

The Effect of Training on Plyometric Technique and Weights in Developing Some Physical Variables and Speed of Skill Performance of Young Soccer Players

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Abstract

The aim of the research is to identify the effect of training on the method of measuring pressure and weights on the development of some physical variables and the speed of the skillful performance of young soccer players. The experimental method was used with two equal groups. The experimental exercises were conducted by the two researchers. The exercises lasted (8) weeks, at a rate of (3) units per week, with a duration of (35-55) minutes for each training unit in developing the physical and skill variables of young soccer players.

Keywords: plyometric technique and weights, physical variables, speed of skill performance

Definition of the research:

Research introduction and its importance:

The game of football has gained great importance in most countries of the world due to its wide popularity and wide fan base as it is one of the collective games that are loved by many individuals of all levels and age groups and due to the importance of modern training methods and methods that are needed by coaches and specialists in developing and raising the capabilities and capabilities of their players. Several methods appeared commensurate with the course of this development in order to continue to raise the physical capabilities of the players commensurate with their abilities and capabilities, including these methods (the method of training, blindfolds and training by football) and since football is one of the important games that need special physical requirements, it is important for us to know The physical abilities that a soccer player needs and in order to properly prepare and develop their physical abilities in order to help in mastering the skills up to the correct performance, which guarantees us the saving of effort and time and delaying the emergence of fatigue, and the nature of the football game requires the player to perform many varied movements on the field and most of them Sudden and quick to get the ball from defense to offense as well as the long time it takes This is the game, and since play and weight training are among the training methods that help develop strength and fast play in football that can be used in a wide field to develop muscle reflexes that lead to the production of various sports movements that can be used in the field, especially in the field of sports training that It is related to the development of the special strength of various sports, including the effectiveness of football (34: 6).

Hence the importance of the research in demonstrating the effect of applying blackout and weight training exercises to develop some physical variables and the speed of skill performance of youth soccer players.

Research Problem:

The nature of the football game has its own distinctive style and this requires players to develop and master the physical abilities most related to the course of play, i.e. similar to competition, in order to reach the optimum performance as the soccer game is one of the games that is characterized by rapid and sudden play and changing positions and through the follow-up of the researchers. And its proximity to the administrative and training staff of the DhiQar Club for Youth and to the training method that is followed by the training staff of the youth of DhiQar Football Club, which did not achieve the required results due to the apparent weakness of the physical and skill performance of the players. For young soccer players.

Research Objectives:

- 1- Knowing the level of some physical variables and the speed of skill performance of youth soccer players.
- 2- Identifying the effect of training method (plyometrics - weights) in developing some physical variables and the speed of skill performance of youth soccer players.

Research hypotheses:

- 1- The presence of significant statistical differences between the pre and posttests of the experimental and control groups in some physical variables and the speed of soccer skill performance and in favor of the post test.
- 2- The presence of significant statistical differences between the post-tests of the two groups in some physical variables and the speed of soccer skill performance and in favor of the experimental group.

Research areas:

- 1- The Human Field: The DhiQar Football Club's youth players.
- 2- Time range: 7/15/2019 to 1/11/2020
- 3- Spatial Domain: Sumer Stadium.

Research methodology and field procedures

Research Methodology:

The researchers used the experimental approach designed with equivalent groups of pre and posttest to suit the nature of the problem to be solved.

Research community and sample:

The research community consisted of DhiQar Football Club players (for the 2018-2019 sports season) of (38) players and ages (16-17) years, and the research sample consisted of (24) players, who make up 70% of the original community. The intention is for two control and experimental groups of (12) players for each group. The goalkeepers and the injured players have been excluded. The sample is the exploratory experiment of (8) players.

Homogeneity of the research sample: The homogeneity of the research sample was carried out in the variables of height, weight and age of training, and Table No. (1) Shows that.

Table No. (1) It shows the homogeneity of the individuals of the research sample

Arithmetic mean	deviation	Coefficient of variation	Variables	No
%0,78	5,56	171,92	Height / cm	1
%0,27	7,50	67,93	Mass / kg	2
%0,30	9,29	31,00	Training age / month	3
%0,29	9,75	205,00	Age / month	4

*All values of the coefficient of variation were less than 30%, which indicates the homogeneity of the sample in all variables

Parity between the two groups:

The two researchers conducted parity between the two research groups (control and experimental), as shown in Table (2).

Table (2) it shows the equivalence of the two research groups in the search variables

Statistical significance	Sig	The computed t value	Post-test of the experimental group		Post-test for the control group		Statistical processors Variables
			A+	S-	A+	S-	
Not moral	0,56	0,58	0.14	2.11	0.13	2.10	Explosive force / cm
Not moral	0,87	0,16	1.30	15.33	1.23	15.33	Withstand strength / try
Not moral	0,27	1.3	0.77	4.33	0.71	4.16	The transition speed / s
Not moral	0,10	1,22	1.83	16.58	0.72	16.83	Handling and receiving speed / s
Not moral	0,54	0,27	0.93	10.16	0.83	10.16	Performance speed and scoring accuracy / s

*Significance at a level of significance $<(0.05)$ with a degree of freedom (22)

Through Table (2) there are no significant statistically significant differences between the two groups in all tests when compared with the value of the level of significance (0.05) and the degree of freedom (22). The two groups are equivalent in the research variables.

Data collection methods, tools and devices used:

- 1.Methods for collecting data: Arabic sources, personal interviews, a data transcript form, and a questionnaire form for tests.
- 2.The tools and devices used: a football field, (10) soccer balls, (10) signs, (5) hurdles, an electronic stopwatch, (2), a football goal, a tape measure. , Small Target (1 x 1m), Whistle, Colored Target Division Tape, Weighing Scale, Burke.

Field research procedures:

Determining the physical variables and speed of skill performance and their tests:

Due to the large number of physical tests of soccer players, the two researchers identified the most important of these variables and their tests, and also chose the speed of skill performance and its tests, which the researchers see as suitable for the research sample and the exercises prepared by him for football players, namely (explosive strength, bearing strength, the speed of transition, the speed of handling and receipt,

Speed of performance and accuracy of scoring).

Research Tests:

1. The explosive force test: (the test of the broad jump from stability). (28: 5).
2. Strength endurance test: (The strength test of the leg muscles from the long sitting position).
3. Transitional velocity: (the test ran (30 meters) from the start of the launch).
4. Compound skill test (handling and receiving).

Test tools: two opposite walls, height (1 m) and width (2 m), tape measure, paint, (5 ball).

Performance method: With the start signal, the laboratory handles to a wall and receives it inside a rectangle with a width (2 m) and a length (1.5 m) and turns to perform the handling on the opposite wall and continues to perform 20 handling with the wall. Run from the wall (6 m) to receive another ball.

5. The compound skill test (running, controlling the ball, speed of changing performance, scoring accuracy).

Test tools: (7) signs, (2) footballs, (2) small target, tape measure and dyes, method of performance: With the start signal, the laboratory runs from the starting line and controls the ball between the signs, then quickly changes direction towards some of the signs, then scoring A distance of (10 meters) to one of the two goals, the method of scoring: the tester performs two attempts and then extracts the arithmetic mean of their time, and in the case of wrong scoring, a time of (0.3 seconds) is added.

Exploratory experience: The two researchers conducted an exploratory experiment whose purpose was to choose the research methods and tools, as well as extract the scientific basis for the tests, the suitability of the tests, the response of the research sample, the period used to perform the exercises and how to implement them, to avoid errors and obstacles, and to determine the duties of the working team assisting with an applied sample of youth players DhiQar club, consisting of (8) players, at 3 pm on Sunday 5/8/2019, and at Sumer Stadium.

The scientific foundations of the tests: in order for the tests to be successful and measured, and to achieve the purpose of their implementation, it is required when using them that honesty, consistency and objectivity are among the most important characteristics of a good test.

Table (3) Shows stability and objectivity of muscle strength tests

Objectivity factor	Stability coefficient	Variables	the exams
0.91	0.87	Explosive force	Physical variables and speed of skill performance
0.94	0.91	Bearing strength	
0.90	0.86	Transition speed	
0.92	0.85	Fast handling and receipt	
94.0	0.90	Speed of performance and accuracy of scoring	

*The value of the correlation coefficient (Pearson) is equal to (0,70) with a degree of freedom (6) and the level of significance (0,05)

Field Experience:

Initial tests: Initial tests were conducted on the research sample by applying tests on some physical variables and the speed of skill performance, in order to identify and confirm the results of each test in the data dump form and it was conducted on Monday and Tuesday corresponding to 8-9 / 8/2019 AD at Sumer Stadium

Football, at four o'clock in the afternoon, and conducted tests, researchers and coaching staff for the team.

Training curriculum: After completing the preliminary tests, a set of physical exercises prepared by the two researchers and implemented by the trainer were applied to the experimental group in the main section of the training unit for a period of (8) weeks. At a rate of (3) units per week. It was distributed for a period of three days: (Saturday, Monday, and Wednesday), as the number of training units reached (24) training units along the training curriculum of the trainer, and the time used to implement the exercises during the training unit ranged between (35-55). Minutes), while the intensity used throughout the session ranged between (70% - 100%) of a player's maximum potential, the researchers also used time as an indicator to split the main portion of the training unit. Exercises using the method of training (plyometric and weight) through the regular increase in the number of repetitions that the player can perform during the period of application of the method. Training, and the researchers took into account during the increase in the repetitions of the player obtaining the required adjustments when performing the exercises that were prepared in a scientific way, and the application of exercises began on Saturday 13/8/2019 and the training curriculum was completed. I wanted the coach on Wednesday 10/16/2019, and the training curriculum was applied during the special preparation period.

The two researchers took into account during the application of the exercises the following: (strength and speed exercises, jumping with body weight and using different barriers and levels of heights, using the machine for explosive muscle strength exercises and skill exercises similar to play .. repetition and last and the gradation in difficulty from one exercise to another and the number of training units. In the week.)

Dimensional Tests:

The two researchers, together with the assistant work team, conducted the subsequent tests for the experimental and control groups on Saturday and Sunday 19-20 / 5/2019 at four in the afternoon at the Sumer football model stadium. In the results.

Statistical means:

The two researchers used the following statistical methods: (arithmetic mean, standard deviation, coefficient of variation, correlation coefficient (Pearson), (t) for correlated samples, (t) for independent samples).

Presentation, analysis and discussion of results:

Presenting, analyzing and discussing the results of the pre and posttests in some physical variables and the speed of skill performance of young football players for the experimental and control groups.

Presenting and analyzing the results of pre and posttests in some physical variables and the speed of skill performance of young football players for the control group and discussing them.

Table (4) shows the mean, standard deviations, the calculated (t) value, and the statistical significance. In the results of the tests of some physical variables and the speed of skill performance of the young soccer players from the control group

Function	Sig	The computed t value	Post-test of the experimental group		Post-test for the control group		Search variables
			A+	S+	A+	S+	
indicative	0.04	1.88	0.13	2.16	0.13	2.10	Explosive force / cm
indicative	0.00	3.17	0.77	16.66	1.23	15.33	Withstand strength / try
indicative	0.00	3.60	0.75	5.25	0.71	4.16	The transition speed / s
indicative	0.00	6.20	0.51	18.41	0.72	16.83	Handling and receiving speed / s
indicative	0.00	4.66	0.99	11.91	0.83	10.16	Performance speed and scoring accuracy / s

Significant at a level of significance $<(0.05)$ and with a degree of freedom (11)

Through the presentation of Table (4), the results showed that there were no statistically significant differences in all the material variables and the speed of skill performance. The researchers attribute this development in some dimensional tests of the control group to the fact that the process of training the coach for players according to his rules and regulations helped in the acquisition of some players. The basic concepts of the exercises for the game, which led to the development of its level, which had a clear role in the simple development of the players, as the results of some of them showed the presence of moral differences through before and after. Control group tests, and because the training process is an organized and continuous process that gives individual knowledge, skill, ability, ideas, or opinions to perform a job or achieve a specific material or skillful goal. It adapts to the work required of the player, whether it is specific information, skills, or mental trends. It is necessary from an organizational point of view to achieve the goals of the sports institution "(4:45). Researchers also attribute this simple development of the control group to the technique, style, and exercises that the trainer uses instead. Which had a large and clear role for these ethical differences between the pre and posttests, and in favor of the post tests of the control group.

Presenting and analyzing the results of pre and posttests in some physical variables and the speed of skill performance of young football players for the experimental group and discussing them.

Table (5) shows the mean, standard deviations, the calculated (t) value, and the statistical significance In the test results of some physical variables and the speed of skill performance of young soccer players from the experimental group

Function	Sig	The computed t value	Post-test of the experimental group		Post-test for the control group		Search variables
			A+	S+	A+	S+	
indicative	0.000	5.82	0.05	2.37	0.14	2.11	Explosive force / cm
indicative	0.000	7.13	5.65	18.33	1.30	15.33	Withstand strength / try
indicative	0.000	7.02	0.66	6.41	0.77	4.33	The transition speed / s
indicative	0.000	7.03	0.621	19.25	1.83	16.58	Handling and receiving speed / s
indicative	0.000	5.52	0.98	12.33	0.93	10.16	Performance speed and scoring accuracy / s

*Significant at a level of significance $<(0.05)$ and with a degree of freedom (11)

Through the presentation of Table (5), the results showed that there are significant differences in all tests of physical variables and the speed of skill performance of the experimental group in the pre and post tests and in favor of the post test, and the researchers attribute this development to the high effectiveness of the training approach that included a group of physical and skill exercises that were similar. Due to conditions for competition, as well as the training method used by the researchers (plyometric and weights), which led to the development of all physical abilities and skills under study, the researchers used this method that aims to develop more than one physical and skillful characteristic in parallel, which is usually used to develop the combined physical characteristics such as explosive power. It carries power and transitional speed, which aims from the researchers' point of view to develop the play and rapid skill performance of the research sample. The researchers also attribute this development to preparing this curriculum according to scientific foundations in terms of the training load, the training methods used, the training phase and the goal of training, the intensity used is commensurate with The capacities researched and the time duration to take the training were sufficient to bring about the change The outcome of the results is sufficient and appropriate, and this is what was confirmed by (Wilmer and Comstel 1994), quoting Abu Al-Ula, "that most of the physical changes resulting from training occur often during the first period of the program within 6 to 8 weeks" (32: 1) , And the continuous training will lead to a gradual increase associated with the exerted effort to the adaptations associated with the accompanying changes, and these changes may continue with the

player throughout the training period to continue controlling the components of the training load (intensity, size and intensity) and the type of work, which creates a state of instability and the adaptation of the body in return towards overcoming This state and stability also mentioned (Marwan Abdul Majeed and Muhammad Jassim Al-Yasiri 2010), "The goal of the sports training process is to reach the athlete to the highest level of athletic achievement in the event or activity in which the player specializes" (22: 7), and the researchers attribute the development of physical variables. The research may consider the important physical requirements in football that appear in many situations and during play, such as hitting the ball and jumping to the head, in which you exert strength to overcome resistance and accompany a high degree of speed, and this is what the researcher did N to prepare it through the training curriculum that contained special exercises for strength and speed, such as jumping exercises, whether with or without the ball, as the researchers used various jumping exercises with body weight, which helped the development of the level of these abilities as (Zaki Muhammad Darwish) indicated that "the various jumping exercises It plays a large and effective role in developing the level of strength of all kinds for players. Exercises based on strength and speed in a variety of ways are the appropriate and best way to develop the leg muscles. Increasing the strength of the leg muscles leads to improving speed "(54: 2).

Presenting and analyzing the results of the post-tests in some physical variables and the speed of the skill performance of youth soccer players for the experimental and control groups and discussing them

Table (6) shows the arithmetic means, the standard deviations, the calculated value of (t), and the statistical significance

In the results of the post-tests for some physical variables and the speed of skill performance of young soccer players for the control and experimental groups

Function	Sig	The computed t value	Post-test of the experimental group		Post-test for the control group		Search variables
			+S	+A	+S	+A	Explosive force / cm
indicative	0.000	4.163	0.05	2.37	0.13	2.16	Withstand strength / try
indicative	0.000	5.506	2.65	18.33	0.77	16.66	The transition speed / s
indicative	0.001	4.511	0.66	6.41	0.75	5.25	Handling and receiving speed / s
indicative	0.002	3.576	0.621	19.25	0.51	18.41	Performance speed and scoring accuracy / s
indicative	0.000	2.5.3	0.98	12.33	0.99	11.91	Search variables

*Significant at a level of significance $<(0.05)$ and with a degree of freedom (22)

Table (6) shows the presence of significant differences between the results of the dimensional tests of the control and experimental groups and in favor of the experimental group, and the researchers see the superiority of the experimental group in the physical variables and the speed of skill performance to the use of the training method used by the researchers according to (the method of plyometric and weights) in a scientific and standardized manner based on The principles of the science of sports training, which help in the development of the player, in addition to the fact that the two researchers used a training program based on selected exercises in the correct scientific method and in conditions similar to the conditions of the match in terms of the speed of movement with the ball or without a ball. (Muhannad Abdul Sattar 2001) stated, "There is a scientific fact that must be From standing there, which is that the exercises used in the training curriculum lead to the development of performance if it is based on scientific foundations in organizing the training process, using the appropriate load, noting individual differences, and under good training

conditions and under the supervision of specialized trainers, as the regulated training programs organized according to the scientific foundations work on the development of the level Physical players "(89: 8). The importance of these variables for the soccer player is that these variables are the basic components of the player and which are the basis of construction because what you need in the conditions of the match in terms of quick movement, jumping, standing up for the opponent and carrying out the scoring process from a distance, you need to perform these duties required of him by the coach, and the fact that The research sample is a youth sample, so it is certain that all of his physical basics are at a high degree of readiness to protect him from physical injuries to which the player is exposed, since his failure to perform exercises with complete correct readiness requires him to have a high degree of strength and in the shortest possible time to perform the required skill or the selected muscular exercise. By the coach, it is recommended that all young players take care of developing or building a strong foundation that would make him able to continue to develop and perform his required duty, which is addressed by the researchers in this study, and the strength tolerance variable is the basis for building other physical characteristics and that any defect of the player and his lack of full readiness for this The variable leads to an imbalance during the work of the body's muscles, which is the main source of the body's energy generation for the player and his effective movement performance within the training unit And to benefit from it during the match, which is considered the effective and basic weapon of the player in the performance during the match, and any defect of this active element leads to the effort placed on the muscular system, which leads to the accumulation of waste inside the body and the emergence of fatigue on the player and then the stress that leads to the occurrence of a muscle injury and this is what It was pointed out by (Abdul Majeed Numan and Muhammad Abdo Salih) that "endurance is one of the basic pillars of physical fitness for football players. Endurance is linked to the functional capacity of the heart, blood circulation, respiration, chemical changes in the muscles, and correct and regular training leads to the regulation of the internal organs of the player and his muscles and increases his ability to withstand effort Exerted, endurance is one of the important factors for a football player, and by losing it, the good achievement of the running required to do the exchange of positions, running with the ball, covering and following up on the overall range of playing time is in good condition, and the characteristics of the play require the availability of endurance, on which the success of the processes that make up the play depends. (66: 3).

As for the superiority in the skills aspect of the experimental group, the researchers attribute it to the effectiveness of the exercises that were applied by the members of the experimental group, which contributed to the development of these skills through the diversification of exercises and the use of auxiliary tools and tools in the implementation of exercises such as signs, flags and wall terraces, as well as the use of the colleague through bilateral exercises. The reciprocal to increase the degree of difficulty on the exercises to give them realism, as cases of scoring were carried out from the movement and in different positions and on specific areas because this increases the players' perception of distances and thus improves this skill, as well as applying the scoring process after the rapid rolling between the flags and flags and changing direction or crossing Direct deduction and aiming, in addition to the exercises for handing over manipulations and rapid movement towards the goal, and focusing on repeating these exercises for the purpose of increasing movement imprinting and raising the degree of neuromuscular compatibility, all of this contributed to achieving the required development as one of the basic objectives of training is to reach the player to the performance of the skill automatically and the player arrives To this stage through continuous repetition of performance and the adoption of various exercises , As well as focusing on the performance of exercises on accuracy because it is one of the basic elements for the success of the scoring process. "Success in playing plans requires successful scoring, which depends on the presence of two main factors: speed and accuracy. Quick scoring, sufficiency and high accuracy in hitting the target will surprise the opponent and prevent him from acting to prevent scoring.

Conclusions and recommendations

Conclusions: The two researchers reached the following conclusions:

- 1- Exercises used according to (the method of plyometric and weights) have a clear effect on the development of physical and skill variables (explosive strength, endurance force, transitional speed, handling and receiving, scoring accuracy) for youth soccer players.
- 2- The regular and accurate increase in the number of repetitions has a great effect on muscle strength.
- 3- The two researchers in his study did not work to develop all the physical abilities that a football player needs because he believes that these variables play an important and influential role in the integration of the performance of the players. The element of speed is a crucial element and an important pillar in the conflict as the requirements or rhythm of modern play are characterized by speed. It has become imperative that all players have this capacity and work to develop it, whether with or without ball.

Recommendations: In light of the conclusions reached by the researchers, the following are recommended:

- 1- The necessity of adopting the training curriculum used in accordance with (the method of blindness and weights) in the development of physical variables and skill performance under study for young football players.
- 2- The necessity of placing additional training units in small training circles that contain peaks in training (match) for the purpose of motivation and better effort on all research variables.
- 3- Giving an adequate period of time to the training curricula used in the research, with the possibility of reaching better results with physical abilities and basic skills.

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Accessory (1)

A template for the training units used

Training unit intensity 70%

First Week

Unit Goal: Power of Distinguished Pace / Scoring

Training Module (1)

Main section time: (35 - 55 / d)

Total exercise time	Rest in between Totals	Groups	Work-to-rest ratio	Time and frequency of the exercise	Exercises	Sections of the unit
3.5d 3.65d 3.65d 9.5d 4.4d 4.2 d 3.65d 3.35d 3d 3.95d	(-2/3d)	3 3 3 3 3	1:1	3×10 s 3×11 s 3×11 s 3×50 s 3×16 s 3×11 s 3×9 s 3×7 s 3×9 s 3×13 s	Exercise 1 Exercise 2 Exercise 3 Exercise 4 Exercise 5 Exercise 6 Exercise 7 Exercise 8 Exercise 9 Exercise 10	Main section: Physical / skillful