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The impact of a training program for the injury of the connective muscle in the improvement of some of the capabilities of compatibility (the ability to balance) .Field study of some clubs in the state of Bordj Bou Arreridj u15

أثر برنامج تدريبي تأهيلي لإصابة العضلة الضامة في تحسين بعض القدرات التوافقية (القدرة على التوازن)" دراسة ميدانية لبعض اندية ولاية برج بوعريريج

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Abstract : The most common muscle injury in the athlete is the pubalgia, which affects the adductor muscle, which is located inside the thigh. It is called the adductor muscle because it brings the thigh back inside.The adductor muscle is damaged by pressure on the muscle nerve, causing weakness and inflammation of the sac of the femoral muscle resulting from repeated muscle irritation during exercise, and bad warm-up. all this inflicts on players' performance and exposes them to injury.

The aim of the study is to find a group of low-intensity exercises as part of a qualifying sports program.The researcher focused on the proposed rehabilitation program to improve the player's compatibility abilities. of football. The community of the study is in Bordj Bou Arreridj, CABBA, star of Bordj, football clubs in Bordj Bou Arreridj U15

Keywords: Connective muscle. Harmonic capacity. Rehabilitation program

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الملخص : تعد إصابة العضلة الضامة الأكثر شيوعا عند الرياضيين ،وتصاب العضلة الضامة بالشد والتمزق الناتج عن الضغط على العصب المغذي للعضلة ،ما يتسبب في حدوث ضعف فضلا عن إلتهاب الكيس الزلالي لعضلات الفخذ ويحدث نتيجة التهييج المتكرر للعضلة القابضة أثناء أداء أنشطة بدنية بشدة معتبرة .كما ان عدم الاهتمام بتمرينات الإحماء والإطالة وتمرينات التوافق العضلي العصبي يؤثر على أداء اللاعبين ويعرضهم للإصابة.وتهدف الدراسة إلى إيجاد أحسن الطرق في تأهيل المصاب بإصابة العضلة الضامة في كرة القدم وركز الباحث من خلال البرنامج التأهيلي المقترح على تحسين القدرات التوافقية للاعب وبالأخص القدرة على التوازن والتي تعتبر صفة أساسية تساهم في تسهيل أداء معظم المهارات المطلوبة من اللاعب في كرة القدم.

ويتمثل مجتمع الدراسة في كل من أهلي برج بوعريريج، إتحاد البرج، نجم البرج، ترجي البرج، أولمبي بلدية مجانة. وهي أندية من ولاية برج بوعريريج لكرة القدم والفئة المستهدفة هي u15-

- **الكلمات المفتاحية :** - **العضلة الضامة .القدرات التوافقية. برنامج تأهيلي**

introduction:

- Sports training has been a major concern since ancient times, and natural and physical resources have been used to reduce pain, improve function and improve public health. Despite this effort, the nature of sporting participation shows that injury is inevitable. Fortunately, few injuries that occur in sports activities threaten life The majority of injuries can be rehabilitated and therapeutic exercises and accompanying methods play an important and key role as a physiotherapy department in the completion of the treatment of athletes after the injury in particular and also in the development of therapeutic program for the injured Sound scientific foundations (Osama Riad, 1999, p. 4).

- **Problematic research**: All kinds of physical exercise cause stress to the player that may be for the whole body or part of it and this in itself and to a certain degree useful for the player as the physical effort organized. It is the gradual process that increases the efficiency of the various body systems to enable them to perform their functions in the fullest during the violent sports effort.

- On the other hand, the sudden strain of a certain part of the body, which may be more than the strength of the probability of its tissues leads to injury, and the thin line that separates the sports effort organized on the basis of scientific physiological on the one hand and the sudden stress that causes injury from the other side is not yet well defined It cannot be clearly defined so the trainer must be familiar with the physiological foundations of sports to prevent many injuries (Osama Riyadh, Hassan Emam, 1999, p. 9)

- The training and rehabilitation of the athletes' injuries were given special attention by the establishment of sports medicine treatment units equipped with all the capabilities in order to raise the degree of fitness and functional and provide a safety and security factor for the athletes and care for the injured in order to return quickly to exercise their sports activities efficiently and in the least time possible. (Raphael, 1984, p. 78).

- The connective muscle is the most common among athletes. The connective muscle is located on the inside of the groin. It is called the connective muscle because it includes the groin inward. It consists of five muscles connected from one end to the pelvic bone from the inside, while the other is connected to the femur. The connective muscle is tensed and torn due to pressure on the nerve supplying the muscle, causing weakness as well as inflammation of the synovial cyst of the thigh muscles and occurs as a result of repeated irritations of the flexor muscle during the performance of activities. On the other hand, the researcher finds that the lack of familiarity with the coaches and players in the fields of sports injuries and sports medicine, and the lack of doctors and nurses physiotherapists, which made the player pay a high price, by involving players sucking Abin given that it is a mild injury without displaying the players to specialists in order to diagnose the condition and treatment and rehabilitation, and therefore find that the injury is constantly renewed. from our findings, we have the following questions:

General question: Does the proposed training program have the effect of developing some harmonic abilities (the ability to balance) among football players u15 Bordj Bou Arreridj?

Partial Questions:

- Are there statistically significant differences in the pretest balance between the experimental and control group?
- Are there statistically significant differences in the ability of the balance between pretest and posttest in the experimental group?

-Are there statistically significant differences in the equilibrium capacity in the post-test between the experimental and control group?

- **Key words in the study:**

- **Training program**: means a set of procedures planned and based on scientific and that are implemented according to specific conditions and directed to achieve a goal or purpose in a field. (The Order of Allah Ahmad Al-Busati, 198, p. 2)

- **rehabilitation program:** is a treatment units seeking to restore the full function of the injured, and depends mainly on the identification of the causes of injury and correct evaluation and methods of treatment, and rehabilitation of the average casualty so that he can perform the necessary functions and burdens without disruption.

-**Rehabilitation Training Program**: This is a set of procedures resulting from a collective operation or an integrated therapeutic team of physicians, physiotherapists and sports therapists with the aim of restoring the abilities and capabilities of the individual in order to rejoin the team (Ali Jalaluddin, 2005, p. 163).

There is a difference between harmonic capabilities and susceptibility, since susceptibility is related to actual semi-automatic coherent movements. Harmonic capabilities represent the general prerequisite for each kinetic shot. (weineck, 1997, p 293)

- Harmonic Patterns:
- There are two types of harmonic capabilities:
- **General harmonic abilities**: It is the result of kinetic learning, which is diverse in the sense of being found in various mathematical activities, manifested in many areas of daily and mathematical life.
- -**Special harmonic abilities:** Otherwise, special harmonic abilities develop within the framework of the sporting activity concerned, as indicated by Oslin (1952, p164). Formulas for connections and means are preferred and occupy a key position in the movement (Jürgen weineck, 1993, P293).
- Components of interoperability:
- Compatibility is a very complex physical attribute, related to several components, and varies from one individual to another, and from one exercise to another (Meinel et Schnabel, 1987). There are seven components of kinetic compatibility:
- -ability to link the motor: is the ability of the individual to coordinate the movements of various parts of the body in order to achieve a comprehensive movement.
- -Ability to analyze: The ability to accomplish a movement very precisely with the economy of the movement, allowing the movement to adapt to the situation.
- -ability to balance: the possibility of maintaining balance during stability or movement, this ability is acquired in the stage of development and disappear with age in the absence of training.

- -Ability to direct: The ability to identify and change the movements of the body and other things in space and time (ie the place and time specified).
- Rhythmic ability is the ability to reproduce, increase or decrease the rhythm of motion.

-ability to re-adapt: the ability of the individual to adapt the kinetic snapshot performed in a new position. (Kuntz Justine, 2013, p15-16)

- Types of motor compatibility:
- **General compatibility:** It is the ability of the learner or player to respond to various motor skills regardless of the characteristics of the game and is a necessity for the exercise of activity and represents the first basis for the development of special compatibility.

- **Special compatibility**: It is the ability of the learner or player to respond to the characteristics of motor skills of the activity practiced, which reflects the ability of the player to perform effectively during training and competitions. (Hara, i 2, 1990, p. 296)

-**Neuromuscular compatibility**:Is the ability of the nervous system to give more than one command at the same time or with very little time difference. Singer defines him as the ability of an individual to control the work of different parts of the body involved in the performance of a particular motor duty and to link these parts to a smooth movement with an effective effort to accomplish that motor duty and is divided into a general consensus and a special consensus (Sari Ahmed Hamdan, i 1, 2001) Harmonization plays an essential role in various human movements. Therefore, the need for harmony is important in the performance of mathematical skills and we find accurate motor absorption by careful information of the sense of muscular sense and also information of other senses, including the sense of vision and therefore Increased and improved sense.

. **Concept of balance:**

- Balancing is one of the complex functions of the central nervous system in its response, and to maintain balance there are reactions from within the body that affect and are affected by each other, involving many sensory and motor systems (foued saadsaoud 2010).
- Known as "Larson" and "YKM" the ability of the individual to control organs from the neuromuscular side and known as "Korton" as the ability of the individual to control the physiological and anatomical capabilities that regulate the impact on the balance with the ability to sense the place, whether with or without sight, muscular and nervous .

-connective muscles: The connective muscle is located on the inside of the thigh, and is called the connective muscle because it includes the thigh to the inside, where it consists of five muscles connected from one end of the pelvic bone from the inside, while on the other hand the muscle is connected to the femur.

- The connective muscle is tensed and torn due to pressure on the nerve supplying the muscle, causing weakness as well as inflammation of the synovial cyst of the thigh muscles and occurs as a result of repeated irritation of the flexor muscle during the performance of activities.
- **Methodological Methods**:
- **-Survey**: Our study included a number of steps:
- **Identify and set the program**. Contacting club management to assist and facilitate the testing process in appropriate conditions and we have received considerable assistance and understanding.
- Apply the software to a group of players.

- Arrange documents and lists of players to take the test legally within the stadium 20 August 1955 Bordj Bou Arreridj.
- Psychometric characteristics of the instrument:
- Stability of the test. Stability coefficient. Alfacrombach.

The researcher found the stability coefficient of the balance test using the method of applying and re-applying the test: Alfacrombach = 0.58

Coefficient of Honesty: To obtain the validity of the test we calculated the coefficient of honesty.

The result obtained was as follows: Validity of the balance test = 0.76. It is concluded that the test has a high degree of honesty.

- **Objective testing:** Since we have relied on standard tools in measuring the balance test, this test does not require arbitrators to record the results, and therefore the objectivity of the test is equal to one.

-**Approach in the study:**The study was based on the experimental method and this choice did not occur arbitrarily but rather an inevitable result of the nature of the topic and the most appropriate to solve the problem of our topic, ie, the experimental method best approaches to scientific research does not rely mainly on scientific experience, which provides a practical opportunity to learn the facts and the laws through these experiments .

Study Population and Sample: The process of selecting the study sample is one of the necessary steps for the purpose of completing the scientific work. The study population is represented by some of the clubs of the Bordj Bou Arreridj football federation. Ahli Bordj Bou Arreridj, Union Bordj, Star Bordj, Esperance Bordj, Olympian Municipal Majana.

The research sample is an occasional sample consisting of 10 players from 5 clubs of the governorate of Bordj Bou Arreridj.

-Demo Group: Includes 5 players. - Control group: Includes 5 players.

- Homogeneity of research groups: In order to return the differences to the experimental factor, the totals must be completely equal in all circumstances and changes, and the experimenter must at least try to form equal groups in relation to the variables related to the research.

Arithmetic mean	Arithmetic mean	experimental group		The control group		
		Standard deviation	Significance level	Standard deviation	Significance level	
Not relevant	**0.34**	**0.91**	**11.5**	**0.87**	**11.1**	Age
Not relevant	**0.45**	**1.63**	**39**	**2.83**	**39.6**	Weight
Not relevant	**0.4**	**0.12**	**1.37**	**0.03**	**1.35**	Length

fields of study: - **Spatial Field:** The test was carried out on the study sample at the stadium of August 20, 1955 Bordj Bou Arreridj. Bouzidi Lakhdar Stadium and Municipal Court are free.

- **The human field:** The human field represents 10 players from some clubs of Bordj Bou Arreridj (Time domain: the period during which the research is conducted and the application of tests, where the time domain in which we conducted this study is divided into two parts:

Theoretical side: After determining the subject of the study in the research began work in this study from the theoretical side in the beginning of September until the month of January.

Practical side: The tests were as follows: Pre-test: 20 September 2019

- Post-test: October 12, 2019

- **Study tools**: The study relied on the use of the balance test (Flamengo), which was conducted on both experimental and control groups in the form of pre- and post-training.

the test: This test was as follows: Test name: Flamingo

Purpose of the test: To assess the athlete's ability to maintain balance during unilateral support. Tools used in the test: plate with dimensions (3 cm width and 15 cm length), timer, cones.

Test description: The test depends on the athlete's position in a monopole on a plate with dimensions (3 cm width and 15 cm length), his free leg should be pulled with his hand stretched out on the side. Count the number of drops per minute, the timer stops at each fall. It is forbidden for the athlete to hold his free leg with his other hand, because the balance position becomes easy. **Recording**: The number of falls per minute is calculated.

- Level	- value
- Excellent	- 1-0fall
- very good	- 2-1falls
- good	- 3-2 falls
- average	- 4-3 falls
- below average	- 5 -4falls
- weak	- drops or more6

Procedures for field application of the tool:Pedagogical means:

The tests are measured by the same methods and devices with both experimental and control groups in addition to the reconnaissance sample. Balance test instrument (plate with dimensions of 3 cm width and 15 cm length). Chronometer . Data registration form. Unit of measurement of length.

The proposed training program: The researcher designed a qualifying training program according to the characteristics and abilities of football players class u15, after reviewing the scientific references related to the subject of the study and the studies related to the topic and then formulate in order to develop the ability to balance and develop from some special experiences in the field of training.

Steps of preparing the training program: Then split this program after reviewing a large number of competent references in the qualifying training program to get rid of muscle pain close to football players

Program Time Plan: The program was divided into 9 training modules, each lasting from 60 to 90 minutes according to the objective of the training module.

Statistical Methods: In our calculation of psychometric properties, we have adopted the statistical packages program.

Presentation of the study results: Interpretation of the results in the light of the study hypotheses:

First hypothesis The first sub-hypothesis states: "There are no differences between the experimental and control groups in the test of equilibrium for pretest measurement." After statistical treatment, the following conclusion was reached:

The table shows the difference between the two groups (T, Z) in the pre-measurement in the balance ability test									
Resolution	Significance Level	Degree "T"	Degree of Freedom	Deviation	Arithmetic Standard	Sample Size	Significance Level	Homogeneity (F) Levin	Equilibrium Ability Test
Non-D	.9890	0.011	18	1.475	6.20	10	0.924	0.009	Experimental
				1.686	6.20	10			Control

From the above table, the value of Levin homogeneity test (F) was 0.009, which is not statistically significant at the alpha level (0.05). This requires the use of statistical significance test (T) for two homogeneous independent samples.

Given the arithmetic averages for the study sample in the test of (ability to balance), which reached in the experimental group (6.20) with a deviation of 1.47 and in the control group (6.20) with a deviation of 1.68, it can be said that there are slight differences between them, but the value of the test The differences (Ttest) which reached (0.01) were not statistically significant at the level of α (0.05 = α), and therefore accept the zero hypothesis that denies the existence of the differences, and from the third research hypothesis that "there are no differences between the experimental and control groups in Test the equilibrium capacity for pre-measurement, "and make sure this ratio The result is reached at 95% with the possibility of falling into error by 5%.

Second hypothesis The second sub-hypothesis states that "there are differences between the pre- and post-measurements for the experimental group in the equilibrium test".

The table shows the difference between the study sample in the pre and post measurements in the test of balance ability of the experimental group

Resolution	Significance Level	Degree "T"	Degree of Freedom	Deviation	Arithmetic Standard	Significance Level	Sample Size	Equilibrium Ability Test
significant (0.01)	0.010	3.250	9	1.475	6.20	0.924	5	pre measurements
				5.160	4.40			post measurements

From the above table, looking at the mean and standard deviations of the members of the experimental group in the pre and post measurements in the test of (ability to balance) we note that there is a difference between them where the mean in the pre-measurement was 6.20 with a standard deviation of 1.47, and for the post-measure the mean is calculated at 4.40 With a standard deviation of 0.51. Through these differences we can say that there are differences in the averages of pre and post measurements for the experimental group in the test of equilibrium capacity and this is confirmed by the values of (T test), which amounted to

(3.25) where a function came at the level of significance alpha 0.01, which leads us to say that The second hypothesis that "there are differences between the pre- and post-measurements for the experimental group in the test of equilibrium" was rejected and the validation of this result is 99% with 1% chance of error .

Third hypothesis: The third sub-hypothesis states: "There are differences between the experimental and control groups in the test of equilibrium in relation to the telemetry. After the statistical treatment, the following result was reached:

Table (09) shows the difference between the two groups (T, Z) in the telemetry in the balance ability test

Resolution	Significance Level	Degree "T"	Degree of Freedom	Deviation	Arithmetic Standard	Sample Size	Homogeneity (F) Levin	Significance Level	Equilibrium Ability Test
Significant 0.01	0.03	3.81	10.90	5.16	4.4	5	0.07	9. 24	experimental
				15.77	6.4	5			Control

From the table above, we notice that the value of Levin homogeneity test (F) was (9.24), a statistically significant value at the level of alpha (0.01). This requires the use of statistical significance test (T) for two independent heterogeneous samples.

Given the arithmetic averages for the study sample in the test of (ability to balance), which reached in the experimental group (4.40) with a deviation of 0.51 and in the control group (6.40) with a deviation of 1.57, it can be said that there are clear differences between them, and this is confirmed by the value T-test, which reached (3.18), was a statistically significant function at the level of α (0.01). Therefore, the zero hypothesis which denies the existence of the differences was rejected, and the fourth research hypothesis that "there are differences between the two groups" was accepted. The experimental and control test in the ability to

balance relative to telemetry "also have these differences It was in favor of the control group, and the probability of this finding is 99% with a 1% chance of error.

Conclusions: In the light of the results of the study, the following conclusions were reached:

- The training program had a positive effect on some harmonic abilities.
- There is an improvement in the level of basic skills resulting from the effectiveness of the program applied
- The program is linked to the improvement of interoperability due to the effective contribution we have seen in improving the basic skills in football for the injured player.
- There is an evolution in equilibrium for the experimental group.

Suggestions:

- - Applying the qualifying training program in clubs, especially class u15.
- - Attention to small groups in terms of health to avoid aggravation of injuries in old age.
- - Attention to training in interoperability as being essential for learning skills at a young age.
- - Establishment of rehabilitation centers for young people.

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