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The use of balance exercises and some physiotherapy methods to rehabilitate an ankle sprain for football players in Libya (Almarg)

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Introduction

The general concept of balance and its importance in football is the ability to maintain the stability of the body when performing positions such as standing on one foot, or when performing the movements of muscular coordination of the boy, and there are many sports activities that depend largely on balance such as gymnastics and artistic exercises, The stability of balance is also important in sports that are characterized by physical contact such as: football, judo and wrestling.[1]

Equilibrium is divided into two types: static equilibrium, which is the ability of the individual to remain in a fixed position when taking certain positions without shaking or falling so that the center of gravity of the body is above the base of the fulcrum, and kinetic equilibrium is the ability to maintain the balance of the body during its movement or one of its parts points to another.[2]

Static equilibrium is measured by means of the Bondar Jovsky test, and the aim of the test is to measure the ability of the sample to be in static equilibrium, and one of the advantages of the test is easy to perform and apply and does not require expensive devices and is considered an excellent training for the development of static equilibrium For the longest possible period and the test is applied where the sample is in a standing position from the stability of the middle with the support of the right foot on the left knee, and stability by keeping the body without any movement taking place, noting that the direction of the right knee of the right leg is outward, and the recording is according to the time that the individual keeps his body in this situation, and also the measurement of kinetic balance by testing the lines drawn to measure kinetic balance, the objective of the test is to measure the ability of the sample on kinetic equilibrium. The advantages of the test are easy to perform and apply and do not require expensive tools.[3]

Rehabilitation is defined as restoring the full function of the injured, and it depends mainly on identifying the causes of the injury, correct evaluation of them, and methods of treating them using correct methods. The normal injured person is rehabilitated so that he can perform the necessary functions and burdens and perform normal functional performance only, while the sports injured, in addition, needs to return to his physical efficiency and athletic level. The height that it was before the injury occurred without disturbance in the least possible time, using well-known physiotherapy methods that are appropriate to the type and severity of the injury.[4]

Ankle sprains are one of the most common injuries, not only among athletes, but among a large group of members of society. For athletes, attention should be paid to ankle injuries, even if they are simple, because the possibilities of recurring them are great because sports activities often include running and jumping, and recurring ankle sprains are called sprained ankles. Chronic.[5]

He believes that sports injuries are one of the important issues that concern athletes and sports practitioners from the danger that is inherent in some games in which there is direct contact with the opponent or as a result of insufficient awareness of the correct practice of sports activities. Those in charge of training sports activities are to find the best means to prevent and reduce people's exposure to sports injuries, and in the event of an injury, try to identify the proper scientific method in aid and rehabilitation of the injury and return the player to practice as quickly as possible.[6]

Football is one of the games that has a special character and requires the player to make special preparations. It is a team game that depends on direct contact with the opponent and offensive and defensive play and puts a physical and nervous burden on the player, which exposes him to injury. Conducting research and studies on this phenomenon.[7]

Research problem

The researcher, through his practice of sports as a football player in the former Al-Morouj Club and the Salfium Club now, and a collaborator in the rehabilitation and physiotherapy Center in Al-Marj, has noticed that many athletes are exposed to an ankle sprain, which prompted the researcher to conduct this research on some clubs and centers to find out the number of people with sprained joints. The ankles, their ages, the exercises and devices used in the treatment, the duration of the treatment schedule, and knowledge of the extent of interest in balance exercises, especially warm-up, lengthening and neuromuscular coordination exercises.

On the other hand, the researcher found that the lack of interest of some physiotherapists in the clubs and centers of the meadow in the organized treatment stages and the lack of focus on special and appropriate therapeutic exercises to improve balance , which made the player pay dearly, by involving players with sprained ankle since it is a mild injury without presenting the players to the doctors And specialists in order to diagnose the condition, treatment , and then

rehabilitation, and thus we find that the injury is constantly renewed, and that the ankle sprain is one of the common sports injuries among football players in the world and is present in our country in abundance due to the poor ground.

Through previous studies and research reviewed by the researcher, it was found that it recommends the necessity of incorporating balance exercises into the therapeutic program for the ankle, in addition to stretching and flexibility exercises.

According to many previous studies, rehabilitation programs depend on muscular strength and flexibility, which prompted the researcher to put the element of balance using free exercises and tools in addition to muscular strength and flexibility exercises in the rehabilitation program, which can contribute to positive results in helping to the maximum amount of rehabilitation and treatment. And the patient's return to his normal condition and to the stadiums in the shortest possible period.

Research aims

1) To identify the effect of using balance exercises, ultrasound and electrical stimulation on improving the balance of the ankle joint.
2) To identify the effect of using balance exercises, ultrasound and electrical stimulation on the range of motion of the ankle joint.
3) Identifying the effect of using balance exercises, ultrasound and electrical stimulation on the flexor and extensor muscle strength of the foot and leg muscles.

Research hypotheses

1) There are statistically significant differences between the pre and post measurements to improve the balance in favor of the post measurement.
2) There are statistically significant differences between the pre and post measurements of motor range in favor of the post measurement.
3) There are statistically significant differences between the pre and post measurements of the flexor and extensor muscles of the foot and leg muscles in favor of the post measurement.

Research methodology

The experimental method has been used due to its suitability to the nature of this research.

Research community

The research community consisted of athletes with an ankle sprain in Al-Morouj and Silphium clubs in Al-Marg city.

The research sample

The research was chosen in a deliberate way from the middle-class soccer players with sprained ankle of the first degree, and the search was conducted on (12) players from the middle class registered in the Benghazi Football Sub-Union from the clubs (Al-Morouj - Al-Salfium).

Conditions for selecting a research sample

1) That the ankle sprain injury is of the simple type (first degree)
2) To be one of the middle-class football players.
3) That the injured player does not suffer from any other injuries.
4) The injured player's consent to conduct research and participate in the proposed treatment program.

Data collection methods

1) Questionnaire: In which the proposed program was presented to physiotherapy experts.
2) Sources, references, books and the Internet.
3) Previous studies.
4) Survey studies.
5) Tools, devices and measurements used.

Hardware

1) US. Ultrasound device
2) B - Ea. electric alarm device
3) A restameter for measuring length.
4) d- A calibrated medical scale for measuring weight.
5) C - A device for measuring range of motion, a genumeter.
6) H- Forms for recording measurements, test results, muscular strength, range of motion, and balance
7) G - a device for measuring muscle strength, a dynamometer.

Conclusion

1. The therapeutic program using balance exercises, ultrasound and electrical stimulation achieved a statistically significant effect in favor of dimensional measurement in developing and improving the research variables, which are:

Balance in my cases (fixed and kinetic). The range of motion in my cases (extension and flexion) of the ankle joint.

Muscular strength of the muscles working on the ankle joint (flexors and extensors) of the joint.

2. The therapeutic program using balance exercises, ultrasound and electrical stimulation achieved improvement rates in favor of dimensional measurement in developing and improving the research variables, which are:
   a. Fixed twitching improved by 34%
   b. Balance movement improved by 31%
   c. Numerator kinematic range, an improvement rate of 36%
   d. Flexural kinematic range, an improvement rate of 46%
   e. The holding force of the joint muscles improved by 4%.
   f. The extensor strength of the joint muscles improved by 5%.
3. The level achieved by the research sample in kinetic equilibrium in the 3- dimensional measurement was 66.67 degrees, which falls under the level (good) compared to the levels of the international kinetic equilibrium standard degrees.
4. The therapeutic program using balance exercises, ultrasound and electrical stimulation achieved a high degree of recovery and improvement in the functional state of the joint at the end of the specified period of time for the program, through the improvement ratios between the two measurements in the research variables.

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Recommendations

1) Adoption of the rehabilitation program proposed by the researchers using balance exercises and physiotherapy methods for people with external ankle sprains in physiotherapy centers and clubs.
2) Developing the proposed program (therapeutic exercises and physiotherapy methods) according to the development of devices and tools that are used in the process of rehabilitation and physiotherapy for people with external ankle sprain.
3) Emphasis on the need to include balance exercises in the rehabilitation programs for rehabilitation and physical therapy.
4) Conducting more research dealing with some variables that the current research did not address, such as sprained external ankle joint, as well as using balance in rehabilitation and treatment.
5) Implementation of the proposed program of therapeutic exercises to improve the functioning of the ankle joint.
6) Implementation of the proposed program using balance exercises to improve the strength of the muscles working on the ankle joint.
7) Paying attention to performing balance exercises to improve the positive and negative range of motion
8) It is possible to apply balance exercises in all ankle injuries
9) Encouraging researchers to conduct other studies related to ankle sprain injuries, which were not covered by the researcher.

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Conflicts of interest

The authors have no conflicts of interest to declare.

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