The effect of reverse-pressure training on developing speed endurance and defensive positions for advanced futsal players

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Abstract. The Reverse-pressure exercises are considered the most important training methods that contribute effectively to the development of the physical levels and skills of the players because of the fast and strong performances they contain which is similar to play in the competition, and which work on developing the endurance of speed and defensive positions significantly on the players, whose positive impact is reflected during the competition, and since defensive skills are the cornerstone of the game of futsal football. The research focused on developing these skills through reverse-pressure exercises that serve defensive skill work. The physical and skill abilities of futsal players, as this research aimed to identify the effect of reverse-pressure training sessions on the development of endurance of speed and defensive positions of futsal applicants. The research imposes a statistically significant effect between the pre and the post tests of the experimental group in endurance speed and defensive positions. For the applicants in the football halls and in favor of the post test, the researcher uses the experimental curriculum that contains two equivalent groups (pretest and post-test) to make it more suitable for the experimental groups. The research concludes that reverse-pressure exercises have a positive effect on endurance of speed and defensive positions for futsal players. Playing with futsal players.

1. Introduction

1.1. Introduction to the research and its importance

One of the games that has received great attention in recent years is the futsal football game, as this game requires a high physical sufficiency to accomplish its quick, strong, and sudden movements. Futsal football game is one of the skill and tactical games which requires a physical, mental and functional accomplishment.

In order to achieve the physical level and the duties of sports training approved to develop achievement in most sports events, the interests of workers in the field of sports training focused on finding new training methods that ensure the continuation of increasing the development process with the least effort and the shortest time, such as the use of modern specialized training methods and among these methods the reverse-pressure training course that related to the type of activity. This training course associates with the type of activity, and the extent of the impact that occurs on the physical and skill abilities, which is a basic and important base in determining the level of performance and achievement, especially in

the futsal football game which cannot dispense with these variables and capabilities. This can only be achieved by developing these variables and capabilities for the players.

Based on the foregoing, the importance of this research is the preparation of reverse-pressure exercises that target the nervous and muscular system, as the researcher believes that these exercises will have different effects on physical and skill efficiency. Thus, the reflection of that effect in In endurance speed and defensive positions in football for halls, so the researchers make this experiment.

1.2. The research problem

Futsal football is one of the games that needs to be integrated with physical elements and skill performance because it is one of the fast games that requires high energy and effort on the part of the players, in addition to the high level of skillful performance of the players, which requires high physical and high skill preparation.

Through the researcher's observation of the performance of the players in the Iraqi Premier League in futsal football matches, and previously the first researcher was a former player in this event, he noticed a varying weakness in the level of performance endurance and and the performance of some basic skills between the players and in building the attack and the speed of moving into the opposing team's goal under the high pressure imposed on it by the players of the opposing team in addition to the lack of focus and the low level of overall performance (physical, skill, tactical and psychological), which appears through the random playing and the large number of non-focused passes together with the slow offensive and defensive transition. This pressure leads to weakness in possession of the ball by the players of the team that possess the ball. This reflects the slow recovery and the emergence of early fatigue. The researchers attribute this weakness to the fact that the coaches practice the commonly applied traditional training methods, as well as they never use the reverse-pressure exercises.

1.3. Research Objectives

1- Preparing reverse-pressure exercises for professional football futsal players.

2- Recognizing the effect of the reverse-pressure exercises in developing performance endurance and some basic skills for applicants in futsal football players.

1.4. The Research hypothesis:

In light of the research objectives, they assume that there is an effect of the using the reverse-pressure exercises in developing performance endurance and some of basic skills for applicants in futsal football players.

1.5. The Research Areas:

1- **The human field:** Players of Al-Kufa futsal football club.

2- **Temporal scope:** For the period from 5/7/2021 until 13/10/2021.

3- **Spatial scope:** The indoor sports hall and the fitness hall in Al-Kufa Sports Club and Al-Karar Specialist Laboratory.

2. Theoretical aspect:

2.1. The reverse-pressure exercises:

Counter-pressing is a developed method that aims to recover the ball after losing it directly because the player who won the ball is an easy goal as he may still try to receive the ball and made an effort to cut it, he may not have had enough time to see the position of his teammates and the opposing team players on the pitch [(1)]

3. Research methodology and field procedures
3.1. The Research Methodology

The experimental method was used in a one-group style with two pre and post tests for its suitability to the nature of the research problem.

3.2. The research community and its sample

The research community was determined by the intentional method of Al-Kufa Club for professional futsal football players for the season 2020-2021, which numbered (12) players of them (10) players were selected for experience, at a rate of (83.33%).

Table (1) shows the experimental design of the research.

Table (1) The experimental design of the research

The set	Pre-tests	Independent variable	Post-test
Experimental	**Endurance bear** **Defense situations**	**Reverse-pressure exercises**	**Endurance bear** **Defense situations**

3.3. The research methods used in the research:
1. Arabic and foreign sources and references.
2. Observation and experimentation.
3. Personal interviews with specialists.
4. Tests and measurements.
5. Results release form.
6. The International Information Network, the Internet.

3.3.1. Equipment and tools used:

[(1)] Yamada, H., Kitamura, Y., Fukui, K., Hayashi, Y. (2016). The bulletin of Biwako seikei sport college, 13: 15−23.

- Arabic and foreign sources and references.
- Personal interviews.
- Questionnaires
- Tests and measurements.
- Legal Futsal Stadium
- Ten Futsal footballs.
- Four colored adhesive tape.
- One tape measure in centimeters.
- 20 signs each of them is of (20 cm) height.
- Three sports stopwatches.
- Three whistles.
- Ten cones.

3.4. Field Procedure of the Research

3.4.1. Description of the physical tests used in the research:

Test: Rebound run 180m from a standing position.

- Purpose of the test: To measure the speed tolerance.

- Tools used: a tape measure, a manual stopwatch, four pillars, the distance between one person and another (15m), a whistle.

- Description of the performance: After giving the start signal (the whistle), the player starts from the first person (the start) to the second person, back to the start, jogging towards the third person, back to the start, then running towards the fourth person and back to the start, thus the player has completed the test.

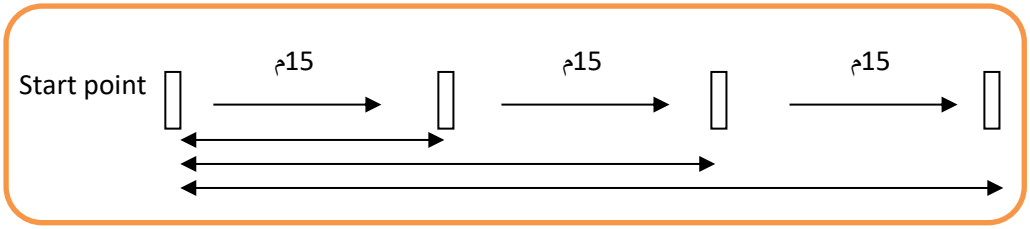

Figure (1) shows the rebound sprint test (180m)

Registration:

- The recorder records the time in seconds to the nearest 1% of a second.
- Each player makes one successful attempt.
- Retry if the player fails to perform (the player falls while rebounding).

3.4.2. Description of the defensive playing position:

Test: Organized reverse pressure on the opposing team's players

The purpose of the situation: to put pressure on the opponent and retrieve the ball after losing it in the least time.

Necessary tools:

- A place to perform the defensive position when the players start the counter pressure.
- Football halls legal
- 2 electronic stopwatches
- Whistle
- Five cameras

Administrative position:

- A recorder that notes and writes down the correctness of performance.
- Timer \ to give the start signal with the timing

Defensive position specifications:

While the players build an organized attack through the correct transition between the players and the exchange of roles between them and the performance of passes, the team will in many cases be exposed to losing the ball and cutting it by the opposing team for several reasons. The players who lost the ball must recover the ball as soon as possible so that the team is not allowed the opponent prepares a promising attack, and this is through the reverse pressure by one of the players who lost the ball, and the pressure from the player closest to the opponent who has the ball, as for the rest of his teammates, their duty is to cover the empty spaces and observe the players of the opposing team and limit their movements and their penetration to the goal as shown in Figure (2)

Position instructions:

- Back pressure can start with one, two or three players.
- Players' movement must not stop during the situation
- Repeats the position 4 times in a row
- Records the total stop time

Evaluation:

The video depiction of the defensive position is shown to the assessors to evaluate the defensive playing position used by the reverse pressure when implemented during the playing position, and grades are given for each position and according to the paragraphs in the special form for evaluating the playing positions, and the number of times the ball is cut from the opposing team players is calculated correctly.

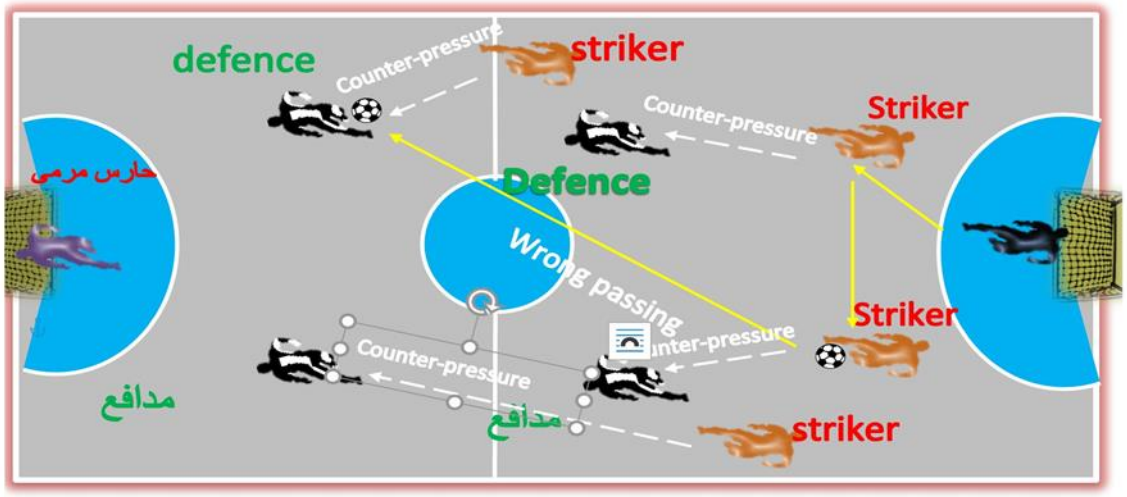

Figure (2) shows the organized reverse defensive position

3.4.3. The Method of calculating evaluation points for defensive and offensive playing positions in futsal[(2)]

1. A- We extract the total time for each stop from the moment the start beep is heard to the end of the stop.

B- We replace the number of repetitions with degrees, and as we mentioned, one correct number appears.

2. A- Calculating the level of evaluation of the playing situation according to its paragraphs, as follows:

$$\frac{\text{first paragraph result} + \text{second paragraph result} + \text{third paragraph result} + \cdots + \text{etc}}{\text{the number of the paragraphs we used}}$$

B- We extract the arithmetic mean of the time for each position:

$$\frac{\text{the result of the first time} + \text{the result of the second time} + \text{the result of the third time} + \cdots + \text{etc}}{\text{the number of the iterations used}}$$

3. The final grade is calculated through the following equation:

$$\text{Final Standing Score} = \frac{\text{Playing Standing Score}}{\text{Standing Time}}.$$

3.4.4. Exploratory Experience:

[(2)] Stephen, Judith and Linds, The game performance assessment, instrument, in human, Journal of the teaching physical education , 1998, p−243.

The researcher conducted the exploratory experiment on Thursday 7/8/2021 at 5 pm on the research sample of the Kufa Futsal Sports Club players, who numbered (2) players out of (12) players, in order to identify the difficulties facing the researcher's work. That is:

1. Identifying the validity of the stadium and the tools and devices used.
2. Organizing the auxiliary work team, and the required instructions.
3. Preparing the medical team and the auxiliary team, as well as identifying the difficulties they may face.

3.4.4.1 Pre-test

Pre-tests were conducted on the research sample, on Friday (15/7/2021), and the researcher tried to write down the conditions associated with the tests such as place and time, and the researcher also wrote down the results of the two laboratories.

3.4.4.2 Applying reverse-pressure exercises to the research sample:

The researcher prepared reverse-pressure exercises, and then began applying the exercises to the research sample on Monday (18/7/2021), and the training period was (8) weeks, with 3 training units per week, and in the special preparation stage, and the ripple in the training load It will be (2:1).

3.4.4.3 Post-tests:

After the end of the period of implementing the training curriculum on the research sample (Kufa club players), the researcher applied the post-tests on Thursday (20/9/2021) and according to the sequence of the pre-tests, taking into account the provision of all the conditions and circumstances in which the tribal tests took place as much as possible.

3.4.5. Statistical means

The researchers used the statistical program (SPSS).

1. Arithmetic mean

2. Standard deviation

3. Correlated T-value

4. Presenting the results, analyzing, and discussing them.

4.1 Presentation and discussion of the results of the pre and post tests

This chapter represents the results that the researchers found by using the pre and post tests for bearing the performance and some of the basic skills. The data that collected in the experiment was analyzed statistically to obtain the results that satisfying the research axioms. The pre and post-tests data is presented by a table due to the tables is a tool to clarify the research by using the scientific facts. Table2 below shows that the Means, Medians, Standard Variations and T-Value that calculated in each test (The pre and the post ones).

Table (2) The Mean, Standard Variations and T-Value of the pre and post tests

Statistic Parameters / Variables	Unit of Measure	Pre-test		Post-test		T-Value	Test significance level
		Mean	S. D.	Mean	S. D.		
Endurance speed	**Second**	**37.19**	**1.19**	**35.31**	**1.3**	**11.18**	**0.001**
Defense situation	**number**	**0.705**	**0.167**	**1.287**	**0.045**	**6.31**	**0.008**

4.2 Discussing the pre and post results of the performance endurance tests and some basic skills in futsal for the research game

The foregoing results that appeared in Table (2) found that there were significant differences in the speed endurance test and in favor of the post test, and the researcher likely the reason for this difference to the exercises used and prepared according to the reverse pressure method, while they were applied at specific and variable times in terms of exercises, they are similar to a high degree of playing positions during the competition and similar with the new amendments in the law of the game of halls, which are characterized by high speed and diversification from defense to attack, in addition to the fact that organized and continuous training gives positive results and effects in developing the goal of training, and this was confirmed by (Bastawisi Ahmed) "the need to develop The characteristic of endurance since the beginning of the years in which training is performed for young people in various team games, including football, as it is a physical, tactical and physiological ability that needs a long time to develop in order to delay the phenomenon of fatigue that negatively affects the form of motor performance and technical level[(3)].

The results presented in Table (2) showed that the skill tests of defensive playing positions showed that there were significant differences between the tribal and remote tests in favor of the post test. The competitive level, which sought to provide sufficient opportunities to develop them." A good defensive skill level contributes to reducing errors and losing the player's ability to perform this skill on the one hand, and on the other hand, the stability of a good defensive level throughout the duration of the match is related to a good physical condition, the same if the physical construction is not sufficient The player's starting ability and endurance throughout the duration of the match decline during the match with the accompanying weakness in technical performance and as a result of weakness in physical fitness and skill, it increases and rises with the progression of the match time, and the more fatigue the player has, the lower the level of his defensive skills, especially those that need to

[(3)] Bastawisi Ahmed: Foundations and Theories of Sports Training, Cairo, Arab Thought House, 1999.

Neuromuscular compatibility in performance"[4], and this is what the researcher worked on by linking the physical side to the skill side.

5. Conclusions and recommendations

5.1 Conclusions

1- The reverse-pressure exercises contributed to the development of the performance endurance.
2- The development of the speed endurance was positively reflected on the accuracy of the defense skills (defense situation) in futsal.

5.2 Recommendations

1- The researcher recommends adopting high-pressure exercises prepared by the researcher as basic data for training futsal players.
2- The researcher recommends coaches of national and Olympic clubs and teams to use high-pressure exercises in their training curricula because of their positive impact on the players.
3- The researcher recommends coaches of clubs and national teams to use reverse pressure exercises for their positive impact on developing endurance for futsal players.

Referance

1. Bastawisi Ahmed: Foundations and Theories of Sports Training, Cairo, Arab Thought House, 1999.
2. Mutasim Ghatouk: Modern trends in football training, Syria, the Executive Office of the General Sports Federation, 1995.
3. Diaa Jaber Muhammad: The effect of exercise during the two phases of the physical biorhythm cycle in developing and teaching some physical traits and basic skills among soccer players, PhD thesis, Babylon University, College of Physical Education, 2006.
4. Imad Zubair Ahmed: Technique and Tactics in Football Five.1st Edition. Baghdad: Sinbad Printing Company, 2005.
5. Muwaffaq Majeed Al-Mawla: Modern Methods in Football Training, 1st Edition, Amman, Dar Al-Fikr for Printing and Publishing, 2000.
6. Younis Allawi Radi: The effect of EPOR gene forms and performance tolerance on some physiological variables and physical abilities of football players, Master's Thesis, Al-Qadisiyah University - College of Physical Education and Sports Sciences.
7. Stephen, Judith and Linds, The game performance assessment, instrument, in human, Journal of the teaching physical education, 1998

[4] Mutasim Ghatouk: Modern trends in football training, Syria, the Executive Office of the General Sports Federation, 1995.