

USE OF EXERCISES (P.N.F) FOR THE REHABILITATION OF THE MUSCULOSKELETAL OF THE SHOULDER JOINT AND EVALUATE USING THE TECHNIQUE (EMG) IN THE CATEGORY OF APPLICANTS TO LIFT THE BURDEN OF SPECIAL NEEDS

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ABSTRACT:

The rehabilitation of sports injuries is an integrated process and a team of integrated therapists and physiotherapists, so it plays a positive role in restoring the level of these muscle groups to normal state of strength and movement, as some players are subjected to injuries in the muscle muscle of the shoulder joint and the common cause of these injuries is The nature of the activity, which depends mainly on the performance of a particular muscle group and significantly on the muscle group involved in the anatomy of the shoulder joint, which is centered on the quality of performance for this particular activity, if the researcher prepared a number of exercises (PNF) Front and rear of the shoulder joint and evaluate using EMG technology in the category of advanced applicants to lift the burden of special needs to determine the strength of the muscles that are after the rehabilitation of the injury, where the number of sample (4) of the weight lifting players category of applicants for special needs, In the intentional way, by diagnosing the injury by the physiotherapist, the researcher developed a set of exercises (PNF) in the manner of the performance of the installation - relaxation with the contraction of the motor muscles using the means and tools of rehabilitation, and took the duration of qualifying units (8) weeks by (3) Modules The study concluded that the application of the PNF exercises used in the rehabilitation and strengthening of the shoulder muscle of the shoulder joint in the sample of the study was clear. (EMG) test for the tribal and remote tests, which showed the development of the balance of power between the frontal fibers and the back fibers of the muscle and the benefits of Dalal good, indicating the existence of muscle balance between them after the end of the rehabilitation period, and recommends the researcher to use exercises (PNF) For the rehabilitation of injuries, in a manner of performance Stabilization - Relaxation with muscle contractile contraction by physiotherapist or by the same patient if using the D1, D2 method using the rubber bands to be mentioned later. The work and diagnosis must be in conjunction between the trainer and the physiotherapist in order to determine the type of muscle weakness that needs Rehabilitation and strengthening the type of exercises required and intensity and frequency and duration of rest.

INTRODUCTION

Injury rehabilitation is one of the most important basic sciences specialized in the field of sports medicine, which is used and applied in the therapeutic exercises, to qualify sports injuries, as the exercise of weight lifting for people with special needs by the disabled mobility, and is confirmed by the existence of this disability through medical examination of Specialists in this field, also called the Bench Press, that is practiced by lying down the player on the floor dedicated to them, the player to drop the weight on the carrier to touch his chest and then lift it to the top as strongly as possible, and through this technique has Exposed to In the performance of the performance of a strong nerve muscle tension in the muscles of the dorsal muscle and the fibers of the front and back to the degree of strong pressure on the fibers at that moment, resulting in a type of muscle rupture, and that any injury in the shoulder joint will probably cause damage in The muscles and ligaments surrounding the joint and thus affect the movement and may result in a decline in movement through the loss of muscle some of its strength, recalling (Magdy and Cook, 1996) "that the shoulder joint of the most joints of the body movement and is extremely flexible and maintains its flexibility only if the organic function The vehicle works regularly, if any part of it is damaged , The movement decreased and the feeling of pain began."

Francis John (2001) emphasizes that "correct diagnosis and appropriate rehabilitation according to the program, which is appropriate to the requirements of each sport activity allows the player to return quickly to the normal state and continue to exert effort and maintain the level of achievement, and the appropriate rehabilitation followed Injury is the primary cause of recovering the affected area for its full function as soon as possible. " Hence, the importance of research in the number of exercises (P.N.F) for the rehabilitation of the frontal and posterior muscle of the shoulder joint and evaluate using the technique (EMG) to determine the level of strength and balance that the muscles after the rehabilitation of the injured from the category of applicants to lift the burden of special needs.

MATERIALS AND METHODS:**Research Methodology:**

The researcher used the experimental method in designing the experimental group with the tribal and remote tests to suit the nature and problem of the research.

Search community and sample:

The research community consists of weight lifting players, the category of applicants for special needs who represent (8) players, and the players were determined through the examination and medical diagnosis. The number of injured (4) of the research community was determined in a deliberate manner, thus the percentage of the research sample (50%) Is the percentage of sample representation from the research community.

Means of gathering information, tools and devices used in research:

First: Devices used in research:

- Video device for camera with camera
- A computer type (dell) computer
- Device (EMG) type (Myotrace) Bluetooth and accessories German-made number (1)

Second: Tools used in research:

- Rubber cords, leather belt, towel (cloth), special floor for people with special needs.
- A manual stopwatch (made in china) number (1)
- Heavy iron weight (20 kg), various iron disks weights

Third: Means of collecting information:

- Arab and foreign sources and references

Field research procedures:

Tests used in research:

First: Electrophysiological activity test (EMG) to assess force after the rehabilitation of the shoulder muscle (frontal lobe during the performance of the movement of the front and back pressure during the performance of the movement of the back pressure)

Measurements of electrical activity of the muscles are performed by the electrophysiological device (EMG) Bluetooth by measuring the level of the highest electrical activity of the dorsal muscle (front and back) of the shoulder joint of the affected party and the target in the strength assessment tests after rehabilitation through the performance of the front pressure and back pressure test, Expressed by the peak of muscular contraction, the following will be measured:

.- Measure the level of the highest electrical activity of the anterior dorsal muscle of the affected shoulder joint in the front pressure test. This indicator refers to the amount of motor units participating in the muscle contraction. This indicator is measured in Microvolts and is expressed by the peak of the contraction.

.- Measure the level of the highest electrical activity of the dorsal muscle back of the shoulder joint injury target in the test back pressure This indicator refers to the amount of motor units participating in the contraction of muscle and measured this indicator of the (MicroVolt), and expressed by the peak of constriction.

.- The results of the tests (pre-postural) of the dorsal muscle (front and posterior) are evaluated and compared between the force (the frontal adrenal muscle of the shoulder joint in the tribal test with the same muscle in the post-test) separately and also assess and compare the strength Shoulder test in the tribal test with the same muscle in the post-test also separately, for the purpose of assessing the extent of the exercise (PNF) in achieving the rates of improvement of muscle balance after rehabilitation.

Main experience

Tribal Tests:

The tests were carried out on the group of members of the research sample on 28/3/2018 in the hall of the weight lifting association of the Iraqi National Paralympic Committee. All conditions related to the tests in terms of tools, time and place, as well as the method of implementation, In remote tests as much as possible.

:Rehabilitation exercises

In order to achieve the objectives of the research, the researcher developed a series of exercises "the method of performance of the installation - relax with the contraction of the muscles of the motor, which includes this method the performance of the contraction of the first isometric of the muscles working and the other muscles of the antibody, and after the prolongation of negative and isometric contraction of the muscle working for (7-15) (2 - 3) second, after a first negative lengthening accompanied by contraction of the extended muscle isometric for 7 - 15 seconds, followed by relaxation of the muscle accompanied by an isometric contraction of the antibody for (7 - 15) seconds, Relax all muscles for 20 seconds before t Exercise decision again."

As well as the use of country exercises (P.N.F) in rubber bands as shown in Figure (1). The researcher relied on the available scientific sources and consulted with experts in the field of sports medicine in selecting methods of using PNF exercises and with the help of rehabilitation tools and tools. The duration of the preventive units was 8 weeks with 3 units per week, 25) minutes, weekly training days (Saturday, Monday, Wednesday)

The exercise method was applied to the research group, which contains muscle stretching exercises by assisting the therapist F through the injured player using the DNF (D2) PNF rubber tapes with a severity of (50-80%) and repetitions of (4) - 10) and in groups (3-5) and rest periods (30 th-60th):

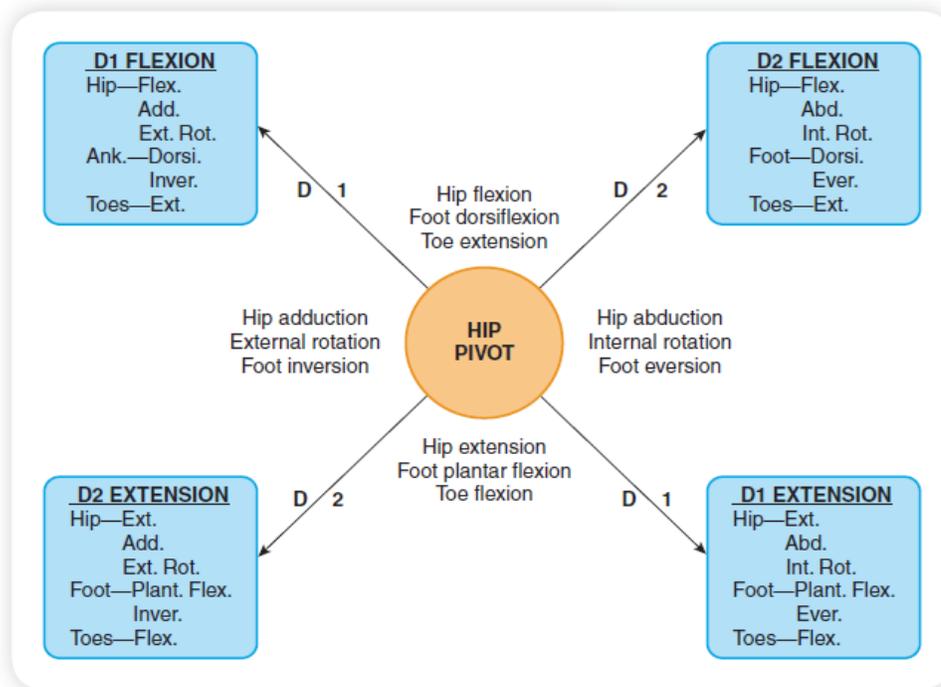


Figure (1) shows the performance of exercises in the country (P.N.F)

Remote tests:

Post-tests of the research sample were conducted on 29/5/2018 in the special hall of the weight lifting association for disabled people in Paralympics. The researcher was also keen to provide the conditions and requirements of the tribal tests themselves in terms of time, place and auxiliary team.

Statistical means

The researcher will use the statistical file (Spss) to perform statistical treatments:

- .The arithmetic mean-
- .- Standard deviation
- .Broker -
- T test for interrelated samples.

RESULT AND DISCUSSION:

The test results of the electrophysiological activity test (EMG) for strength assessment of the shoulder muscles after rehabilitation (frontal vertebrae during the performance of the anterior and posterior motility movement during the performance of posterior movement) were analyzed, analyzed and discussed.

For the purpose of comparing the results of the test, the researcher presents the results of the tribal and remote tests of the group to examine the test (electrical activity (EMG) to evaluate the strength of the post-qualification dorsal muscle) and discussed, as shown in Table (1) and (2)(

Tables (1) and (2)

Type of significance	Level of significance	Value t	The error Standard For midfield teams	Teams midfielders	standard deviation	Arithmetic mean	measuring unit	the exams	
moral	0.030	3.909	403.699	1578.25	367.978	1096.500	Tribal	Test the frontal pressure of the anterior dorsal shoulder muscle	1
					1166.09	2674.750	Post		

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moral	0.030	3.909	403.699	1578.25	367.978	1096.500	Tribal	Test the frontal pressure of the anterior dorsal shoulder muscle	2
					1166.09	2674.750	Post		

The mean, standard deviation, mean difference, standard error for mean differences, calculated value (T), significance level, and type of significance of the group. The search in the test (pre-post) in the test of the strength of the shoulder muscles (frontal lobe) during the performance of the forward and posterior movement during performance Back pressure movement).

) 0.05 (at the degree of freedom (3)

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and (2) showed that there were statistically significant differences in EMG by assessing the force of the shoulder muscle (frontal lobe) during the performance of the forward and posterior movement during the performance

of the back pressure movement as significant differences between the two tests The development of the muscle strength test is based on the development of the muscle strength test. The improvement is due to the complete recovery of the injury and improves the motor range and strength of the shoulder joint muscles. This is evidence that the PNF was built on scientific grounds so that the player Of maximum use s (EMG). These results are due to improvements in musculoskeletal compatibility, improved elasticity of articular ligaments, muscular tendon strength, and increased muscular strength to produce strength. This is consistent with what Risan Khrebat (2017) To "combine exercises aimed at

developing the qualities of strength with an effort to develop joint movement in a single exercise that helps to increase the movement of flexibility in the joints with indicators for the development of effective balance and neuromuscular compatibility and some characteristics of strength at the expense of active preposition of active muscles and corresponding, which leads to increased muscle strength To produce maximum power."

This development in the maximum force can be explained from the point of view of the researcher to the effectiveness of exercises for the balance of muscle between the working and the opposite and the level of development in the test (post) was good and sufficient for the muscles as it became stronger and effective in the performance of tests and the emergence of differences, (Amiri et al., 2005) of the importance of attention to the balanced development of the strength of the working muscles and corresponding to the same joint during the programs designed to train muscle strength and this leads To avoid occurrence

Injuries.

The researcher sees that there are multiple variables interfered with in PNF exercises in a new way to improve muscular balance and strength at the same time through the resistance of pulling the rubber band in different directions (grasping, stretching, rounding, rotation and rotation (inside and out), the total movements of shoulder joint And helps to strengthen the muscles that perform these movements, which contributed significantly to the development of muscle strength of the shoulders, and this is consistent with what referred to (Cyan Cochran and Tom House, 2000) "The regular practice of many exercises with a focus on muscle groups required by the nature of performance in This exercise will neglect the biting groups The muscle injury is due to the weakness of the muscles that are not sufficiently trained, so the best way to restore or maintain muscle balance is to improve the muscle mass. Attention to the training of the weak part of the strong part by performing appropriate frequencies and groups that address the basic motor muscles of the movement and the muscles and anti-muscle aids, which contributes to the prevention and reduction of injuries."

CONCLUSIONS:

By presenting, analyzing and discussing the results, the researcher reached the following conclusions:

- The results showed a positive effect of P.N.F exercises in the rehabilitation of the shoulder muscle injury.
- The scientifically based P.N.F exercises have a major role in improving the balance of the front and back muscles of the shoulder muscle.
- The use of P.N.F exercises increased the muscle strength of the frontal and posterior dorsal muscle through EMG evaluation, as well as the determination of muscle weakness and disability previously in the tribal test.

ENDORSEMENT:

(P.N.F exercises) to correct the injury of the dorsal muscle of the shoulder -

-) Training courses for the training of National Teams (NN.F
- Conducting other studies similar to the evaluation with EMG technique) to determine the strength and proportion of balance between muscles after rehabilitation of injury.
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