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The effectiveness of rehabilitation session in improving functional efficiency of handball players with carpal tunnel syndrome

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Abstract
The current research aims to prepare a rehabilitation program for handball players with carpal tunnel syndrome, as well as to identify the effect of rehabilitation session on restoring functional efficiency after 4 weeks of applying rehabilitation session for athletes with carpal tunnel syndrome, as well as after 8 weeks. To achieve this goal, the researcher used the experimental method with a single group with a time series design. This design consists of three tests pre, intermediate, and post-tests. The researcher identified his research community as handball players in the clubs of Muthanna Governorate who suffer from carpal tunnel syndrome, numbering 5 players. These players were obtained by distributing questionnaire forms to the governorate clubs, governmental and private physical therapy centers, and specialized clinics. Then the researcher conducted a clinical examination to determine the degree of damage. After that applied pre-tests in research variables of functional efficiency extension, flexion, adduction, abduction as well as in strength. After that, the researcher started applying the first section on the damage, which lasted for 4 weeks, with 3 rehabilitation sessions. The intensity used in this section was 30-60% with positive stretching session. Depending on the patient's ability to perform session, which are appropriate to patient's ability to perform session. Then began applying the intermediate test, and then began applying the second part, which included resistance session only. This method is very effective to develop muscle endurance if the injured person lacks muscle endurance, by increasing the number of repetitions when moving from one session to another, which is appropriate with the injured person's ability and capacity to perform without damage, as the intensity used represents 60-100% for the injured player. Upon completion of the application of the second section, began to apply the post-tests. After obtaining the results, the researcher used the statistical program SPSS. Accordingly, concluded that the rehabilitation session prepared by the researcher have a positive effect in rehabilitating carpal tunnel syndrome damage for handball players, and that the period of 8 weeks is the ideal time period to obtain the best results for rehabilitating carpal tunnel syndrome damage for handball players.

Keywords: Rehabilitation session, functional efficiency, carpal tunnel syndrome

Introduction
The sports field is a fertile ground for various injuries, as injuries occur frequently during sports activities. This phenomenon requires the attention of all those working in this field , as it is one of the most important factors that force a player to stay away from sports competitions, as no sports field is free from the possibility of injuries occurring. Therefore, sports injuries have received great attention from sports communities, as they are considered a pathological condition, and its types and causes must be known, identified, and analyzed to arrive at the most appropriate methods for preventing them and how to treat them.
significant and noticeable increase in the number of sports damage recently; as a result of the high effort in sports activities that require performing athletic movements with high and medium intensity, and as a result of neglecting warm-up such as flexibility session, or the proper preparation of muscles to face the effort because the sudden stress on a specific part of the body, which may be greater than the endurance of tissues, is what leads to damage. Excessive physical pressure is considered a cause of damage and may occur in a fleeting moment and is usually the result of an error in application or an unexpected accident, or it may arise from a repeated damage to the same place or as a result of weak muscle strength.

Accordingly, injuries occur due to the technique in some activities, which requires the player to reach a high degree of warm-up before participating in competitions or training.
Many players suffer from injuries, especially carpal tunnel, which is considered one of the most common injuries affecting the nerves in the upper extremity.
As a result, scientists and researchers in the field of sports have recently become increasingly interested in immunology, as it deals with the various means by which the athlete's body can protect itself against various injuries during training or competitions.
Hence the importance of research in developing a proposed rehabilitation method for wrist joint muscle injuries, as these muscles are important in helping athletes perform, as the effectiveness of handball depends on the movement of this part and primarily on the safety and effectiveness of these muscles in terms of range of motion.

Research problem
The research problem lies in answering the following questions:
Do rehabilitation session play a role in rehabilitating carpal tunnel syndrome injuries in handball players?
Do rehabilitation session have a role in influencing the restoration of functional efficiency for handball players with carpal tunnel syndrome?
What changes occur in the restoration of functional efficiency of the wrist joint after four weeks of implementing the rehabilitation program?
What changes occur in the restoration of functional efficiency of the wrist joint after eight weeks of implementing the rehabilitation program?

Research objectives
Preparing a rehabilitation program for handball players suffering from carpal tunnel syndrome. To identify the effect of rehabilitation session on restoring functional efficiency after 4 weeks of applying rehabilitation session for athletes with carpal tunnel syndrome. To identify the effect of rehabilitation session on restoring functional efficiency after 8 weeks of applying rehabilitation session for athletes with carpal tunnel syndrome.

Research hypotheses
The rehabilitation program has a positive impact on the rehabilitation of carpal tunnel syndrome injuries in handball players. There are differences in the recovery of functional efficiency after 4 weeks of applying rehabilitation session for athletes with carpal tunnel syndrome. There are differences in functional recovery after 8 weeks of rehabilitation session for athletes with carpal tunnel syndrome.

Research areas
First: Human field: Handball players with carpal tunnel syndrome.
Second: Time period: from 9/20/2024 to 3/7/2025.
Third: Spatial area: Al-Zahour Hall in Al-Muthanna Governorate.

Definition of Terms
Carpal tunnel: It consists of the bones in the wrist, the ligaments that run around the base of the palm, and multiple tendons. The median nerve passes through the carpal tunnel to provide movement and sensation to the fingers.

Research Methodology
It is an attempt to control all the basic variables and factors except for one or more variables that the researcher changes with the aim of determining and measuring its scientific effect [1]. Since the nature of the research requires knowing the effect of a specific, the researcher used the experimental method with a design of a single group with a time series [2]. This design consists of three tests pre, intermediate, post. Figure 1. Illustrates this.

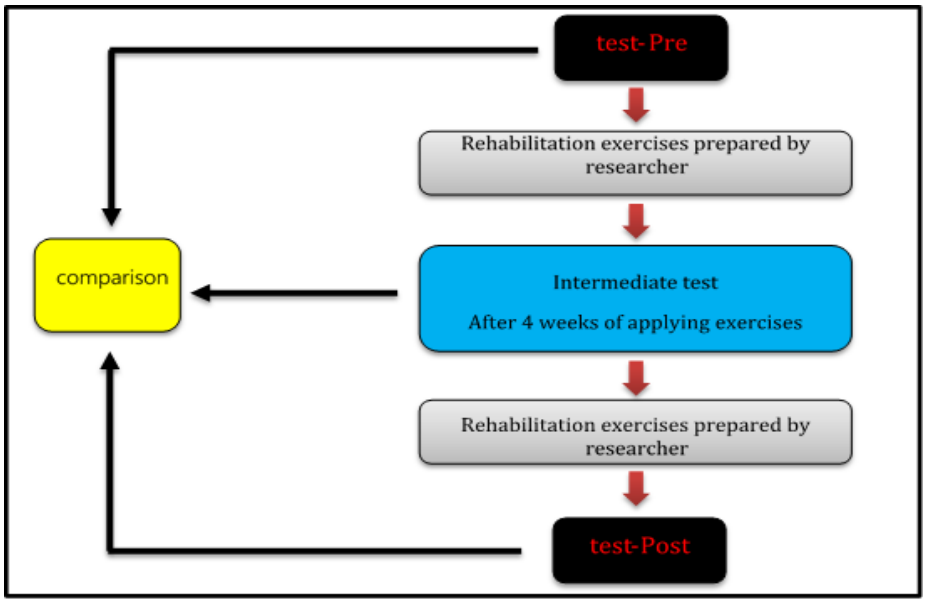


Fig 1: shows the experimental design.

1- Ahmed Ali Sadiq , Haider Balash Jabr : Exercises according to the pressure exerted on the feet and the length of the step and their effect on reducing the differences in the distance of the step before the hurdle for the ten hurdles and achieving the (110) m hurdles running event , 2023.

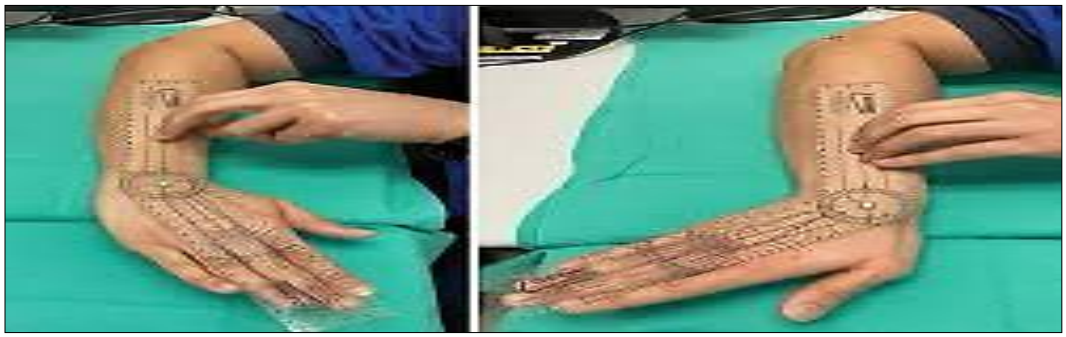
[2] -Muhammad Walid Al-Batsh and Farid Kamel Abu Zeina :Scientific Research Methods, Research Design and Statistical Analysis st1 ,ed ,.Al-Maysarah House for Publishing, Distribution and Printing ,2007 ,p. 278 .

3.2 Research community
The researcher identified his research community as handball players in the clubs of Muthanna Governorate who suffer from carpal tunnel syndrome, numbering 5 players. These players were obtained by distributing questionnaire forms to the clubs of the governorate, governmental and private physical therapy centers, and specialized clinics.

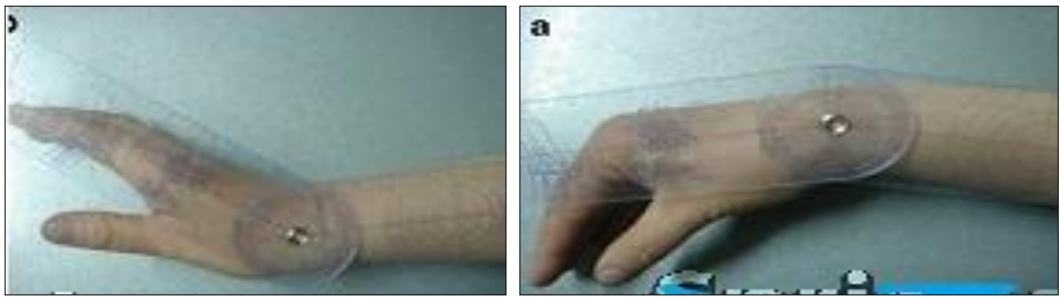
Research tools and means of obtaining information
The nature of the hypotheses is what controls the researcher's choice of research tools to solve the problem and achieve the hypotheses. Accordingly, the researcher used the range of motion and strength test as a basic means of collecting data. After scanning the sources and literature related to the current research, the researcher identified the tools, which are Stopwatch, Different weights, Handball, Gino Meter, Manometer.

Damage diagnosis
Magnetic resonance imaging (MRI) is used at beginning of damage and also after recovery because it is sufficient to discover the type of damage and the rate of recovery in the carpal tunnel syndrome damage. One of the most prominent reasons for using MRI is because such an damage may lead to a tear in the area of origin, so MRI is taken because it has an effective role in the process of accurate diagnosis. Through clinical examination and MRI, the type of damage was determined, which is of the moderate type.

Measurement description of research variables
First: Measuring wrist joint range of motion using a goniometer
The test subject stands in a standing position with the arm forward in the anatomical position so that it is facing the fixed part of the device. The device is then fixed by the researcher in front of the wrist and the test subject extends and flexes the wrist, and the range of motion is recorded using the device indicator.



View of hand adducted (A) View of hand abducted (B)



View of hand extending (C) View of hand bending (D)

Fig 2: Shows range of motion of wrist joint

The wrist has a natural movement of flexion, extension, abduction and adduction from the initial movement position (zero). There is a degree of rotation in the wrist that we cannot measure accurately.
A - Range of motion in extension (zero to 70˚)
B - Range of motion in flexor (0 to 80°)
C - Range of motion in adduction (zero to 30˚)
D - Range of motion in abduction (0 to 20°)

Second - Grip strength test: [3]
Equipment and tools: Manometer to measure grip strength
Performance specifications:
The examinee stands in a standing position with arms at the side of the body holding the device next to the body. The examinee presses the device with full force without bending the wrist joint. The measurement result, which is measured in kilograms and recorded by the device's indicator, is then recorded. The examinee is given three attempts, and the result of the best attempt is counted.

Fig 3: Shows strength tes

)[3] (https://m.aliexpress.com/item/32710656021.html?trace=wwwdetail2mobile sitedet New-Hand-Grip-Force-MeasurementPower-Strength-Meter-Home-exercises-Fitness .

Exploratory experiment

Scientific research experts pilot experiments for the tests used in research in order to obtain reliable and necessary results and information when conducting the main experiment, as well as to reach the best way to conduct the selected tests. The pilot experiment is “to reveal the ambiguous or missing links in the sequence of human thinking, which helps in analysis, connection, and accurate scientific interpretation, avoiding negatives, and adding scientific knowledge to new pillars when implementing the main experiment in the research” [4]. Accordingly, the researcher conducted a pilot study on 2 players suffering from carpal tunnel syndrome. This experiment was applied in Al-Zahour Hall in Al-Muthanna Governorate on 9/20/2024 at three o’clock in the afternoon, as the players were tested with functional efficiency variables.

The aim of conducting the pilot study is to examine several points, including

1. Ensure the validity of the tests, their applicability to the selected sample, and their responsiveness to test implementation.
2. Point out errors and obstacles in order to overcome them.
3. Training the members of the support team to carry out the tests, and their mastery of the validity of the tests and recording the results in a way that ensures the success of the educational process.
4. Viability of required capabilities in terms of suitability of designated locations for conducting the tests, as well as the availability of appropriate tools
5. Knowing the researcher's ability to conduct specific tests, and knowing the time required to conduct the tests.
6. Preparing requirements to maintain the health and safety

Pre-tests

The pre-tests were conducted for the research sample in Al-Muthanna Governorate. They were conducted on different dates due to the unavailability of the sample in groups, but they came one after the other, because the sample of people with carpal tunnel syndrome is not easy to obtain in one batch. However, the researcher established all the conditions related to time and place in order to benefit from them and apply them during the pre-test period, as well as to provide the same conditions in the intermediate and post-tests.

Qualification Program (First Section)

The rehabilitation session prepared by the researcher were applied to the injured players , at different times, because the injured players were not obtained in one period, as the rehabilitation session were applied in Al-Zohour Hall in Al-Muthanna Governorate. The researcher included the following when preparing the session

1. The duration of the first section of the rehabilitation session was 4 weeks.
2. Twelve weekly rehabilitation units, where there are three units each week.
3. Rehabilitation session were performed on Saturday, Monday, and Wednesday of each week.
4. Distribution of severity between weeks.
5. Progressing session from simple to complexThe goal of this is to return the injured area to its normal state in terms of strength and range of motion, “where it is necessary to provide rehabilitation session that strengthen the muscles and avoid using long session."
6. The first session were based on body weight, then adding weights when gradually increasing the intensity.
7. The first week included static strength session with static passive stretching session without equipment, for the purpose of strengthening the wrist joint. The second week of the first part of the main experiment included different session, as the researcher used body weight resistance session with moving stretching session to develop the joint’s range of motion. The rehabilitation session prepared by the researcher included internal and external movements of the wrist joint. As for the third and fourth weeks, the researcher used strength session using graded resistance which is one of the rehabilitation methods to develop strength for injured muscles through gradual intensity adding resistance by moving to each session, which provides appropriate support to the muscle by increasing strength without causing stress and damage to the joint or muscle, as the intensity used represents 30-60% with positive stretching session depending on the patient's ability to perform session, which are appropriate to the patient's ability to perform session.

Intermediate tests

After completing four weeks for each injured person, the researcher conducted the intermediate tests under the same conditions and capabilities as the pre-tests, i.e. in a consistent manner as in the pre-tests. The researcher was keen, as much as possible, to provide the same conditions in terms of place, time, tools, and support team as in the pre-test. The tests were administered in Al-Zohour Hall in Al-Muthanna Governorate at three o'clock in the afternoon. The purpose of this test is to ensure the extent of improvement and response of the injured players to the prepared rehabilitation session, in addition to monitoring the level of improvement of the community members in the degree and level of improvement of that damage, and knowing the changes that occurred in functional efficiency during this period. The researcher was keen to fix all variables related to the test, such as place, time, method of implementation, and sequence of tests in the pre-tests and to fix them as much as possible in order to control the preparation of the same and similar conditions when conducting the post-tests, as the intermediate tests were conducted.

Qualification Program (Section Two)

The second section of the qualifying session was implemented after the intermediate tests and included the following:

The duration of the rehabilitation session in the second section was 4 weeks, as the rehabilitation session were applied on the days Saturday, Monday, Wednesday of each week, and thus the number of rehabilitation units was 12 rehabilitation units at a rate of 3 units per week.

Distribution of severity between weeks

The second section included only resistance session. This method is very effective for developing the muscle’s endurance if the injured person lacks muscular endurance, by increasing the number of repetitions when moving from one

session to another. This is appropriate for the injured person's ability and capacity to perform without damage, as the intensity used represents 60-100% for the injured person.

Post-test

After completing four weeks of applying the second section for each patient, the researcher conducted the post-tests under the same conditions and capabilities as the pre-tests, i.e. in a manner identical to the pre-tests. They were examined by the specialist doctor and a clinical examination was conducted. After that, the researcher conducted the post-tests. The researcher was keen, as much as possible, to provide the same conditions in terms of place, time, tools, and support team as in the pre-test. The tests were applied in Al-Zahour Hall in Al-Muthanna Governorate at three o'clock in the afternoon.

Statistical methods

The researcher used the statistical program (SPSS 27) for statistical processing, as well as the program EXCEL by using following methods:

1. Mean
2. Standard deviation
3. (t) value for independent samples
4. (F) Analysis of Variance value for repeated measures
5. Least significant difference LSD

Results

Displaying results of search variables

Table 1: Shows the statistical description of the data in the pre-, mid-, and post-tests of the research variables

Variables		Unit of measurement	Pre-tests		Intermediate tests		Post-tests	
			M.	St.d	M.	St.d	M.	St.d
ROM	Extension	Degree	31.4	6.107	54.8	3,421	67.4	1.517
	Flexion	Degree	36.2	7,396	64.2	4,207	85.6	1.817
	Adduction	Degree	8.4	3,578	17.4	2.302	27.2	1.483
	Abduction	Degree	6.8	2,950	12.8	1.789	17.6	1.342
Strength		Kg.	9.8	2.588	18.8	2,168	23.6	1.949

Displays Table 1. Statistics descriptive values average and deviation standard for Pre, mid, and post-tests of research variables

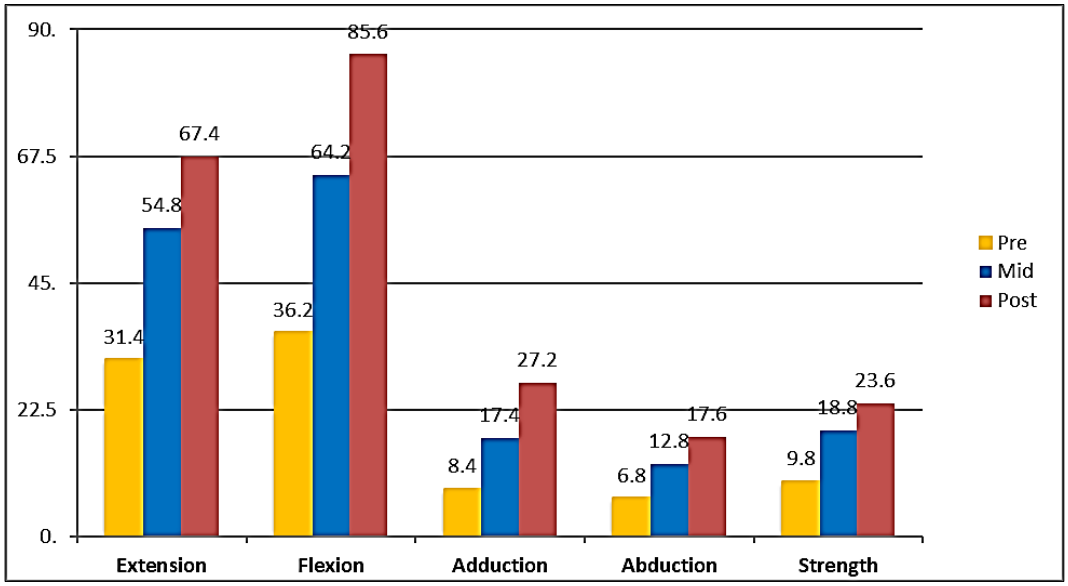


Fig 4: Shows means of research variables for the three tests

Table 2: Results Mauchly test for assessment Spherical tests the three research variables for measurements duplicate in the model

Variables	Mauchly's W	square Kai	DF	Sig.	Corrections		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
Extension	0.769	0.788	2	0.674	0.812	1,000	0.500
Flexion	0.352	3.131	2	0.209	0.209	1,000	0.500
Adduction	0.003	17,716	2	0.000	0.501	0.501	0.500
Abduction	0.422	2.587	2	0.274	0.634	0.794	0.500
Strength	0.628	1.395	2	0.498	0.729	1,000	0.500

Displays Table 2. Results a test Mauchly (*) for ball per from tests the three for measurements duplicate in model. All variables are not breach hypothesis spherical because value level significance greater from (0.05) so maybe that we promise spherical when look to Statistics F. and so it will be use rate F used usually, the adduction variable violates the hypothesis. spherical because value level significance less from (0.05) so maybe that we promise spherical when look to Greenhouse-Geisser F- statistics, Table 3. Shows that:

Table 3: analysis Contrast Between the three tests in the research variables

Variation source		Total variation	Freedom degree	Middle variation	(F) value	Sig.
Extension	Sphericity Assumed	3337.2	2	1688.6	136,027	0.000
Error	Sphericity Assumed	98,133	8	12,267		
Flexion	Sphericity Assumed	6137.2	2	3068.6	91,783	0.000
Error	Sphericity Assumed	267,467	8	33,433		
Adduction	Greenhouse-Geisser	884,113	2	882,929	51,603	0.000
Error	Greenhouse-Geisser	68,533	8	17,110		
Abduction	Sphericity Assumed	292.8	2	146.4	31,484	0.000
Error	Sphericity Assumed	37.2	8	4,650		
Strength	Sphericity Assumed	490.8	2	245.4	33,926	0.000
Error	Sphericity Assumed	57,867	8	7,233		

The table shows that the significance ratio values for F. test for repeated measurements were smaller than the error ratio (0.05), and this indicates the presence of significant differences between the three tests pre-test - intermediate - post-test. To know the direction of the difference in favor of any group, the researcher used the value of the least significant difference LSD among the three tests in the research variables.

Table 4: LSD test for comparisons of research variables for the three tests

Comparisons			Mean		Mean difference	St.d error	Sig. level	Sig. type
Extension	Pre	Mid.	31.4	54.8	23.4	2.135	0.000	Sig.
	Pre	Post	31.4	67.4	36	2.665	0.000	Sig.
	Mid.	Post	54.8	67.4	12.6	1.749	0.002	Sig.
Flexion	Pre	Mid.	36.2	64.2	28	4.604	0.004	Sig.
	Pre	Post	36.2	85.6	49.4	3.982	0.000	Sig.
	Mid.	Post	64.2	85.6	21.4	1.749	0.000	Sig.
Adduction	Pre	Mid.	8.4	17.4	9	2,470	0.022	Sig.
	Pre	Post	8.4	27.2	18.8	1.985	0.001	Sig.
	Mid.	Post	17.4	27.2	9.8	0.490	0.000	Sig.
Abduction	Pre	Mid.	6.8	12.8	6	0.837	0.002	Sig.
	Pre	Post	6.8	17.6	10.8	1.772	0.004	Sig.
	Mid.	Post	12.8	17.6	4.8	1.319	0.022	Sig.
Strength	Pre	Mid.	9.8	18.8	9	1.897	0.009	Sig.
	Pre	Post	9.8	23.6	13.8	1.985	0.002	Sig.
	Mid.	Post	18.8	23.6	4.8	1.068	0.011	Sig.

The table above shows that there are significant differences differencas among the three tests in favor of the post-tests.

Discussion

The results reached by the researcher indicate the presence of significant differences between the pre-, intermediate and post-tests in favor of the post-tests. The researcher attributes these differences to the effectiveness of the prepared rehabilitation session based on regular programmed training according to scientific foundations, which causes a group of biochemical responses, changes and adaptations to the body's various organs and systems, and what the program contained in terms of gradual physical loads and following load formations in a manner consistent with the rules and principles of sports training, such as ease, gradualism, harmony, adaptation, specificity and diversity, leading to the injured athlete's return to normal condition. The program also contained session to raise the athlete's ability and rehabilitate him well in order to return to practicing his sports activity.

researcher believes that during the implementation of the program with various rehabilitation methods, on the foundations and principles of sports training, it took into account the gradual increase in the components of the training load , through therapeutic methods applied in the prepared rehabilitation program , as these methods were characterized by gradual increase in the intensity used, in addition to increasing the repetitions during the single training unit for the third and fourth weeks, and great importance in developing the maximum strength of the deltoid muscle, as the application was with gradual intensities from top to bottom , which is a very appropriate method for developing strength through interest in muscle strength training , as the muscles surrounding the wrist joint were strengthened, considering that they are the muscles For the shoulder joint , it is necessary that the muscle tone and muscle strength of the injured limb be somewhat close to the level of muscle tone and strength of the corresponding limb . Therefore, the program includes a variety of rehabilitation session aimed at developing the strength of the muscle groups working in the movement of the joint, as well as session to strengthen the muscle.

The deltoid muscle itself, and that the rehabilitation program contains some resistance training using weights and without weights and others , flexibility and stretching , works to strengthen the joint and increase its strength and flexibility and helps in healing and thus increasing the muscular strength of the deltoid muscle, and this is consistent with the study (Walid Muhammad Al-Damardash 2006) from that session kinetics qualification and use means various rehabilitation contribute in more power muscular for the affected part to be closer what is to party healthy.

Here, the researcher confirms the role of rehabilitation session and performing them in various ways that played a positive role in rehabilitating the deltoid muscle that suffered a partial tear. These are therapeutic session that played a positive role in restoring the level of that muscle to its natural state of strength, endurance, and widening its range of motion.

Stretching session was also found achieved results high in proportion improvement which given evidence on importance use it in rehabilitation programs and innovation many from session that fit with every damage and its severity, which he provides a lot from the time and effort in practical returning the injured part to its normal position what confirms it (Abu Al-Ula slave Al-Fattah and represents accreditation on a job receptors sensory importance big on the increase range the kinetic for the joint as that it raise from level agree the job muscular for groups working muscle attic, and on that then more range the kinetic using training that depends basically on receptor work sensory it works on benefit from capabilities physical different in development speed and power and compatibility that requires it performance physical.

This is consistent with what was stated by (Muhannad Al-Bashtawi and Ahmed Al-Khoja 2010) that it is necessary to link stretching session with strength session to ensure balanced development of the motor and muscular system and avoid developing only one side.

The researcher believes it is necessary to link rehabilitation session with the use of different resistances during sports rehabilitation, and the work must be linked to the different movements of the injured part gradually and to appropriate ranges. Here, the researcher agrees with what was indicated by (Hamed 2000) [16] that what happens in the central fixed work makes the muscle work at all angles of muscle work, but the amount of muscle tension differs according to the angles due to the number of muscle fibers participating. also, the more the resistance increases, the more muscle tension occurs resulting from the participation of the largest number of muscle fibers. continuing training generates neural adaptations, and these adaptations are initially neuromuscular compatibility, i.e., the regulation of nerve impulses, and may develop after a while to become cellular adaptations that lead to an increase in the size of the motor unit. this is what makes the functional ability of the motor unit to innervate the largest number of muscle fibers or the possibility of recruiting the largest number of motor units, which results in an increase in strength.

Conclusion

The rehabilitation session prepared by the researcher have a positive effect in the rehabilitation of carpal tunnel syndrome injuries in handball players. The period of (8 weeks) is the ideal period of time to obtain the best results for rehabilitation of carpal tunnel syndrome damage for handball players.

Recommendation

The researcher recommends using the session he prepared because of their positive effect in rehabilitating carpal tunnel syndrome injuries in handball players.

The researcher recommends the necessity of detecting the damage, its location, size and complications, using magnetic resonance imaging to develop direct and necessary solutions to the damage, reduce time and achieve effective work. The researcher recommends the necessity of rehabilitation for an appropriate period and continuing rehabilitation until the injured part returns to work and optimal functional performance. The researcher recommends adopting range of motion and strength as a means of diagnosing muscle damage cases, as they are important and accurate diagnostic methods. The researcher recommends conducting intermediate rehabilitation tests to determine the extent of the injured's response to the session prepared in the curriculum and standing, and the level of improvement of community members in the degree and level of improvement of that damage. Conduct research using the same session prepared by the researcher, accompanied by a nutritional supplement containing all the vitamins and minerals the body needs.

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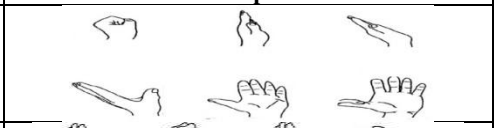
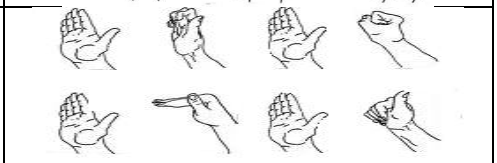
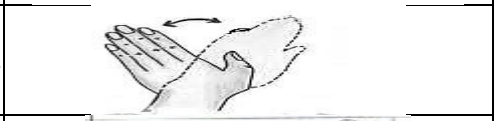
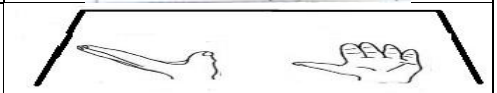
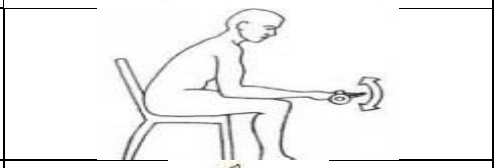
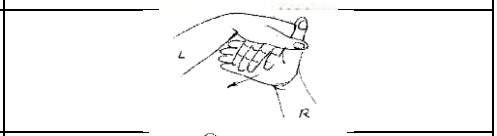
Appendix

Appendix 1: Experiment dates

	Pre history	Section 1 Application	Middle Ages	Section 2 Application	History of the dimension
The first player	09/25/2024	09/28/2024 And until 10/23/2024	10/24/2024	10/26/2024 And until 11/20/2024	11/21/2024
The second player	09/25/2024	09/28/2024 And until 10/23/2024	10/24/2024	10/26/2024 And until 11/20/2024	11/21/2024
The third player	01/10/2024	05/10/2024 And until 6/11/2024	07/11/2024	09/11/2024 And until 4/12/2024	05/12/2024
The fourth player	03/11/2024	09/11/2024 And until 4/12/2024	05/12/2024	7/12/204 And until 1/1/2025	02/01/2025
The fifth player	12/12/2024	12/14/2024 And until 8/1/2025	09/01/2025	11/01/2025 And until 5/2/2025	06/02/2025

Appendix 2: Exercise Form

No.	Exercise	shape
1	Sitting. Join the fingers. Extend the fingers together. Then extend the wrist and fingers. Then extend the wrist, fingers, and thumb. Then move the palm upwards in the same position. Then extend the thumb with the other hand.	
2	Extend the thumb away from the fingers. Bring the phalanges together. Then form a closed fist. Extend the fingers at a 90-degree angle. Then close them on the palm of the hand.	
3	Sitting. Resting the forearm on a table. Rotate the palm right and left outside the table.	
4	Standing. Raise the forearm at a 90 ° angle, then pronate and flatten the forearm.	
5	Sitting. Hands on the table. Move the thumb outward once and the palm back again.	
6	Sitting on a chair. Rest your elbow at a 90- degree angle on a flat surface. Grasp the fingers on the edge and turn the arm until the thumb points upwards, then bend the wrist joint downwards.	
7	Standing. Bend your wrist with the help of your other hand.	
8	Standing. Extend the wrist with the help of the other hand.	
9	Standing. Move the hand towards the radius bone with the help of the other hand.	
10	Standing Move the hand towards the ulna bone with the help of the other hand.