International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 04, 2020
ISSN: 1475-7192

Effect of using rehabilitative exercises associated with low-intensity lasers to improve muscle strength and range of motion for those with shoulder joint immobility

[1]Lamyaa Abdul-Sattar Khalil

Abstract:

The researcher used the experimental method with the two sets of equivalents pre and post tests. Each group to match the nature of the problem.

The experimental approach "represents the most accurate types of scientific research that can influence the relationship between the independent variable and the dependent variable through experience"

Keywords: *rehabilitative exercises, low-intensity lasers, joint immobility*

I. Introduction:

The research aims to: -

1- Preparing rehabilitative exercises accompanying the low-intensity laser.

2- To identify the effect of rehabilitative exercises with low-intensity laser in improving muscle strength between the pre and post tests and in two research groups.

3- Understanding the effect of rehabilitative exercises with low-intensity lasers on improving the motor range between the pre and post tests and between the two research groups.

4- Identifying the differences between the two-dimensional tests in two groups. The research on the effect of rehabilitative exercises accompanying the laser and low intensity in improving the muscular strength and motor range of those with a frozen shoulder.

Research hypotheses: -

[1] University of Baghdad: College of Physical Education and Sports sciences for Girls Women

Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020

The researcher assumed the following: -

1- There are no statistically significant differences between the pre and post tests for the effect of rehabilitative exercises on the muscular strength and motor range for those with shoulder freezes and in favor of the post test.

2- There are no statistically significant differences between the posttest tests for the effect of rehabilitative exercises on the muscular strength and motor range of those with shoulder freezes and in favor of the experimental group.

Research fields:

The human field: - A sample of 12 people with a frozen shoulder, who are injured.

Timeline: For the period from 2/1/2017 to 6/3/2018.

Spatial domain: The Rehabilitation Center for Medical and Joint Diseases

II. Research methodology and field procedures

2-1 Research method

The researcher used the experimental method with the two sets of equivalents pre and post tests. Each group to match the nature of the problem.

The experimental approach "represents the most accurate types of scientific research that can influence the relationship between the independent variable and the dependent variable through experience"

Research community and sample:

One of the issues in scientific research is the selection of the sample, as the selection of a sample represents the community of origin faithfully. "The goals set by the researcher for his research and the procedures he uses determine the nature of the sample he will choose (2)

As (18) patients with freezing shoulder were selected, (4) patients were excluded due to their lack of commitment to the treatment period and their unwillingness to undergo the experiment, then (12) injured were divided into (6) injured with a control group and (6) with an experimental group and the sample constituted 66.6 %.

Tools:

- Dimensional symmetry scale to measure the degree of pain.

- Dynamo device to measure the strength of the fist.

- The goniometer device for measuring the range of motion.

- Low or intensity laser device (Beam 904 type, German made).

- Dell laptop.

- American-made strength sensor (4k3.200) from Mark 10.

Physical tests: -

1- Measuring the grip strength of the hand.

2- Measuring the muscle strength using the force sensor.

3- Measuring the motor range of the shoulder joint using the goniometer device.

4- Measuring the degree of pain using the dimensional symmetry.

Pre- tests:

Pre- tests were conducted on 4/1/2017 and on the experimental and control groups in the site division, which is the Medical Rehabilitation Center and Joint Diseases / at the chest of the channel, the researcher installed all conditions for the tests in terms of location and time.

The qualifying curriculum used: -

The researcher applied the qualification curriculum that included rehabilitative exercises and sessions using low-intensity lasers, as the specifications of the laser device: -

1- Name of the device Beama 04

2- Laser source: Gaas arsenium laser.

3- The recommended length is 904 nm

4- Power mw 10.

5- Classification 3B.

6- Pulsed beam type.

The researcher has considered a set of considerations in laser therapy sessions: - including the type of injury as well as the place where the laser pole is placed and what is the time required to use the laser by consulting doctors who specialize in physical therapy. Various qualifying exercises have been prepared that are commensurate with the type of injury and its degree, and then the classification of the qualifying curriculum began on 1/5/2017 until 5/3/2018, and then training at 5 rehabilitative units per week, equivalent to (40) rehabilitative units over a period of (8) weeks As then taking into account the gradual giving of exercises, as the repetitions were gradually increased for both the muscle strength and the motor range of the affected joint (the shoulder joint)[1].

Then increase the repetitions every two days, increase one repetition of each exercise, taking into account the diversity of the exercises, while applying the exercises with a slow pace to take the full range of muscles during the course of their work, and considering the dynamic range is one of the most important variables that the researcher

seeks to develop during the rehabilitation treatment period (to reduce spasm and reduce the risk of injury and help to Relax and reduce stress)[2]

Post-Test: conducting the dimensional tests on 6/3/2018 under the same temporal and spatial conditions for the pre-test.

III. Discussion of the significance of differences for pre- and post- tests:

Table (1) shows the results of the dimensional tests of the control and experimental groups in the muscle strength tests using the force sensor

Variables	Experimental group		Control group		Calculated value of t	Significance
	A	Std	A	Std		
Measuring the grip strength of the hand.	13,000	2,1213	10,000	1,414	2,631	Sign
Measuring the muscle strength using the force sensor	12,6000	2,5099	10,4000	2,7018	1,334	Sign
Measuring the motor range of the shoulder joint using the goniometer device	13,6000	2,198	10,000	1,4142	3,087	Sign
Measuring the degree of pain using the dimensional symmetry	14,2000	1,643	12,000	2,1213	1,833	Sign

The researcher attributes those teams to the nature of the exercises used within the rehabilitation curriculum as well as the use of modern therapeutic devices and methods that have had a clear effect of treating the injury that ensures the return of the affected part to the two cases of the nature of the injury[3].

Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020

The exercises used have taken into account the researcher in the development and development of flexibility and elasticity of the muscles and tendons surrounding the shoulder strap in all directions[4].

This is consistent with what Mohamed Ibrahim and Ahmed Fouad mentioned that the joints that are in good health perform the movement in its full range in terms of its ability to move from a full extraction to a full contraction and apply to the space between the two modes of full extinction and full contraction with the full extent of the movement.[5].

IV. Conclusions and recommendations

Conclusions:

1 - The rehabilitation approach and rehabilitative exercises prepared have positively affected the development of muscle strength and motor range as well as reducing the degree of pain.

2- The pre-qualification approach and rehabilitative exercises have positively affected the development of muscular strength and motor range as well as reduced the degree of pain.

3- The use of laser therapy has a positive effect as well as rehabilitative exercises in improving muscle strength and motor range.

4- The need to use effective treatment methods such as laser and muscle stimulation to reduce injuries.

Recommendations:

1- The necessity of using low-intensity lasers as treatment in rehabilitation programs.

2- Attention to exercises that develop muscle strength and motor flexibility to increase the range of motion.

References:

[1] W. J. Ibrahim, “Special Exercises and their Impact on the Development of Some Types of Muscular Ability , Functional Variables , and Digital Level of Runners (200m Freestyle) for Physical Disability (T 46) Men,” vol. 24, no. 08, pp. 12215–12221, 2020.

[2] A. A. Dheyab and H. S. Ibrahim, “Kinetic prediction and its relationship with some mental abilities and physical attributes of goalkeepers,” vol. 24, no. 08, pp. 12183–12197, 2020.

[3] H. S. Ibrahim, L. K. Qasim, A. A. Dheyab, and O. Saad, “The effect of an educational curriculum on developing some creative motor abilities and learning the skill of handball reception,” vol. 24, no. 06, pp. 14572–14578, 2020.

[4] Z. S. Abdulrazak, R. S. Ahmed, O. A. K, and O. S. Ahmed, “The impact of Fartlak exercises to develop speed Endurance With basketball,” vol. 24, no. 06, pp. 14549–14555, 2020.

Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020

[5] L. I. Ibrahim, S. Jabbar, A. Saadi, and O. S. Ahmed, “The effect of a traning program to develop self-confidence and the performance of some basic skills for football beginners between the ages of 14-16 years,” vol. 24, no. 06, pp. 14473–14480, 2020.

Received: 15 Jan 2020 | Revised: 5 Feb 2020| Accepted: 30 Mar 2020