tests for the control group.

No	Tests	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Mean Difference	SD Difference	of	Calculate d t-value	Tabulate d t-value	Significance
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1	30 m flying start run (s)	4.074	0.296	3.908	0.315	0.166	0.020	8.227	2.26	Significant
2	Forward hopping for 10 s (m)	39.154	1.546	40.2	1.619	1.050	0.273	3.841		Significant
3	Standing vertical jump (cm)	35.1	4.677	38.1	3.842	3.0	0.447	6.708		Significant

*The tabulated t-value at a degree of freedom of 9 and a significance level of 0.05.

Table (3), statistically significant differences are observed between the pre- and post-tests in the physical variables, in favor of the post-tests.

Presentation and Analysis of Physical Test Results for the Experimental Group

Table (4). Shows the arithmetic means, standard deviations, and the calculated and tabulated t-values between the pre- and post-test results of the physical tests for the experimental group.

No .	Tests	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Mean Difference	SD of Difference	Calculated t-value	Tabulated t-value	Significance
1	30 m flying start run (s)	4.086	0.261	3.214	0.030	0.872	0.085	10.192	2.26	Significant
2	Forward hopping for 10 s (m)	39.00	1.873	43.3	2.626	4.0	0.833	4.800		Significant
3	Standing vertical jump (cm)	33.8	6.356	44.6	4.477	10.8	1.218	8.864		Significant

*The tabulated t-value at a degree of freedom of 9 and a significance level of 0.05.

Table (4) shows statistically significant differences between the pre- and post-tests in all physical variables, in favor of the post-tests.

Discussion of Physical Test Results for the Control and Experimental Groups

Based on Tables (3) and (4), statistically significant differences are evident between the pre- and post-tests for both the control and experimental groups in the physical variables under investigation. The researcher attributes the improvement observed in the control group to the use of specific physical exercises aimed at developing physical abilities and to the continuity of daily training using exercises prepared by the team coach.

Rather, it is due to the utilization of short-short intermittent training drills within the experimental intervention group that accounts for the higher improvement. The researcher attributes the improvement to the fact that this type of training uses short, explosive strength efforts such as hopping, jumping, and bounding originating from plyometric contractions. We utilized these drills again to help develop force speed, explosive power, and max speed. The role of these special exercises and their importance in developing the physical characteristics that are directly related to the variables of the study has been emphasized by many Arabic and foreign sources. As described by Mufti Ibrahim (1998), —These jumps (jumping, hopping, bounding) are exercised in sports training to develop speed strength, explosive strength, speed and jump ability (12:133)

Presentation, Analysis, and Discussion of Skill Test Results for the Control and Experimental Groups

Presentation and Analysis of Skill Test Results for the Control Group

Table (5). Shows the arithmetic means, standard deviations, and the calculated and tabulated t-values between the pre- and post-test results of the skill tests for the control group.

No .	Tests	Pre-test Mean	Pre-test SD	Post-test Mean	Post-test SD	Mean Difference	SD of Difference	Calculated t-value	Tabulated t-value	Significance
1	Dribbling between cones from the goal line to the penalty line (16.5 m) and back (s)	16.20 4	0.62 0	15.59 3	0.42 9	0.611	0.217	2.810	2.26	Significant
2	Rebound passing against the wall for 20 s (repetition s)	8.5	0.89 4	10.6	1.17 3	2.1	0.179	11.699		Significant
3	Kicking the ball at a target on	7.9	0.87 5	8.9	0.99 4	1.0	0.210	4.743		Significant

the wall
for 20 s
(repetition
s)

Presentation and Analysis of Skill Test Results for the Experimental Group

Table (6). Shows the arithmetic means, standard deviations, and the calculated and tabulated t-values between the pre- and post-test results of the skill tests for the experimental group.

No	Tests	Pre- test Mean	Pre- test SD	Post- test Mean	Post- test SD	Mean Differen ce	SD Differen ce	Calculated t-value	Tabulated t-value	Significance
1	Dribbling between cones from the goal line to the penalty line (16.5 m) and back (s)	16.529	1.088	14.595	0.721	1.934	0.439	4.403	2.26	Significant
2	Rebound passing against the wall for 20 s (repetition s)	8.7	0.948	13.4	1.429	4.7	0.395	11.874		Significant
3	Kicking the ball at a target on the wall for 20 s (repetition s)	7.7	0.948	11.1	1.523	3.4	0.266	12.750		Significant

*The tabulated t-value at a degree of freedom of 9 and a significance level of 0.05.

From Table (6), statistically significant differences are observed between the pre- and post-tests in all skill variables, in favor of the post-tests.

Discussion of Skill Test Results for the Control and Experimental Groups

Tables (5) and (6) show statistically significant improvements between the pre- and post-tests for both the control and experimental groups in the skill tests under investigation. The researcher attributes the improvement observed in the control group to the players' continued training according to the program prepared by the team coach. This outcome is expected, as the design of any training program and the continuity of training lead to

improvement and development of any physical attribute or skill included within the training plan.

Regarding the experimental group, the observed improvement is attributed to the application of short-short intermittent training exercises. These exercises included hopping and jumping performed through plyometric muscle contractions. When compared with the traditional training methods used to develop explosive power and speed-strength of the lower limbs in the control group—methods that typically rely on resistance training—the intermittent short training approach better meets the specific requirements of modern football players and is more suitable for the studied age group.

The development of physical attributes had a direct impact on improving the level of skill performance. This improvement resulted from selecting specific exercises that match the characteristics of the research sample, as appropriate exercise selection enables coaches to develop physical attributes while simultaneously enhancing skill execution (13:46).

According to the researcher, better results were possible to attribute to the carefully scientific method of the study, which included short, high-intensity intermittent exercises. They improved skill performance by emphasizing correct execution and habituating players to making quick decisions at the right moment through systematic sequencing. It is a critical component of facilitating the appropriate execution of skills.

As per the t-values calculated and their statistically significant differences, it can be concluded that the various training methods implemented on the experimental group during the process of training had proved to be forceful & effective in developing skill abilities. This result aligns with the evident link between gains in physical capacities and concomitant gains in skill performance. Abu Al-Ala Ahmed Abdel Fattah stated that improvement of performance endurance in football players increases their ability to repeat optimal efforts and elevate match tempo which decreases decreases in skill performance during competition (14:155).

Presentation, Analysis, and Discussion of Physical and Skill Test Results for the Control and Experimental Groups in the Post-Tests

Presentation and Analysis of Physical Test Results for the Control and Experimental Groups in the Post-Tests

Table (7). Shows the arithmetic means, standard deviations, calculated and tabulated t-values, and significance of differences between the control and experimental groups in the physical post-tests.

No.	Tests	Control Group Mean	SD	Experimental Group Mean	SD	Calculated t-value	Tabulated t-value*	Significance
1	30 m flying start run	3.908 s	0.315	3.214 s	0.030	6.926	2.1	Significant

2	Forward hopping for 10 s	40.2 m	1.619	43.3 m	2.626	3.177	Significant
3	Standing vertical jump	38.1 cm	3.842	44.6 cm	4.477	3.484	Significant

*The tabulated t-value at a degree of freedom of 18 and a significance level of 0.05.

Table (7) indicates statistically significant differences between the control and experimental groups in the post-test physical variables, in favor of the experimental group.

Presentation and Analysis of Skill Test Results for the Control and Experimental Groups in the Post-Tests

Table (8). Shows the arithmetic means, standard deviations, calculated and tabulated t-values, and significance of differences between the control and experimental groups in the skill post-tests.

No.	Tests	Control Group Mean	SD	Experimental Group Mean	SD	Calculated t-value	Tabulated t-value*	Significance
1	Dribbling between cones from the goal line to the penalty line (16.5 m) and back	15.593 s	0.429	14.595 s	0.721	3.757	2.1	Significant
2	Rebound passing against the wall for 20 s	10.6 reps	1.173	13.4 reps	1.429	4.786		Significant
3	Kicking the ball at a wall target for 20 s	8.9 reps	0.994	11.1 reps	1.523	3.823		Significant

*The tabulated t-value at a degree of freedom of 18 and a significance level of 0.05.

Table (8) shows statistically significant differences between the control and experimental groups in the skill post-tests, in favor of the experimental group.

Discussion of Physical and Skill Test Results for the Control and Experimental Groups in the Post-Tests

Tables (7) and (8) demonstrate statistically significant differences between the post-test results of the experimental and control groups in both physical and skill variables, in favor of the experimental group.

The researcher attributes these results to the application of the proposed short intermittent training method (15–15). This method includes intermittent strength exercises such as hopping, jumping, and take-off movements based on plyometric muscle contractions. These exercises are organized into work blocks lasting up to eight minutes at 100 percent of maximal aerobic velocity (VMA), followed by rest periods between blocks ranging from seven to ten minutes. According to Saihi Fouad et al., this training structure induces neuromuscular physiological adaptations accompanied by energy storage, leading to improved energy efficiency in football players, whether the work is quantitative or qualitative (15:55).

Moreover, short intermittent training prevents excessive lactate accumulation by allowing oxygen and hemoglobin replenishment during recovery phases, which is a key characteristic of the 15–15 intermittent training method, as noted by Mansouri (16:99). The alternation inherent in short intermittent training also promotes positive neural adaptations at the level of fast-twitch muscle fibers (17:77).

Based on these findings, it can be concluded that the 15–15 intermittent training method significantly enhanced explosive power in the experimental group. Consequently, these exercises were placed at the beginning of the training unit, when players were not fatigued and their nervous systems were in a highly receptive state, allowing the exercises to be performed correctly and effectively. This approach aligns with the principles outlined by Mohamed Hassan Allawi, who emphasized that such exercises should be performed at the beginning of the training unit immediately after warm-up (18:68).

A deeper look into tables (7) and (8) results in the inference of statistically significant differences over the skill performance into favor of the experimental held group. Adaptation to the improvement in physical attributes developed through conventional proposed short intermittent training method due to prevalent challenges in physical exercises from IS which included scientifically planned intermittent strength exercises in the form of hopping, jumping and take-off movements [15]. Through designed exercises that carefully sequenced skill execution with focus on accurate performance, and training players to respond during key moments, these exercises increased execution efficiency.

Fast decision making and action execution are vital football talents, as slow thinking and hesitating provide opponents or defenders opportunities to intervene and prevent shooting or passing actions (18:98). The researcher insists that implementing training programmed for explosive power would have an inevitable impact on set-play situations, especially the shooting abilities. However, whilst such training modalities are infrequently utilized during regular football training, for example, when coaches often achieve habitual execution of skills and do not focus on the physical characteristics needed for optimal

athletic skill execution, if the physical components underlying the performance of athletic skills are not developed, the skill performance may be suboptimal.

The findings suggest that strength-speed and explosive power training can favor the adaptation of set-play situations (eg, passing ability) in soccer. In order to perform these skills successfully, there is a set of technical conditions that must be met and these specific technical conditions can only be met once the muscle groups involved have developed strength related to the demands of the specific performance. It is well cited that a trajectory can be affected based on whether a body or trunk movement is 'backward or directed towards the ball or trunk' and that a trajectory moving backward tends to be upward, which can be applied to some football techniques (20:87).

As such, effective body placement is necessary for the best performance results to occur. The trunk is the biggest body segment and influences the posture of the rest of the body, so a special consideration on trunk movement during different types of jumping exercises is necessary. Trunk positioning is an important factor in the accuracy and speed of other body movements needed to carry out the skill. This is in alignment with the findings of Hussein Mardan et al. Studies from 21:159 (1999) suggest a strong relationship between trunk inclination angle and ball speed during skills such as shooting, passing, and direct striking.

Conclusion

The researcher reached the following conclusions:

1. There are statistically significant differences between the pre- and post-tests for both the experimental and control groups in the physical and skill tests, in favor of the post-tests.
2. There are statistically significant differences between the post-tests of the control and experimental groups, in favor of the experimental group, as a result of using the specific exercises prepared by the researcher.
3. The special short-short intermittent training exercises have a positive effect on developing certain physical abilities, namely maximum speed, explosive power, and speed-strength.
4. The special short-short intermittent training exercises have a positive effect on developing certain football skills, namely dribbling, passing, and shooting.

Recommendations

1. The researcher recommends that coaches apply these exercises with youth players aged 17–19 years due to their positive impact on players' performance levels and the development of their physical and skill abilities.
2. Adopting variety in training methods is recommended to introduce enjoyment and motivation for players.
3. Conducting similar studies on age groups other than the youth category (17–19 years) is recommended.

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