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The effect of using rehabilitation exercises for injured with shoulder dislocation among volleyball players in Najaf governorate clubs

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Abstract

The purpose of this paper is to preparing rehabilitation exercises to rehabilitate the injury of partial tear of the shoulder muscle among volleyball players for clubs in Najaf Governorate, and identifying the effect of rehabilitative exercises to rehabilitate the injury of partial tear of the shoulder muscle among volleyball players for clubs in Najaf Governorate. The researchers adopted the experimental approach with a one-group design with two tests (pre- and post-test) to suit the nature of the research problem. The research community was represented by volleyball players for the clubs of the Najaf Governorate, which were (Najaf Club, Kufa Club, Naft Al-Wasat Club) for the 2023-2024 sports season, and their number was (11) injured players. The sample was players with partial dislocation of the shoulder joint, who underwent medical examination and diagnosis. The type of injury was determined. The research sample was determined and included (8) injured players, as they were chosen intentionally and through the clinical examination of the treating physician, as the type of injury was partial dislocation of the shoulder. One of the most important results reached by the researchers is that: The use of rehabilitation exercises has shown a positive effect in improving the range of motion of the shoulder joint in volleyball players, and use of exercises prepared by the researchers and grading their intensity from easy to difficult had an effective role in accelerating the recovery process for players with shoulder joint injuries. One of the most important recommendations recommended by the researchers is that: Guidance for the proposed rehabilitation program under study in rehabilitating the shoulder joint injury (partial dislocation) to speed up the athletes' recovery and return to the stadiums.

Keywords: Rehabilitation exercises, shoulder dislocation, volleyball

Introduction

Physical education has been closely linked to other sciences, such as physiology, biomechanics, anatomy, psychology, and sports medicine, due to their close relationship to the training process and how injuries occur. Sports medicine has contributed greatly to the safety of players and protecting them from injury, as "physical injury may turn into negative psychological effects." The player must prevent the development of his achievement." It is the responsibility of sports medicine workers to protect players from injuries, as well as to return them to the field quickly and at the same previous level. This is done by knowing the types of injuries, their causes, and the best methods used to prevent them.

Injury is considered one of the basic problems facing the process of advancing sports levels and moving from one level to another. The lack of knowledge of a group of players and coaches about the causes of injuries and how to avoid their occurrence leads players - in many cases - to commit errors that may be technical or tactical, or poor organization of the training load. Alternatively, the internal and external body systems are not ready and the skeletal system is not ready to accept the effort that falls on the athlete. Injuries are not limited to the highest levels, but are represented at all levels. Injury may occur in training, in the match, in practical lessons, and even in light recreational activity. The incidence and types of these injuries vary, and their relationship to the type of activity practiced. Therefore, we must always keep in mind the principle of player safety first and put all possibilities to prevent its occurrence or recurrence. Injuries to reduce their severity. This is done by taking all necessary measures during training and matches and being fully prepared to provide immediate first aid.

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When an injury occurs, because neglecting immediate first aid at the time of a minor injury, which plays a vital and important role, leads to bad results, and its danger can double in determining the player’s sporting future.

From the above, it is clear that players in various sports, especially volleyball, are exposed to many sports injuries, including shoulder joint injuries, which may impair their skill performance, whether they occur as a result of external reasons or internal reasons, such as feeling tired or poor performance. Warming up, technical performance errors, and thinking about these errors while performing skills. Here lies the importance of the research in knowing the effect of rehabilitative exercises in rehabilitating partial dislocation injuries for volleyball players in the clubs of Najaf Governorate.

Research problem

Injury constitutes a physical and psychological obstacle, as it becomes an obstacle to achieving optimal achievement and reaching higher levels. In fact, the occurrence of injury when practicing sports activities is a phenomenon that is not consistent with the health goals of physical education.

Given the frequent exposure of volleyball players in the clubs of Najaf Governorate to various types of sports injuries, especially in the shoulder joint of the body, this topic aroused the interest of the researchers in an attempt to address it and find out its causes, seriousness, areas of occurrence, the extent of its impact on the performance of athletes in the performance of players, and the percentage of its presence in each case. Match. This is in order to find appropriate solutions to treat such sports injuries that affect the level of achievement and progress of volleyball players.

Research objective

- Preparing rehabilitation exercises to rehabilitate the injury of partial tear of the shoulder muscle among volleyball players for clubs in Najaf Governorate.
- Identifying the effect of rehabilitative exercises to rehabilitate the injury of partial tear of the shoulder muscle among volleyball players for clubs in Najaf Governorate.

Governorate.

Research hypotheses

There is a positive effect of rehabilitative exercises to rehabilitate the injury of partial tear of the shoulder muscle among volleyball players of the Najaf Governorate clubs.

Research fields

- **Human field:** injured players in volleyball clubs in Najaf Al-Ashraf Governorate.
- **Time field:** (22/10/2023) to (10/12/2023).
- **Spatial field:** Medicine Center in Najaf Governorate.

Research methodology and field procedures

Research Methodology

The researchers adopted the experimental approach with a one-group design with two tests (pre- and post-test) to suit the nature of the research problem.

Community and sample research

The research community was represented by volleyball players for the clubs of the Najaf Governorate, which were (Najaf Club, Kufa Club, Naft Al-Wasat Club) for the 2023-2024 sports season, and their number was (11) injured players. The sample was players with partial dislocation of the shoulder joint, who underwent medical examination and diagnosis. The type of injury was determined. The research sample was determined and included (8) injured players, as they were chosen intentionally and through the clinical examination of the treating physician, as the type of injury was partial dislocation of the shoulder.

Homogeneity of the research sample

In order to control the variables that affect the accuracy of the research results, the researchers resorted to verifying the homogeneity of the research sample related to morphological measurements, namely (height, body mass, training age), as the researchers used the skewness factor before proceeding to apply the main experiment to the research group (experimental), as shown in Table (1).

Table 1: shows the homogeneity of the research sample

Variables	Measuring unit	Median	Mean	Std. Deviations	Skewness
Length	Cm	172.5	173	32.12	1.762
Weight	Kg	60.2	61	7.223	1.022
Training age	Month	20	19.6	1.324	0.193
Duration of injury	Day	15	14.4	1.032	0.231
Type of injury	Partial dislocation of the shoulder joint				

From the results of Table (1), it is clear that the values of the skewness coefficient are smaller than (± 1), which indicates homogeneity the research community in all variables

Methods, tools and devices used in the research

Data collection methods

- Arab and foreign sources and references.
- Personal interviews.
- Tests and measurements.
- Special forms for recording test results for students.

Tools and devices used

- Electronic calculator (laptop) (1).
- Electronic stop watch type (2).
- Plastic signs (12).
- Volleyball court.

- Siren number (2).
- Adhesive tape
- Forms for recording test results.
- Genometer device
- Weight measuring device

Field research procedures

Measuring the range of motion of the shoulder joint

- Range of motion measurement was performed using a goniometer to measure the range of motion of the shoulder joint in (4) different movements.
- Upward bending movement.
- Backward extension movement, outward movement.
- Inward rounding movement.

Exploratory experience: The exploratory experiment was

conducted before starting the basic experiment in order to identify the most important obstacles and negatives in order to be addressed. The goal of the exploratory experiment is.

- Knowing the suitability of the tests for the research sample and measuring the time to perform them.
- Ensure that the hall and tools used are valid and suitable for the tests.
- Preparing the supporting work team, as well as identifying the difficulties they may face.
- Knowing the difficulties that may face the course of work and developing the most appropriate solutions to them.

Pre-tests

The researchers conducted the pre-tests on (Friday) corresponding to (23/10/2023) at (9:00) in the morning in the Kufa Sports Club hall on a group of members of the research sample, which numbered (8) players with partial dislocations.

Main experience

The researchers prepared and organized the rehabilitation exercises based on personal experience, using many scientific sources, and conducted many personal interviews in the field of sports rehabilitation and volleyball, and began “applying the appropriate rehabilitation exercises, which included strength and stretching exercises, as well as neuromuscular compatibility and muscle balance exercises on the group members.” The experiment took place on 23/10/2022 until 15/11/2023, and (intensity, repetitions, and appropriate rest periods) were taken into account. The researchers developed the rehabilitation exercises, taking into account the physical characteristics of the players and some specialized references in sports injuries and rehabilitation, and used them in accordance with the development of the rehabilitation exercises and achieving their goals. The researchers identified the foundations for developing the exercises, which were represented by the following points.

1. Determine flexibility exercises that work on the shoulder joint according to the anatomical aspects and the direction of the muscular action of the joint.
2. Gradual repetition.

3. Diversity of exercises.
4. Privacy.
5. The flexibility of the qualification curriculum and its suitability for practical application.
6. The degree of intensity in rehabilitation is proportional to the degree of flexibility of the shoulder joint, in terms of repetition and total rest periods.
7. The goal of the rehabilitation exercises is to qualify the injured players in the research sample and qualify them to return to training and tournaments again.
8. Stop continuing to perform the rehabilitation unit if the player feels tired or bored.
9. Taking into account security and safety factors.
10. The program contains (6) weeks with three daily rehabilitation units, making it (18) rehabilitation units.
11. The number of repetitions was (6-8) and the number of groups was (2), as the researchers determined the number of repetitions, the number of groups, and the rest times.
12. The researchers gave appropriate rest times for rehabilitation exercises.
13. The researchers used rest times between repetitions (30) seconds and between groups of (1-2) minutes.
14. The number of repetitions ranged from (3-5) repetitions for each exercise, and the groups ranged from (1-2).

Post-tests

After completing the “implementation of the qualifying exercises,” the post-tests were conducted on the control and experimental groups on (Friday), corresponding to 16/11/2023, at nine in the morning, in the same place and under the same conditions under which the pre-measurement was conducted.

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

Results and Discussion

Presentation and discussion of the results of the study regarding the variables investigated

Table 2: shows the arithmetic means, standard deviations, T-value calculated for the correlated samples, the significance level of the test, and the significance of the difference for the pre- and post-tests for the control group for the investigated variables

Variable	Pre-test		Post-test		T value	Level sig	Type sig
	Arithmetic mean	Standard deviation	Arithmetic mean	Standard deviation			
Upward bending	60.000	13.34	90.000	14.22	8.721	0.000	Sig
Backward extension	72.000	15.86	95.35	12.32	10.322	0.000	Sig
abducting outwards	82.000	11.21	96.000	12.06	7.881	0.000	Sig
adducting inwards	81.000	18.63	102.000	18.22	12.063	0.000	Sig

Discussing the results

It is clear from Table (2) that there are significant differences at a significance level of 0.05 between the averages of the pre- and post-measurements of the experimental group in the test measuring the range of motion of the shoulder joint with movements (upward bending, backward extension, abducting outwards, and adducting inwards), and in favor of the post-measurement. The researchers attributes the reason for this to the rehabilitation exercises, which It included joint flexibility exercises and muscle lengthening of the arm joints used by the researchers, which had an effective impact in developing the range of motion of the joints in the arm used by volleyball players, and this is what confirmed that "stretching exercises increase the range of motion. For the joints that the player needs to perform the required movements" (Hamdan and

Abdel Razzaq, 2001, 54) [1].

The researchers also attributes the improvement in the range of motion of the various shoulder movements to the effectiveness of the prepared rehabilitation curriculum and the great positive effect of the exercises used and to the method of performing the exercises used in the research, as these exercises worked to reduce the range of motion by increasing the range of motion of the joints working in the shoulder area, through Increasing the flexibility of the muscles working in the area, thus increasing the range of motion of the joint. Rehabilitation exercises increase muscle flexibility and thus increase the range of joint motion.

The researchers also attributes the reason for this improvement in flexibility to the rehabilitation exercises used in the research, which had an effective and clear effect in

improving the flexibility of the shoulder and elbow, and this was shown by the results of the post-tests, where the kinetic work of the shoulders increased from applying the exercises easily and comfortably without feeling pain, and the sample's commitment to the exercises during Applying the curriculum is the reason for the emergence of these results. The researchers believes that the importance of flexibility and its improvement is reflected in good performance in skills confirms that "it is possible for the rehabilitation program to bring about constant changes and adaptations in the quality of flexibility, especially if it exceeds a period of (6) weeks". (Al-Lami: 2010, 204) ^[2].

Rehabilitation is considered one of the most important and most effective means of movement in treating injuries, as it works to strengthen the weak muscles surrounding the part to be rehabilitated and the flexibility of the joints. It helps restore the muscles and joints to their functions in the shortest possible time. Flexibility is very important for the player because it will provide protection in the future if it is taken care of well, and he emphasizes. "If flexibility is available, injuries to muscles, ligaments, and cartilage are reduced "(Othman: 2018, 648) ^[3].

Conclusion and Recommendations

Conclusion

- The use of rehabilitation exercises has shown a positive effect in improving the range of motion of the shoulder joint in volleyball players
- The use of exercises prepared by the researchers and grading their intensity from easy to difficult had an effective role in accelerating the recovery process for players with shoulder joint injuries.

Recommendations

- Guidance for the proposed rehabilitation program under study in rehabilitating the shoulder joint injury (partial dislocation) to speed up the athletes' recovery and return to the stadiums.
- Commitment to the conditions and standards for moving between the qualifying stages of the rehabilitation program, as it includes taking into account individual differences and the security and safety factors it provides during the application of the program, and avoiding exposing the injured player to a physical load greater than his capacity.
- Conducting a compensatory preventive program for athletes to strengthen the muscles working on the shoulder joint.

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