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The Effect of Pilates Exercises in the Repair of the Aberration and Balance of the Muscles of Shoulder Girdle as a Beginning for the Fitness

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Abstract

Fitness refers to the good health of athletes, then, it is necessary for every athlete to duty the importance of management and agreement in the training of muscle groups then everything related to the substratum and muscle balance and evaluate it by using the Pilates way to identify its elements and secrets so as to raise the substratum of the athlete and rehabilitation of distortions and deviations, creating healthy habits, and spreading fitness awareness among athletes through working to improve strength, lengthening and muscular balance of the shoulders. Thus, the researcher used the experimental approach by using the experimental design with one suitable group of the research, while, the sample of the research that made up of (12) athletes, that has been chosen by the researcher by using the intentional method for those who are suffering from the aberration of the shoulder fall. The researcher made sure to applied the Pilates exercises by using repeat contraction that aims to improve muscle balance, strength and flexibility of the sample of the research, with (8) weeks and consists of (24) Training modules, (3) modules a week, the most important conclusion in the research is that the using of Pilates contribute to reduce and rehabilitation the aberration of the shoulder fall, if the essential strength of the shoulder girdle muscles that assist in developing the muscular balance, it can be concluded that these exercises agreed with the aberration of shoulder fall and muscle balance.

Keywords: *Health of Athlete, Fitness, Muscle Balance.*

Introduction

Allah the almighty is giving the health to mankind to be crown for them, Allah the almighty says in the Glorious [1]. We have indeed created man in the best of moulds(, the human body is very accurate and complex, it is created to the fullest level to be ready to adapt to all the requirements of the environment, Fitness refers to the good health of athletes, then, it is necessary for every athlete to duty the importance of management and agreement in the training of muscle groups, which required to planning in order to achieve a high [2] level of muscle balance whether it is in the body parts (right – left) or in one part for the muscles (stretching and shrinking), especially in the joints and extremities that work in the activities of flinging balls and beating on the basis of the muscles of the shoulder girdle, then ignore the muscles experiences of balanced force of the left and right shoulders through the performance [3] of movements of the main goal leads to appearance of the aberration of shoulder fall, the favorite arm in the activities of throwing and beating in the two games (volleyball - handball) [5]. Therefore, the existence of such a kind of aberrations in the body changes its mechanics in the performance of these different skills and dispersion of power in the side paths do not work in the same skill then it be the deviation of the area that is the most at risk and cramp [6]. The significance of research lie in the study of all concerning with the substratum and muscle balance and evaluate it by using the Pilates way to identify its elements and secrets so as to raise the substratum of the athlete and rehabilitation of distortions and deviations [7], creating healthy habits, and spreading fitness awareness among athletes through working to improve strength, lengthening and muscular balance of the shoulders. The balance of muscle is the main part to make a good health (fitness), also this method prepares the body type to another perfect body.

The Methods and Practical Procedures of the Research:

The Methodology of the Research

The researcher used the experimental method by using the experimental design with one group which is suitable for the research.

The Sample of the Research

The sample of the research that made up of (12) athletes of first club athletes (volleyball- handball) in Thi-Qar, that has been selected by the researcher by using the intentional method for those who are suffering from the aberration of the shoulder fall. The researcher made a similarity of the following variables:

Table 1: Shows the Coefficient of Skewness to Measure Pre-Test of the Research Sample in Some Main Variables

Variables	Measurement Cell	The significance of the statistical characterization			
		Mean X.	SD.	M.	the Coefficient of Skewness
Age	Year	19	0.6	19	0
Training Age	Year	3.5	1.3	2.5	0.666
Length	M.	178	2.23	179	0.532
Weight	Kg.	69.70	4.30	71	0.772

The previous table shows that all the values of the Coefficient of Skewness between (-1+1), so this indicates to the similarity of samples in the research variables before make the main experience.

The Research Tests

The Aberration of the Shoulder Fall: It is detected by drawing a line between the two non-sticky papers placed on the lateral top of the shoulder joint (anatomical points) on both sides of the body. If the anatomical point forms a current angle (0 °) with the frontal axis (axial axis), that means this is not aberration, however, if the degree of angle increases [8], this indicates that there is a quantum deviation and the angle is measured in degree by the program (Kinovea) as in Fig. (1).

The Tests of Muscle Balance of Muscles That is Working on the Shoulder Joint

The maximum strength of the underlying muscles (capture, rumbles, dimensions, roundness, internal rotation, external rotation) of the shoulder joint was calculated by way of the number of times a movement was performed with a load of weight 5 kg, and then the maximum force value of the right shoulder and shoulder (1) and then calculate the balance of muscle balance through equation (2) the closer the ratio of 100% indicates that there is a balance between the muscles of the body (shoulders):

RM-1 = raised weight ÷100 - Number of repetitive repetitions × 2 ..... (1)

Muscular balance = high shoulder force ÷ strength of low shoulder × 100 ..... (2)

The Main Experience

The exercises were conducted after reviewing a number of sources related to sports training related to the subject of the research. After presenting it to the experts, the exercise was started in the form of repetition contract to improve the muscle balance and development of muscle strength and elasticity for the members of the research sample on 15/1/2019 until 20 (3) units per week (Sunday - Tuesday - Thursday) for all muscles and in the method of directing the endurance (3-1) between the weeks while the orientation between the days (2-1), "The number of repetitions (3-5) and the number of groups

of (3-5) groups may be included researcher intensity training by giving exercises on both sides and then per party either using different frequencies or varying intensity of training for each side of the body where focused The researchers were trained to maintain the strength and increase the lengthening of the low shoulder while the shoulder training was high by increasing the strength and maintain the level of muscle extension and since the training intensity used in the development of flexibility is (100%) the intensity of performance will be using the researcher to use endurance guidance based on the maximum exercise time intensity (100%) directed by hard training.

The Analysis and Discussion of the Results

Explain and discuss the results of differences in shoulder fall deviation for pre and post-tests of the groups

Table (2): The Values of means X., standard deviations and level of development for shoulder fall deviation for pretests and posttests of the research group

No.	Variables	Measurement cell	Test			Development level
1	Shoulder Fall		Pre-test	3.583	0.514	39.534
			Post-test	1.416	0.514	

The Experimental Research:

We see that the values of shoulder fall deviation of the research group have evolved by (39.534) as it appears that the value of the deviation of the shoulder fall by the dimensional test has evolved significantly from what it was in the tribal test and the researchers attribute the reason for this ratio of evolution to the physical awareness played by the researcher in educating those affected by the deviation of the fall The shoulder has led to positive results for the research, and this is confirmed by [3] " that raising awareness of the dictionary is one of the methods used in preventing deformities, especially deformities that did not reach the stage of composition. By presenting the table for the deviation of the shoulder fall, we found there a clear decrease in the degree of this deviation and the researchers attribute the reason for this and generally to the practice of the sample members to the training of the rehabilitation using the method of Pilates, and that this improvement was attributed by the researchers the full commitment of the members of the sample performance all Pilates training vocabulary, which contained physical exercises that means devices and aids to treat and rehabilitate this condition, has been repeated (3) times a week for twelve weeks. Hence it can be said that the goal of the research was achieved and was recognized the effect of exercises using the method Pilates prepared to correct the deviation of shoulder fall which contributed to the body's correct ability, as well as improving the muscular balance of the shoulder girdle and increasing its flexibility, and strengthening the muscles, it is a comprehensive exercise that works to rehabilitate the body from all aspects.

Table (3): Values of Means X., standard deviations and the level of development of the relative index of the muscular balance of the pre and post-tests of the research group

No.	Variables	Measurement Cell	Test			Development level
1	Muscle balance of the holding muscles of the shoulder	%	Pre	87.252	1.850	9.417
			Post	96.322	4.782	
2	Muscle balance of extensor shoulder muscles	%	Pre	89.947	2.379	6.054
			Post	95.744	6.415	
3	The muscular balance of the distal muscles of the shoulder	%	Pre	88.582	4.224	6.987
			Post	95.238	4.060	

***Cont* .... Table (3): Values of Means X., standard deviations and the level of development of the relative index of the muscular balance of the pre and post-tests of the research group**

4	Musculoskeletal balance of the proximal muscles of the shoulder	%	Pre	87.758	2.820	7.401
			Post	94.773	1.766	
5	The muscular balance of the inner rotation rotator muscles	%	Pre	88.444	1.712	8.664
			Post	96.834	1.858	
6	The muscular balance of the outer rotation muscles of the shoulder	%	Pre	79.399	7.908	13.132
			Post	91.403	9.584	9.417

We can see that the values of muscle balance of the shoulders of the post-test has evolved significantly from the post-test and attributed the researchers cause this development to increase the growth of muscle strength in a balanced balance of the right shoulder compared to the left shoulder and thus contributed to modify the body from the previous situation to the ideal situation which should be. The two researchers attributed this to the nature of exercises applied by the research group Pilates exercises performed by the research sample on a regular basis and within different frequencies and times of constancy specified, contributed to increase the muscle balance in the muscles of the shoulder girdle as well as to get the ideal shape of the shoulders, Musculature between the underlying motor muscles (rounded to the inside) and the corresponding muscles (rounded out) not only happens in the force but also occurs in the lengthening, The essence of the exercises applied by the research sample was to focus on an ideal combination of strength and length, which achieves the goal of researching that the proposed program of balance in muscle strength has an important effect on the development of muscle balance in general that compatibility between fist muscle groups and relaxed muscle groups will helps to increase the equal strength of the muscles of the body in order to achieve an acceptable physical balance of the body, meaning the shape or position taken by the body during movement or stillness helps to maintain the center of the body's weight within the base of the balance of the parts of the body, especially the shoulders in a hierarchical form from the top down as a result of the development of the balanced strength of the shoulder girdle muscles, which in turn help to move the weight of these parts gradually, balanced and equal between the bones, joints, muscles and ligaments of the body." Keeping the muscles in balance with increasing strength is the first requirement to develop the muscle's ability to produce maximum strength in the maximum range of motion at the highest possible rate of speed, as well as to increase the muscle capacity of the left arm (non-strike or aimed) during the technical performance of the events of throwing and beating Has a significant impact on the improvement of the ability of the strike arm or as a result of the principle of the transfer of the impact of training from the arm of non-working to the labor force, and also find that the rate of progress of the arm is preferred than the preferred arm due to neglect in the previous training programs and the varying levels of strength and [9-11] ability of the shoulders agree with the main goal of research is to balance the muscle strength between muscle groups working and non-working and this is what achieved exercises for balance in muscle strength.

Conclusions

Through the results between the pre and post-tests, the application of the exercise Pilates therapeutic treatment on the devices and tools helped significantly improve the strength and flexibility of the shoulders of the muscles of the shoulder girdle as well as reduce the degree of deformity of all injured. That is, the curriculum was in line with the deviation of the shoulder fall. The rate of development between the results of the pre and post-tests of the variables during the study was effective and in favor of the post-test of the deviation of the shoulder fall and muscle balance.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Physical Education and Sports Sciences, Thi-Qar University, Iraq and all experiments were carried out in accordance with approved guidelines.

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