
The Effect of 12 weeks Selected Physiotherapy programs on Pain and Strength of the Volleyball players with Shoulder Impingement Syndrome

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Abstract

The study were investigated the effect of 12 weeks of Selected Physiotherapy programs on Pain and Strength of the Volleyball players with Shoulder Impingement Syndrome. Samples was 30 athletics that came to physiotherapy clinics and treatment center in Borujerd in year of 2013 and then randomly divided into experimental and control groups. Vas pain scale severity of pain and the muscle strength before and after treatment were measured. After applying the selected 12 weeks program of physical therapy dramatically the amount of pain was reduced in experimental group as well as improved their performance and muscle strength.

Key words: Volleyball players, Shoulders Impingement Syndrome, Pain, Muscle strength

Introduction

One of the most common acute sports injuries are dislocation and strain. The most common musculoskeletal injury in volleyball player are in shoulder and also arm pain [26]. Impingement syndrome is the most common shoulder disorders including the 44 to 65 percent of all cases of shoulder pain. This complication can be created for various reasons such as anatomical problem in upper head of Humerus bone, the weakness of the arm muscles, weakness of the posterior capsule tendon, stiffness of Rotator cuff. Also scapular and postural changes causing this syndrome of shoulder joint. The most serious damage in volleyball players in the shoulder and scapular and one of the most common of these injuries is Impingement syndrome[25]. The weakness of the muscles of the scapula area can be leading to abnormal situation of upper head of humerus and affected the natural function of the shoulder mobility. Increase the upper and anterior displacement of the head of the humerus in the patients with Impingement syndrome

has been shown by few research [27]. also the weakness or fatigue in deltoid and Rotator cuff muscle can be increasing upper displacement of the head of the humerus when the arm comes up to the top of the scapula bone and rotated towards the posterior tilt and outside. Due to the important role of the shoulder muscles in creating and controlling the movements of the shoulder muscle, any dysfunction can move the scapula, humerus, and clavicle and causes to change or modify the Kinematic factors. Impingement syndrome also has been reported in people with agonist and antagonist muscle imbalance between the glenohumeral joint and Scapulothoracic causing damage to the shoulder joint and make the Impingement syndrome. When the soft tissues including long head tendons of biceps, Supraspinatus and acromion, between the head and the front part of the arm were compressed, Impingement syndrome could be created [30]. In General, this syndrome is a disorder in the sub acromion space of shoulders. When for any reason the sub acromion space reduced and the soft tissue put pressure on the area, suffered by inflammation and tendonitis and gradually tear rotator cuff and the long head tendon of the biceps muscle and bursitis [13] . Tyler (2005) in a study about the power of the shoulder with the aid of patients with Impingement syndrome showed that these patients despite having a degree of natural muscle weakness of external Rotator in substantially when hand-held dynamometer test [28]. Kamkar (1993) believes that the changes in biomechanical evaluation of normal and abnormal shoulder girdle muscle function can be an important factor in creating stability arms [25] . Relaxation to control pain and reduce inflammation by ice, massage and other types of hand treatment can be used. Motion therapy with the patient's mobility limitation problem, failing or weakness and disability in muscles and apply therapeutic techniques and isometric exercises and resistance may be used to improve the Impingement syndrome.

Materials and methods

Present study try to find effect of 12 weeks Selected Physiotherapy programs on pain and strength in the shoulder impingement syndrome in volleyball players .the research method was quasi-experimental study with pre and post test. Statistical society was 250 male and female with shoulder problem which have documents and referred in physical therapy clinic and medical centers in the city of borujerd.

Due to the limitation of the statistical community we refer to the location of the most important teams in various age categories and youth volleyball teens, so all male and female in the last 2 years were faced with shoulder Impingement syndrome and try to start treatment in physical therapy and clinics centers were marked by the interviewed face to face. finally overall number of 30 people was selected and then randomly divided into two experimental groups of (n=15) and control group (n=15). experimental group contain females 26/7%, and male 73/3% in the age category 20-17 years and the second group (control group) 33.3% female and 66/7% male and in the range of 20-17 years. the selected physical therapy program during the 12 weeks apply with experimental group and each week with 3 sessions exercise and for 45 min per session. pre test in first season and post test in last session were collected. data collected then analyzed for the purpose of research results. MRI photos for detection of diagnosis items such as the angle or

painful arc was collected. statistical data pain was based on a questionnaire the Vas scale (visual Analogue scale) . the amount of pain from 1 to 10 in subjects was as follow:

The range of 1-3. Mild pain, 4-6 moderate pain, and the range of 7-10 was severe pain. And for measure the muscle power the weight was used. So that the power of the muscles of the shoulder joint by 3 kg weights was measured in terms as follows.

Grade 5: the patient weights up a 3 kg with the full range.

Grade 4: patient weights up a 3 kg to half of the range (90 degrees).

Grade 3: the patient only without weights raise hands with the full range.

Grade 2: the patient without weights raise hands with half of the range.

Grade 1: the patient just feel a contraction without the ability to move hands.

Grade 0: there was not contractile and sensory in the hands of the patient .

To test the hypothesis Kruskal Wallis test (k.c.) and analysis of variance (f) was used. Statistical research data based on independent variables and dependent variables were analyzed using Spss software and output was obtained through the above test results and analysis of the leasing has been presents.

Results and findings

Distribution test in pain:

Variable pain	1-3	4-6	7-10
Pre Test	13	40.3	46
Post Test	53.3	46.7	0
Control Pre Test	13.3	33.3	53.3
Control Post Test	27	40	33

Distribution in muscle strength test:

Muscle strength	Feel muscle contractions	Move a muscle until the middle	Full motion muscle without weights	Half motion, muscle strength	Full motion, muscle strength
Pre Test	0	47	40	13	0
Post Test	0	13	20	47	20
Control Pre Test	0	13.3	20	46.7	20
Control Post Test	0	7	0	33	60

The test results were indicated that a significant difference in feeling pain between pre to post test in two groups ($p \leq 0.05$).

Also The results of the analysis of variance test indicates that the average difference between the amount of muscle strength athletes with the condition had a significant difference in the investigation So 12 weeks of physical therapy on muscle strength in patients with shoulder impingement syndrome was effective ($p \leq 0.05$).

Discussion and conclusions

According to results we conclude that the 12-week selected physiotherapy program affects pain and strength in volleyball players with shoulder impingement syndrome. According to the research revolves around the issue of Salamat (1387) argues Following the exercise of voluntary muscle activity increases with decreasing pain and this kind of exercise in patients with shoulder Impingement syndrome can be effective [10] . Noorbakhsh (1388) believes that the selected treatment program of physiotherapy and massage therapy to reduce pain and increase range of motion and stretching exercises effective professional athletes. Nodehi Moghadam (1389) in their research concluded that patients with shoulder impingement syndrome in the shoulder muscles are less than healthy. Alibakhshi (1389) in their investigation concluded that combination therapy better therapeutic effects of an increasing range of motion, especially the rotator cuff and in supraspinatus muscles. Lorax (1994) with respect to internal and external rotator muscle strength in the lower impingement syndrome patients from healthy individuals. Lyntl et al (2001) concluded that the combination of flexibility exercises, PNF and cryotherapy would be more efficient to increase the flexibility of the tension. Herbert (2001) believes that massage therapy as a backup in movement therapy and exercise therapy for the management of musculoskeletal pain muscle. Taylor (2005) suggests that patients with shoulder impingement syndrome despite having a degree of external rotator muscle strength considerably in their natural weakness. Rupsil et al. (2000) in their investigation concluded that ultrasound diagnostic tool with high precision, safe and affordable, dynamic, and conservative treatment after 2 months, resulting in improved strength patient.

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