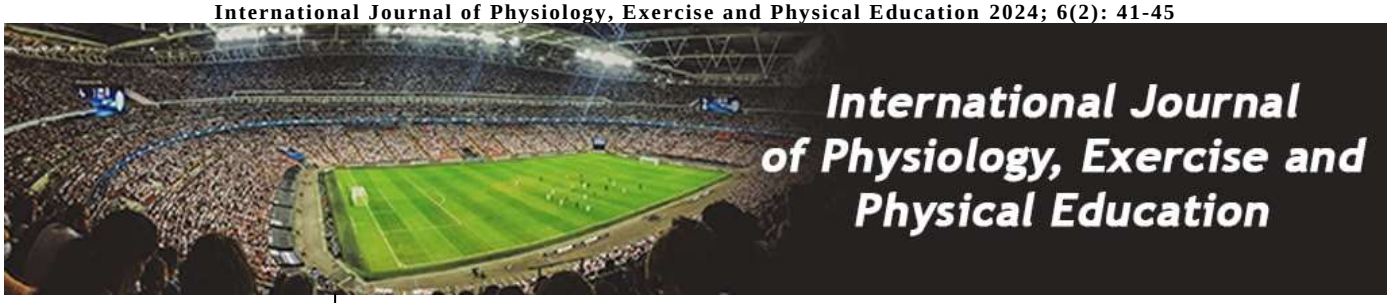

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Arkan Hasan Jabar
College of Physical Education and Sport Sciences,
Wasit University, Iraq

Corresponding Author:
Arkan Hasan Jabar
College of Physical Education and Sport Sciences,
Wasit University, Iraq

The effectiveness of complex training on the physical and functional status of football players

Arkan Hasan Jabar

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Abstract
The purpose of this paper is to identifying the physical status of football players, and identifying the functional status of football players. The researcher uses the experimental method for one group (experimental) to suit the nature of the research. The research sample was selected intentionally from young football players represented by Al-Kut Sports Club, and their number was 10 players representing a group to perform the complex exercise experiment. 5 football players were selected to represent the exploratory experiment, so that the total sample number would be 15 football players. One of the most important results reached by the researcher is that: There are statistically significant differences between the pre- and post-measurement in the physical variables of football players, and there are statistically significant differences between the pre- and post-measurement in the physiological variables of football players. One of the most important recommendations recommended by the researchers is that: Work on generalizing such programs to football coaches and players, benefit from the compound training program to improve the individual's physical and physiological status, and improve the speed and strength element by working on such programs.

Keywords: Chhani, consumption, fuel-wood, households, Lanchaan

Introduction
Sports training has become characterized by many skills in the advanced era and its connection in the most correct way to the scientific process of a nature that reflects the level of achievement from the physical and functional aspect that many coaches refer to and whose burdens fall on football players who often lack the standardization of advanced programs through which they can reach a digital achievement aimed at winning the largest number of championships, including local and international. There are those who have taken the lead in the training process recently with what they do not understand and cannot develop in the training process and its types cannot be linked. The researcher also believes that the training process to achieve an achievement was not an improvised process by the coach and its application to football players through thinking or accumulated experiences of the coach or the circumstances surrounding the player, but rather relied on planning and even on training programs based on scientific foundations through which it is possible to work on developing the aspects of the player that he needs (skill - physical - physiological), meaning limiting all the needs that the football player needs and limiting these needs and working on the composition in training to obtain a scientific achievement through which it is possible to reach a physical and skillful state and a function through which it is possible to develop the level of the football player on the scientific foundations in sports training. believe that every physical activity is accompanied by many changes that occur to the players in terms of the physical or functional aspect that the player relies on to obtain a greater capacity to confront any physical effort through which he can continue training or playing inside the field. The process of the type of training also affects the football player physically and functionally (Dal monte Aand Mirri g. 1996) [5], also indicated that modern trends through reviewing scientific centers and research that focus on this aspect have moved towards integration and not individualism or diligence in the science of sports training, meaning that there is a mixture in the single training process through the use of weights with plyometric training to obtain complex training to apply complex exercises or aerobic training with anaerobic training within the single training unit.

After applying such types of complex training, results were obtained through which the individual can reach the highest level of skill stability physically and functionally inside the stadiums (Blakey, J & Southard, D. 2004) [4]. The researcher also believes that the use of complex exercises is used in a wide range of levels in preparing football players for the statuss inside the stadium that football contains of great effort that requires speed, endurance, agility, aerobic and anaerobic abilities. This achievement comes through diversity and mixing between training, for example, using weights exercises with plyometric exercises. These exercises are used for all age groups of the player (juniors - youth - advanced) and their goal is to obtain muscular abilities through which they can confront the effort inside the stadium that affects the functional aspect of the football player. This is confirmed by the study conducted by who indicated that "compound training for football players is considered one of the best training methods through which it is possible to work on changing the individual's physical and functional status compared to the traditional method that works on adapting the player to a specific system that can take him for long periods"

Research problem

According to the sports training and the researcher's experience in the field of football schools for different age groups of football and his effective follow-up of the results of local teams at all levels within the city of Wasit, he found that there is a clear decline or decline in the process of harvesting results and not obtaining advanced positions for Al-Kut Sports Club, with no knowledge of the reasons that led to this decline. After following up on the training operations carried out by the trainers, he found that there are many reasons that led to this decline, including administrative and training, which is the lack of knowledge of some trainers in the method of developing training and not being informed about the outside world in this regard, and the other is training them due to their lack of scientific foundations for developing the training process, as well as following old training methods that cannot be achieved through them. The researcher prepared a complex training program that contains complex exercises through which he works to reach the goal of changing the physical and functional status of the football player and reflecting this change on the skill aspect.

Research objective

- The research objectives to identify the effectiveness of complex training and its impact on
- The physical status of football players.
- The functional status of football players.

Research hypotheses

Within the limits of the nature of the research, I formulated the research hypotheses in the form of questions as follows:

- To what extent does compound training affect the physical status of football players.
- To what extent does compound training affect the functional status of football players.

Research fields

- Human field: Al-Kut Sports Club Youth Players
- Time field: (5/2/2024) to (7/5/2024)
- Spatial field: Al-Kut Olympic Club Stadium.

Terms used

Complex exercise

It is one of the training methods used in weight training and plyometric training together in the training unit within a circuit training.

Research methodology and field procedures

Research Methodology

The researcher uses the experimental method for one group (experimental) to suit the nature of the research

Community and sample research

The research sample was selected intentionally from young football players represented by Al-Kut Sports Club, and their number was 10 players representing a group to perform the complex exercise experiment. 5 football players were selected to represent the exploratory experiment, so that the total sample number would be 15 football players.

Table 1: Homogeneity of the research sample individuals for each of the height, weight, age, n = 5

Variables	Measuring unit	Mean	Std. Deviations	Skewness
Age	Year	18.57	0.135	-0.424
Length	Cm	173.5	4.245	-0.524
Weight	Kg	67.21	9.214	2.45

Table (1) shows the normality of the distribution of growth variables (age - Length - weight) for each of the experimental group members, as the skewness coefficient falls between (±3)

Data collection tools and methods

Tools and devices

1. Medical scale with a restammeter
2. A device for measuring the number of heartbeats
3. An espirometer device for measuring vital capacity
4. Stop watch
5. Flags - cones - training barriers - chalk - medical balls
6. Measuring tape - ruler
7. Training weights with different weights

Exploratory study

The exploratory study was conducted on 5/2/2024 to ensure the validity and reliability of the special test (physical - physiological) under study

The proposed training program for complex training

The foundations on which the proposed training program was established

Determining the goal and characteristics of the age group and the period in which the program is applied in addition to determining the duration of the training program and the total number of training units

Determining the period of application of the program

By referring to the scientific references and previous studies, the researcher confirmed that the time for implementing the proposed program is 8 weeks, with 4 training units per week, so that the total number of training units is 32 training units, and this is a sufficient period to implement and achieve the program's goal.

Determining the intensity of the load
The intensity of the load was determined according to the goal of each training unit per week.

Table 2: Shows the distribution of loads

Load degree	Maximum load	Lower than maximum load	Average load
Load intensity	90-00%	75-90%	50-75%
Load size	Repeat 1-4 times	Repeat 4-8 times	Repeat 8-10 times
Load density	3-4 minutes	2-3 minutes	1-2 minutes

Implementation of the proposed training program: The proposed training program was applied to the research sample from 6/2/2024 to 6/4/2024 (8) weeks at a rate of (4) training units per week at Al-Kut Sports Club.

Table 3: shows the general content of the proposed training program

Variables	Time Distribution
Program stage	Special numbers for players – before the competition
Number of Weeks	4 units
Number of Week Units	4 units
Total Number of Training Units	32 units
Time of Training Unit	60 minutes

Post-measurement
The post-measurement was conducted for the research sample after the completion of the training program on 7/4/2024, with the same tools and places for the first (pre-) measurement

Results and Discussion
Results

Table 3: show the difference between the pre- and post-measurement in the physical variables under study

Variables	Tests	Unit of Measure	Measurement	Mean	Standard deviation	T value
Speed	30m sprint	second	Pre	3.421	0.039	*14.854
			Post	3.017	0.031	
Aerobic Endurance	12min run	Meter	Pre	1873	20.742	*13.214
			Post	2325	24.254	
force Endurance	Push up from standing	count	Pre	33.00	3.214	*4.236
			Post	42.00	4.564	

Table t value at a significant level of 0.05 = 2.262

It is clear from Table (3) that there are statistically significant differences between the pre- and post-measurement in the physical variables in favor of the post-measurement at a level of 0.05.

Table 4: Significance of the difference between the pre- and post-measurements of the research sample in the functional variables under study

Variables	Tests	Unit of Measure	Measurement	Mean	Standard deviation	T value
Vital capacity	Vital capacity	liter	Pre	0.142	0.010	*3.985
			Post	0.131	0.031	
Pulse rate	at rest	pulse/min	Pre	74.3	2.971	1.023
			Post	71.2	3.324	
Aerobic capacity	Vertical jump test	degree	Pre	898.47	16.214	*18.746
			Post	979.35	28.365	

Table t value at a significant level of 0.05 = 2.262

It is clear from Table (3) that there are statistically significant differences between the pre- and post-measurement in the physical variables in favor of the post-measurement at a level of 0.05.

Discussion
It is clear from Table (3) that there are statistically significant differences between the pre-measurement and post-measurement of the research sample in the physical variables at a significant level of 0.05, as the researcher found that the calculated T value is greater than the tabular T value in each of the research measurements, which are (speed 30 meters - running for 12 minutes - lying down from standing), as the T value for each of the speed reached *3.985, aerobic endurance 1.023, and strength endurance 18.746.
The results of this study, confirm that weight training from plyometric training is considered a complex training system that works to increase the individual's physical efficiency, through which the effectiveness of physical fitness elements such as speed, endurance, and strength can be increased. (Abdul Aziz Al-Nimr, Nariman Al-Khatib. 1996).
The researcher also believes that complex training works to increase the activities of physical events through the direct

impact of special loads on the player's level, which in turn works to increase the individual's physical status and through which he can work with high effort and for a long period.

It is clear from Table No. (3) that there are statistically significant differences between the pre-measurement and post-measurement of the research sample in the physical variables at a significant level of 0.05, as the researcher found that the calculated T value is greater than the tabular T value in each of the research measurements, which are (vital capacity - pulse rate - aerobic capacity), as the T value for each of the vital capacity reached *3.985, pulse rate 1.023, aerobic capacity *18.746.

These results confirm Del Monte (1996) that the use of compound exercises for football players increases the efficiency of the functional devices, which in turn affects the physical aspects that help football players to perform the effort for the longest possible period.

The researcher believes that weight training, when combined with any exercise, works to double the activity of functional devices by increasing muscle work and thus works to raise physiological efficiency and that this increase is proportional to the player's effort positively and affects the heart rate and vital capacity as well as the individual's aerobic capacity. It can be said that compound training works to develop such characteristics.

Conclusions and Recommendations

Conclusions

- There are statistically significant differences between the pre- and post-measurement in the physical variables of football players
- There are statistically significant differences between the pre- and post-measurement in the physiological variables of football players
- The compound program has a positive effect on the physical and physiological status of football players

Recommendations

- Work on generalizing such programs to football coaches and players.
- Benefit from the compound training program to improve the individual's physical and physiological status.
- Improve the speed and strength element by working on such programs.
- Conduct studies on compound training to benefit players in developing the elements of physical fitness and the player's physiological characteristics.

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Appendix (1)

Physical Abilities Tests

30-meter sprint

- Purpose of the test : Speed measurement
- Method of implementing the test: The player stands at the starting line and takes the high-ready position for the sprint. When the whistle is heard, the player runs at maximum speed until he crosses the finish line. The coach records the player's sprint time - The player takes three attempts, including a rest period for the player to return to his normal state.
- Recording: The best time of the three attempts for the player is recorded.

12-minute running test

- Purpose of the test :Measurement of aerobic endurance
- Test description: The player stands at the starting line and takes the high-ready position for the sprint. When the whistle is heard, the player runs for 12 minutes, taking into account that breathing matches the body movement.
- Recording: Measurement of the meters that the player ran in 12 minutes. (Mohamed Sobhi Hassanein .1997) [7]

Push up from standing

- Purpose of the test : Measurement of strength endurance
- Performance specifications: In this test, the test goes through the following positions: Standing. Fully bending the knees with the palms of the hands on the ground (the phalanges of the fingers forward and the palms wide apart from the chest). Throw the legs backwards to reach the prone position. Throw the legs forward to reach the standing position (2). The performance is repeated as many times as possible.

Conditions

- The tester must ensure that he reaches the end of each of the positions mentioned in the specifications, taking into account the following: In the standing position, the knees are completely straight and the body is straight and perpendicular to the ground. In the squatting position, the knees are completely bent and the palms are on the ground at chest width. In the prone position, the body is completely straight.
- There must be no stopping during the test. 3

- If the tester finishes the test without reaching the standing position, the attempt that the tester started and did not complete will be cancelled.
- Perform the maximum number of times in 10 seconds. - Recording: The number of correct attempts that the tester made in 10 seconds will be recorded for the tester

Physical Abilities Tests

Measuring heart rate at rest and during exertion:

- The pulse is measured by pressing with two fingers (index and middle) on one of the arteries (temporal - carotid - radial - or directly above the heart).
- Recording: The number of pulses is calculated for (ten seconds) and then the resulting number during the ten seconds is multiplied by (six) so that we can calculate the number of heartbeats per minute

Measuring vital capacity

- The spirometer is used to measure the vital capacity of the lungs,
- Measurement method: The player stands holding the spirometer in his hand and then quickly inhales and exhales 1-2 times, then takes the largest amount of inhaled air he can take into his chest and exhales regularly and continuously until that through the mouth where the nose is closed with a clip.
- Recording: This experiment is performed three times and the best reading is recorded (Abdul Rahman Zaher. 1999)