

THE EFFECT OF USING THERAPEUTIC PHYSICAL EXERCISES ACCOMPANYING PHYSICAL THERAPY IN THE REHABILITATION OF LUMBAR DISC HERNIATION FOR FOOTBALL PLAYERS AGED (25-25)

Imad Kadhim Khlaif *, Talib Faisal Shnawa

Faculty of Physical Education and Sports Sciences, University of Baghdad, Iraq Baghdad, Iraq

Abstract

The purpose of this paper is to knowing the effect of a program of therapeutic physical exercises accompanying physical therapy in the rehabilitation of herniated lumbar discs, where this study was conducted on (7) players suffering from lumbar lower back pain, they were transferred to the Medical Rehabilitation and Arthritis Center / Baghdad - (Channel Al-sader), according to a special transfer from Physician. In addition, they agreed to participate in this study. The application of the program took a period of one month, divided into (12) rehabilitation units, with (3) sessions per week, where the duration of the session ranged from an hour to an hour and a half. The following tests were used (Spine flexibility test, back muscular strength test, pain degree test) The researcher then used the statistical program (SPSS) to process the data, and the results showed the presence of statistically significant differences in the study variables in favor of dimensional measurements after four weeks, The researchers concluded that the therapeutic rehabilitation program has a positive and statistically significant effect on players with herniated lumbar discs, in all study variables, and the researcher recommended the following:-Encouraging the use of therapeutic physical exercises and physiotherapy in hospitals and physiotherapy centers, as it showed its efficiency in improving the player's physical and kinetic abilities encouraging players to perform home exercises because of its impact on patients with lumbar disc herniation.

Keywords: Herniated disc lumbar. Sports medicine. Football

Introduction

Every educational system in the world reflects collective aspirations and always seeks to find formulas to ensure the upbringing of its generations, a social formation that makes them citizens capable of carrying out their social and cultural roles fully. In addition, the big one. Some practice it for the purpose of competition and achieving higher levels of sport, while others practice it as a recreational aspect, while others practice it for the sake of health and maintaining a healthy body free of diseases. And that chronic lower back pain is today considered one of the diseases of the times, and most of those who suffer from it do not know the main and true cause of its occurrence, and the role of the spine and lumbar vertebrae, in particular, has a great role in carrying the body as well as weights by supporting its neuromuscular system as well as protecting it from injuries during the movement. Lower back pain is one of the most common disorders affecting the locomotor system and is considered the most prevalent in the modern era. It still poses a real health challenge in terms of prevention and treatment, and it occupies the third degree in terms of the high cost of treatment (Mooney, 2000) after cardiovascular disease and cancer.

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*Corresponding Author: Imad Kadhim Khlaif, Faculty of Physical Education and Sports Sciences, University of Baghdad, Iraq

Correo-e: khlaif0904@cope.uobaghdad.edu.iq

The spine is the only longitudinal axis of the body that bears the weight of the entire trunk, and its lumbar vertebrae are connected with the pelvis and move it with the sacral vertebrae (Smith, 1998). Accordingly, any imbalance that affects the body axis - functionally or anatomically - will negatively affect the functional level of the trunk and the movement of the body. In general, and consequently, it may limit psychological, economic and social efficiency, especially when pain appears, which greatly affects the daily life activities of the individual (Yazji, 2003) and the quality of life he lives (Majli et al. 2007).

The most frequent back pain is in the lumbar region between the fourth and fifth lumbar vertebrae L5, L4 - and then between the fifth lumbar and first sacral L5, S1 and often these patients correspond to a group of severe neurological disorders represented by disorder according to and disturbance in the level of The reflex reaction and a decrease in the level of muscle strength (Hasletter, 2002), (Al-Tarifi, 1996), not to mention the severe pain resulting from the pressure of the herniated disc on the spinal cord or one of the nerves, and the decrease in the motor ability of the lower back, which makes this patient a major cause of changing the nature of the patient's psychological life Social, economic and familial, especially when it causes any degree of partial or complete disability (Majli et al., 2007) (Al-Mansi, 2006).

Most cases of herniated discs are between twenty and forty years of age, where most injuries occur due to improper lifting of heavyweights (Hakkinen et al. 2003) (Haslett al 2002) or in former athletes in football and athletics (Hangai et al. 2007)

Scientific research has proven that more than (90%) of those with herniated discs can recover without resorting to any surgical procedure, by resorting to various means of physical therapy such as water, heat, massage, and rehabilitative exercises mainly as it works to relieve pain and reduce the level of pain and disability (Mooney, 2006), (Al-Mansi, 2006), (Wael, 1997), (Zahran, 1982).

(Leaev, 1996), and it is considered as one of the effective, low-cost, easy-to-apply, and characterized by a low probability of side effects (Majli et al., 2007), in addition to being the basic and most important method of injury prevention and treatment as well, on the other hand, scientific research has proven Modern physical activities are the best methods for treating the pain of herniated disc, so elaborate kinetic activities - therapeutic exercises - were

used with the aim of raising the level of strength and flexibility of the lower back muscles, as there were numerous studies that dealt with the impact of various physical and rehabilitation programs, including a study (Haslett et al, 2006), (Al-Mansi, 2006), (Wael, 1997), (Zahran, 1982) As a result of the clear interest in therapeutic physical exercises by scientists and researchers, a problem has emerged that has imposed itself on the scientific research scene, which is the extent to which these exercises are effective in treating lumbar disc herniation or relieving herniated discs. The nation, as well as its preference and which one is more effective to reduce its effects, and of great importance if combined with physical therapy, which has become important in recent years in treating bone, muscle and joint pain, It is a treatment that uses natural sources of (heat, cold, hot masks, infrared rays, ultrasound, hot mineral water, electric currents, massage of all kinds ... etc.)

From this point of view came the importance and role of rehabilitation therapy, especially therapeutic physical exercises, and its importance in the rehabilitation and treatment of players with herniated lumbar discs and their gradual return to their normal position and within a short period of time and this in parallel with physical therapy and this was proven by previous studies in this field, which prompted The researcher addressed the topic about the importance of rehabilitation therapy using therapeutic physical exercises accompanying physical therapy in the rehabilitation of herniated lumbar discs for soccer players aged (35-25) years.

Research problem

The problem of the research is that herniated disc disease is an increasing and widespread condition among all age groups and social classes (Mooney, 2006) (Al-Mansi, 2006) (Majalli et al., 2007), where the records of Baghdad Governorate hospitals (rehabilitation centres for physiotherapy) in Iraq indicate that The proportion of (80-70%) of patients who complain of pain in the back area, herniated discs occupies 65% of those referrals for the year 2021-2020, and the rate is (20%) of the athletes who visited the Sports Medicine Center in the same year, 3% of them suffered from herniated discs. However, despite the fact that therapeutic exercises are considered mainly in the treatment of lower back pain and others, but that such an effective treatment method did not receive that attention. Which deserves locally and in the Arab world with regard to the problem of lumbar hernia, in particular, the attention to

this problem in Iraq and the Arab world is still limited and almost confined to surgery to a very large extent or treatment with thermal devices only, and the researcher was briefed on the treatment programs used in orthopedic and nerve clinics And in the physical therapy units of the Iraqi Ministry of Health, in addition to the Arab research, which is few and rare, which study the effect of therapeutic exercises on hernia patients. Therefore, the researchers decided to study the role of therapeutic physical exercises in the treatment of lumbar hernia, in order to alleviate the resulting pain in the lower back to be of help to the affected individuals and to help researchers benefit from its results. Lumbar hernia. Gradually returning to normal and within a short period, in parallel with physical therapy.

Research objective

- Preparing a rehabilitation program that includes therapeutic physical exercises in parallel with physical therapy to relieve lumbar hernia pain among the research sample.
- Identifying the effect of rehabilitation exercises and physical therapy in strengthening the muscle groups in the lumbar region and increasing the flexibility of the trunk of the research sample.

Research hypothesis

- The rehabilitation program has a positive effect in the process of relieving the pain of herniated lumbar discs in the research sample.
- There are statistically significant differences between the pre-tests and the post-tests in the sample in favor of the results of the post-tests.

Research fields

- Human field: A group of football players with herniated disc lumbar aged (35-25) years.
- Time field: (26/8/2021) to (28/10/2021)
- Spatial field: Medical Rehabilitation Center and Joint Diseases / Baghdad - (Channel Al-sader)

Research methodology and field procedures

Research Methodology

The researcher used the experimental method by designing an equal experimental group with a pre and post-test.

Community and sample research

The research community consists of former football-injured players who suffer from a lack of flexibility and muscle strength in the lower back region and at the age of (35-25) years. The sample in an intentional manner numbered (15) injured, the exploratory experiment was conducted on a number (2) of the injured and they were excluded from the experiment, and (6) of the injured were excluded for not attending the experiment and the sample on which the experiment was conducted consisted of (7) injured, which Represents (60%) of the research community of (15) infected.

Devices and instruments used to measure physical variables such as

- A device (Gemometer) to measure the flexibility of the spine.
- A device to measure the back muscles strength (BMS)
- Pain score (PS) test

The devices and tools used in the rehabilitation program are

- Rehabilitation hall.
- A hall for physical therapy sessions.
- In addition, therapeutic exercises (medical balls small and large - stick - wall ladder - weights starting from half a kilo, whether dumbbells or installed on the leg).

Tests used in the research

Torso flexion test from a standing position (Hassanin, 1995, pg. 346)

- Purpose: to measure the flexibility of the spine.
- Necessary tools:
 1. A scale (ruler) 50 cm long.
 2. Flat table bearing the weight of the laboratory.
- Performance description:
 1. Fixing the ruler on the edge of the table, as the middle of the

measurement is at the top of the table edge and the other half is at the bottom of the edge, (the researcher used a ruler from the top to 50 cm to fit the level of injury in the sample).

2. The point (zero) is in the plane of the edge of the table, and the deviations of the degrees that lie in the upper half (minus) and those in the lower half (positive).

- Recording: Recording the distance to the point reached by the fingertips.

Testing the muscle strength of the back using a dynamometer (Hassanin, 1996, p. 275)

- Purpose: To measure the strength of the back muscles.
- Necessary tools: a dynamometer to measure the strength of the back muscles.
- Performance description: The tester stands on the base of the device, bent forward as much as possible, with the two legs meeting straight, then the laboratory maintains the protrusion of his chest forward, then grabs the handle from both ends and tries to pull it up to the side of the scapula.
- Recording: Recording the device reading in kilograms.

Degree of pain sensation test

In determining the degree of pain sensation, the researchers relied on the treating physician who examines the patient and determines the duration of the degree of pain in the affected area, ranging from zero to ten degrees, which is a very high pain sensation (Appendix 1).

Application of the qualifying program

The researchers built therapeutic physical exercises for patients with lower back pain (lumbar herniated disc in the lumbar region at the level of L4-S1, L5-L5) and it was presented to a group of specialized arbitrators.

The implementation of the qualifying program took only four weeks, and the application of one training session took an hour, three times a week. The qualifying exercises consisted of two stages, and each stage included the following:

- **First stage:** It lasted for one week, then the use of physical therapy for a period of (15 min) aimed to get rid of tension and muscle pain, and widening blood vessels by increasing the secretion of histamine, which in turn works to increase metabolic activity in addition to the mechanical effect through the difference in pressure in tissues.

- **Second phase:** It lasted for three weeks and included the use of therapeutic physical exercises, which focused on strengthening the abdominal and back muscles and the flexibility of the spine, which leads to raising the level of functional performance of the muscles the duration of the session was estimated between an hour and an hour and a half, three days a week, in addition to the continuity of performing therapeutic exercises at home (the days without exercises).

Pre- tests: After all the preparations, the researcher conducted the tests with the help of the assistant team on the research sample on Sunday 6/9/2021 at four o'clock in the afternoon.

Post-tests: After all the preparations, the researcher conducted the tests with the help of the assistant team on the research sample on Thursday 8/10/2021 at exactly four o'clock in the afternoon and under the same conditions as the tribal tests.

Statistical methods: The search data was processed through the Statistical Package for the Social Sciences (SPSS).

Table (1) shows the differences between the pre and post measurements of the study group in the measurements of the flexibility of the spine, as indicated by the arithmetic averages, standard deviations and the value of (t)

Table (2) shows the differences between the pre and post measurements of the study group in the seasonal back strength measurements, as indicated by the arithmetic averages, standard deviation and (t) value.

Table (3) shows the differences between the pre and post measurements of the study group in the measurements of pain ratio, as indicated by the arithmetic means, standard deviations, and (t) value.

Discuss the results:

Through Table (1), it is clear that there are significant differences in the measurement of the flexibility of the spine. The researcher attributes the reason for the appearance of this difference in the flexibility variable to the effect of therapeutic physical exercises accompanying physical therapy on the

Table 1: Presentation the results of the spinal flexibility test.

Physical variables	Measurement	Sample volume	Arithmetic mean	Standard deviation	T value	Improvement %	Level sig	Type sig
Spinal flexibility	Pre	7	8.57	1.81	25.93	620.8%	0.000	Sig
	Post	7	20.86	2.61				

Table 2: Presentation the results of the back muscle strength test.

Physical variables	Measurement	Sample volume	Arithmetic mean	Standard deviation	T value	Improvement %	Level sig	Type sig
Back muscle strength	Pre	7	21.43	1.81	18.57	118%	0.000	Sig
	Post	7	39.29	1.79				

Table 3: Presentation the results of the pain percentage test.

Physical variables	Measurement	Sample volume	Arithmetic mean	Standard deviation	T value	Improvement %	Level sig	Type sig
pain percentage	Pre	7	7.38	1.06	21.54	58.9%	0.000	Sig
	Post	7	0.63	0.74				

anatomical and physiological capabilities, as it contributed greatly to the ability of tendons, ligaments and muscles in maintaining an erection. The spine and its strength as well as "muscular elongation and maintaining the muscle's ability to protect itself" (388.1997. Brain), as the ability of these muscles depends largely on the anatomical and physiological composition of the individual.

The researchers also sees the development in flexibility to the difference in the way exercises are used, including (free exercises, exercises without assistance, and positive stretching exercises with stability to the maximum extent that the patient reaches) "The diversity in training methods and methods and the difference in the training atmosphere from the usual helps to raise the degrees of private and general flexibility" (Huda, 1987.).

Through Table (2), it shows that there are significant differences in the measurement of back muscle strength. The researcher attributes these differences to the vocabulary of the qualifying curriculum that was applied to the sample in developing back muscle strength, as "muscular strength is the basis for the book of other physical attributes" as well as strength exercises. The back muscles contributed to "improving the coordination between the working and opposite muscles, which leads to a decrease in the effect of the corresponding muscles or to be completely eliminated" (Rasan 2002).

Through Table (3), it was found that there were significant differences in measuring the degree of pain, and the researcher attributed the reason for these differences to the rehabilitation curriculum, which contained exercises that strengthen the muscles and ligaments of the spine, as "strengthening the back muscles is one of the factors to avoid back pain" (Williams 1992). In addition, "exercises to strengthen the back muscles reduce, as much as possible, the percentage of handicap that accompanies back pain or the accompanying dysfunction" (Jakson, 1982). Thermal devices, where a quick-acting physiological response occurs, are linked to the presence of that source only.

Conclusions and Recommendations:

Conclusions:

- The rehabilitation program has a positive effect in rehabilitating those with herniated lumbar discs.
- Therapeutic exercises increased flexibility and decreased the degree of pain significantly.
- The rehabilitation exercises and physical therapy were effective in increasing the flexibility of the trunk and relieving pain in the lumbar region (lower back) among the members of the research sample.
- There are statistically significant differences between the pre-test and the post-test for the research sample in all the tests in favor of the post-test.

Recommendations:

- Encouraging the use of the rehabilitation program and therapeutic physical exercises in hospitals and physiotherapy centers because of their impact on improving the disease's physical and motor abilities.
- Encouraging patients to perform home exercises because of their impact on herniated disc patients.
- The necessity of relying in rehabilitation programs for those with

lower back pain on gradual therapeutic exercises for acclimating the patient to face spasticity and stiffness because of pain.

- Conducting similar qualifying studies and research in various sporting events.

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