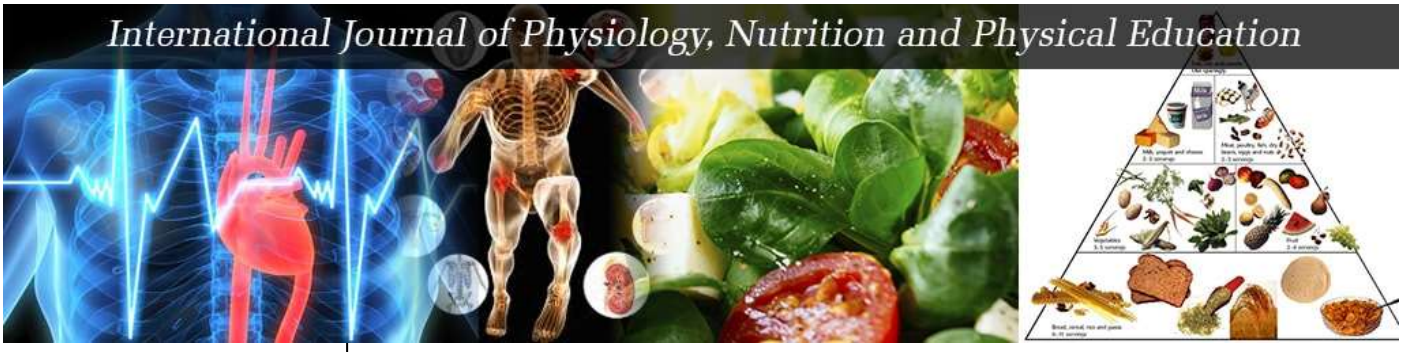

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An analytical study of the most common sports injuries and their causes for advanced weightlifters in the snatch and jerk phases

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Abstract
This study aimed to identify the most common types of sports injuries in weightlifting quadrants, the advanced category in the two phases (snatch and jerk), in addition to knowing the most common injuries, the causes of their occurrence, the anatomical sites most susceptible to injury, the time of the injury in (training or tournaments) and which lifts (snatching, The study sample consisted of (20) quarters from the category of applicants from Badra Club for Weightlifting, where they were selected In an intentional way, the researcher used a special form to collect data and the following results were reached. The most common injuries are in the snatching lift, which is the ruptures of the ligaments surrounding the joints, and the most anatomical body sites exposed to sports injuries in the lifters were in the upper limb area in the wrist and fingers area, followed by the shoulder joint The lowest is the lower extremity area, and that the highest rate of injuries sustained by lifters during the training period, and that the most common cause of sports injuries is overheating. The researcher recommended giving preventive exercises within training programs aimed at strengthening the most vulnerable part of the injury, and the need to pay attention to a good and appropriate warm-up before training and competitions for all joints and muscles working on them, and to follow-up on them by the trainer, guide them and take the necessary measures to avoid the lifters being exposed to injuries, and the trainer should be chosen Scientifically qualified for training and to be aware and familiar with the science of injuries.

Keywords: Sports injuries, Olympic phases, snatch and jerk

Introduction
The world has witnessed tremendous development in various sports disciplines, and the most important of these developments is the development in the field of sports medicine, which has undergone many scientific studies for the preventive and therapeutic aspects. The development of scientific interest and various research in the field of sports injuries, their prevention and treatment, because prevention is better than cure. Despite this, sports injuries still occur in varying degrees between these games, as weightlifting is one of the sports in which injuries abound, whether in competitions or during training. This may stop the weightlifter from practicing the activity, and may keep him away from his activity, in addition to many complications that hinder the course of the training process and the related changes and physiological effects on the weightlifter, as sports injuries are one of the biggest dangers facing weightlifters, and advanced sciences have become Associated with the sports field seeks to reduce sports injuries as much as possible, because of their negative effects on the lifters and the results of the tournaments, in addition to the cost of treating injuries that may exceed the financial capacity of many lifters and limit their sporting achievements. And (Ghazali Abdel Qader *et al*., 2020, p. 49) [1] emphasized, "Sports injuries are considered one of the most important factors that lead to the exclusion of athletes and their isolation from regular sports training or participation in competitions. It is also considered one of the most important problems facing workers in the sports field. It is necessary to identify the factors that help the emergence of sports injuries and to know their causes and places of occurrence. (Sami'a Khalil, 2002, p. 23) [10] and (Qadir *et al*., 2017, p. 77) confirm that studying injuries is one of the important ways to develop and prevent sports on the one hand, and to guide the coach to take correct and early measures to protect the player from serious complications that may

prevent him from continuing. His activity in the event of injury from the other hand, and confirms (Sami'a Khalil, 2004, p. 23) [11] that studying injuries is one of the important ways to develop sports and prevent them on the one hand, and to guide the coach to take the correct and early measures to protect the player from serious complications that may prevent him from continuing his activity in the event of an injury on the other hand. The researcher believes that the occurrence of sports injury during training or tournaments Lifting weights in any part of the body is one of the biggest obstacles for weightlifters and disrupting their practical and athletic lives, which causes suffering for them and loss of fitness, which leads to a low level of athleticism for a quadriplegic, and the possibility of recurrence of injury even after treatment.

Research problem: The occurrence and spread of sports injuries among the advanced weightlifters is one of the important problems that limit their regularity in training programs or participation in sports tournaments and the loss of their efforts. As well as its negative impact on the psychological side of the quadriplegic and the consequent financial burdens spent on treatment and rehabilitation. And through the scientific experience of the researcher in the rehabilitation of sports injuries and a specialist in the sport of weightlifting And by looking at many studies and references that dealt with sports injuries, the researcher noticed the existence of injuries suffered by lifters, and through consultation with the specialists, the researcher concluded the disparity in points of view about the numbers of injuries and their places of occurrence in addition to the reasons for their occurrence, some of them attributed this to the lack of sufficient warm-up Some of them attributed it to non-compliance with the rules of safety and training For these and other reasons, The researcher decided to carry out this study and try to find solutions to reduce or limit the spread of injuries as much as possible, by knowing the causes and circumstances in which they occur, in order to work on raising the level of the quadrant in order to achieve better results.

Objectives of the study

This study aimed to identify

1. Identify the most common injuries among advanced weightlifters.
2. Identify the most vulnerable anatomical sites to injury.
3. Identify the causes of injury.
4. Identify the time of the injury (training or tournaments).
5. Identify which Olympic lifts (the snatch or the jerk) in which the injury occurs more often.

Study question

1. What are the most common injuries among advanced weightlifters?
2. What are the most vulnerable anatomical sites to injury?
3. What are the reasons for the occurrence of injury in the quadruple weightlifting category of advanced?
4. What is it the times when the injury occurred (during training or tournaments)?
5. What are the Olympic lifts (snatch or jerk) in which the injury occurs more often?

Fields of study

Human sphere: (20 quadrants) the category of applicants from Badra Weightlifting Club.

- Time range: the period from 5/4/2022 to 5/6/2022
- Spatial field: the halls designated for quadruple weightlifting training for the advanced category.

Research methodology and field procedures

- **Research methodology:** The researcher used the descriptive survey method due to its suitability to the nature of the study objectives.
- **Research community:** The study sample included (20). A quadrant from the category of applicants from the Badra Weightlifting Club, and they were chosen by the intentional method.

Steps to conduct the study

The researcher carried out the following research procedures

- Preparing the questionnaire for this study by the researcher and presenting it to a group of experts and specialists in this field to determine its validity. And then print it and make sure of its integrity before distributing it to the lifters.
- Conducting a reference survey on scientific research, studies and references, and obtaining the opinion of experts in the field of rehabilitation and sports injuries, as well as specialists in weightlifting.
- Distribute the questionnaire to the lifters and give them a full explanation of the questionnaire and how to answer it.
- Statistical means: The researcher used the statistical bag (Spss). Ready-made (Qais Naji, complete comprehensive, 1988: 50) [9].

Results and Discussion

Table 1: Shows the most common types of sports injuries in the advanced weightlifting quad (n=20)

The number	Arrangement	Type of injury	Repetition	Percentage%
1	4	Cramp	37	20.2
2	5	Abrasions and infections	32	17.5
3	8	Muscular tear	25	13.7
4	9	Tendon rupture	21	11.5
5	6	Contortions	15	8.2
6	7	dislocation	14	7.6
7	1	Ligaments torn	13	7.1
8	3	Muscle bruises	9	4.9
9	10	Bone bruises	6	3.3
10	11	Nerve trauma	5	2.7
11	2	Fractions	4	2.2
The total			181	100%

Table (2) indicates the most common injuries among advanced weightlifters, where the muscle strain injury had the highest percentage of (20.2%), followed by abrasions and infections with a percentage of (17.5%), while the muscle tear injury had a percentage of (13.7%), while the percentage of tendon rupture was (11.5%), while the percentage of sprains was (8.2%), and the percentage of dislocation was (7.6%), while the ligaments were ruptured. The percentage of injuries reached (7.1%), while the percentage of muscle trauma was (4.9%), while the percentage of nerve injuries was (2.7%), while the percentage of fractures was (2.2%). The researcher attributes this to the lack of sufficient muscle warm-up before carrying out the physical effort by the lifters, and the warm-up that is not appropriate for the nature of the activity, when the warm-up is neglected for the muscle group that performs the main physical effort, muscle weakness and imbalance between the opposite muscle group, and rapid and sudden elongation in excess of the maximum The extent of the ability of the muscle to elongate, and injury often occurs for this reason in the muscles of the lower back and shoulders, as well as carrying weights greater than the ability of the muscle, as well as the severe shortage of water and salts that can lead to muscle tension.

(Mahmoud Al-Wedyan *et al*., 2019, p. 34) [5] indicate that "muscle strain is the most common injury, and that the muscles of the lower back and leg are the most affected areas of the body, and that wrong warm-up is the most common cause of injury." This result agreed with the study (Nada Alaa, 2014) [8], which stated that The most common injury was muscle strain, with a rate of f (77%).

Table 2: Shows the anatomical sites most susceptible to injury in an advanced quadruple weightlifter (n=20)

The number	Arrangement	Type of injury	Repetition	Percentage%
1	1	Trunk area	36	14.57
2	2	Hip joint	31	12.55
3	3	Palmar phalanges	29	11.74
4	4	Wrist joint	27	10.93
5	5	Shoulder joint	25	10.12
6	6	Elbow joint	20	8.09
7	7	Upper arm	18	7.28
8	8	Forearm area;	15	6.07
9	9	Ankle joint	12	4.85
10	10	Leg area	10	4.04
11	11	Thigh area	9	3.64
12	12	The knee joint	8	3.23
13	13	Insteps	7	2.83
The total			247	100%

Table (2) indicates the most vulnerable anatomical sites to injury among advanced weightlifters, where the torso region, hip joint, phalanges of the palm, wrist joint, shoulder joint, elbow joint, humerus region and forearm region had the highest percentage, reaching respectively (14.57%, 12.55%).%, 11.74%, 10.93%, 10.12%, 8.09%, 7.28%, 6.07%). While the ankle joint, the leg region, the thigh region, the knee joint and the insteps of the foot got the lowest percentages, which were respectively (4.85%, 4.04%, 3.64%, 3.23%, 2.83%).

The researcher attributes this to the great effort on these muscles, specifically the torso, the hip joint, the phalanges of the palm and the shoulder joint, as a result of doing a great physical effort by lifting weights and weights and repeating that more than once during training, because the effort is at its highest level during training, it has a role In the occurrence of such injuries, the researcher also attributes this result to the lack of experience of the lifters in the prevention of sports injury, as there is no prevention program during the training program aimed at introducing the lifters to the mechanics of the occurrence of sports injury, and the injuries of the trunk area are the most common among joint injuries, because The trunk is one of the most complex joints in the body, and the injury is often a spasm or lower back pain.

These results agreed with the study of (Mahmoud Valleys, Nabil Al- Atoum, 2019) [5] and that the most anatomical area susceptible to injury was the wrist area, and with the results of a study (Hassan Al-Dhibat, 2016) [3], where its results showed that the torso area is the most susceptible area to sports injury.

Table (3) indicates the most common causes of sports injuries in weightlifting among advanced weightlifters. Paragraph (1), which states that one of the causes of sports injuries is not a good warm-up during training, got the highest percentage of (12.88%), followed by paragraph No. (2, 3, 4, 5, 6, 7, 8, 9, 10), where The percentage, respectively, was (11.86%, 11.52%, 9.49%, 7.45%, 6.44%, 5.76%, 5.08%, 4.06%, 4.06%), while paragraph No. (11, 12, 13, 14, 15, 16), 17, 18, and 19 (the lowest percentage, respectively) 3.72%, 3.05%, 2.71%, 2.71%, 2.37%, 2.03%, 1.69%, 1.69%, 1.35%. The researcher attributes this to Lack of a good warm-up during training and the difficulty of rationing training loads to suit the characteristics of all lifters, as well as the lack of gradual increase in the exercise load during the training units, and the invalidity of the sports equipment used in training. This is consistent with the study and this is consistent with the study (Majid and Khuila, 1997) [6], where the most common cause of injuries was lack of warm -up. the good.This result agreed with the study of (Nada, 2014) [8] and that the most common cause of injury among students was lack of sufficient warm-up, and this result also agreed with the study of (Al-Zaghilat, 2012) [7] regarding the most important causes of injuries, which were the lack of adequate provision of tools for training and competitions, in addition to the agreement of these The result with the result of the study (Macgregor, 2003) [4] and the wrong practice of the rules of the game.

Table 3: Explains the most common causes of sports injuries in weightlifting among advanced lifters (n = 20)

Paragraphs number	Cause of injury	Repetition	Percentage%
1	Not warming up well during training	38	12.88
2	Not being restricted to a clear training program	35	11.86
3	Non-compliance with security and safety rules	34	11.52
4	Lack of good behaviour of the lifters (lack of attention, haste, violation of the rules of the game)	28	9.49
5	Poor technical skill numbers	22	7.45
6	Lack of familiarity with the science of sports injuries, the causes of their occurrence and ways to prevent them	19	6.44
7	Not relaxing well after exercise	17	5.76
8	Not doing comprehensive periodic medical examinations	15	5.08
9	Not being restricted to a healthy diet program	12	4.06
10	Do not gradually increase the exercise load	12	4.06
11	Not using sports rehabilitation means (massage, sauna) after training	11	3.72
12	The absence of the coach's guidance at times to the player and his awareness	9	3.05
13	Continue training when the injury occurs	8	2.71
14	Invalid sports equipment used	8	2.71
15	Not giving enough rest between and after exercises	7	2.37
16	Allow the player to return to training before fully recovered	6	2.03
17	Incorrect timing for training and matches	5	1.69
18	Poor psychological preparation	5	1.69
19	Inadequate provision of tools and equipment for training.	4	1.35
The total		295	100%

Table 4: Shows the time of injury in the sport of weightlifting for advanced lifters

The time of the injury	Repetition	Percentage%
During training	78	63.93
During tournaments	44	36.06
The total	122	100%

It is clear from the table (4) The sports injuries in the sport of weightlifting, most of them occur during the training period, as the percentage reached (63.93%), with a frequency of (78), and the injuries that occur during the championships, the percentage reached (36.06), and with a frequency of (44), and the researcher can attribute the reason to the lack of Taking care of the means of warming up or increasing the number of times of training for competitions, and this increases the incidence and spread of injuries, as well as errors related to sports training, and this is consistent with what (Majid) indicated and Khwila, 1997) [6].

Table 5: Shows the Olympic lifts (snatch or jerk) in the sport of weightlifting, in which injury occurs more often

Olympic lift	Repetition	Percentage%
snatch	67	56.30
jerk	52	43.69
the total	119	100%

It is clear from the table (5) The sports injuries in the sport of weightlifting, most of them occur in the snatch raise, where the percentage reached (56.30%), with (67) repetitions, and the injuries that occur during the performance of the jerk raise reached a percentage (43.69) and with (52) repetitions. The researcher can attribute the reason To the difficulty and complexity of the snatch skill technique, as well as to the technical performance situation from the position of extracting the weight to the rise and the final position, which leads to an excessive load on the torso and the shoulder joint, as well as the lower extremities, compared to the deadlift, in which a quadrant is allowed to perform it into two parts, which is the lift to the chest (Clean) and the second section (Jerk), in which the weightlifter is able to control parts of the body, unlike the snatch lift, which is performed in one movement, and this increases the incidence and spread of injuries, as well as errors related to sports training, and this is consistent with what (Majid) indicated. and Khwila, 1997) [6].

Conclusions

1. The most common injuries among advanced lifters are muscle strains and abrasions, and the least of them are fractures.
2. The locations of the body parts most vulnerable to injuries are the upper extremities, followed by the lower extremities, and the neck and head are the least.
3. The most common cause of injuries is the lack of a good warm-up, and the least is the lack of sufficient tools and equipment for training and matches.
4. That most sports injuries occur during the training period.
5. Most of the sports injuries in the weightlifting event occur in the snatch.

Recommendations

1. Giving preventive exercises within training programs aimed at strengthening the parts except the most vulnerable to injury.
2. Pay attention to a good and appropriate warm-up for all working muscles before training and competitions.
3. Take the necessary actions and measures to avoid exposure to weightlifters for injuries.
4. Choosing a scientifically qualified trainer for training and to be aware of the science of injuries.

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Appendix (1)

Questionnaire questions

For the most common sports injuries and the causes of their occurrence in quadruple weightlifters, the advanced category, in the snatch and jerky lifts

Personal data

Except the name:

Training age:

Category:

Weight:

Height:

1. Number of training unit hours:
2. Number of training times per week:
3. Have you been injured:
4. In which part did you get injured:
5. The reason for your injury:
6. Were you injured in training or in tournaments?
7. In which lift (snatch or jerk) did you get injured:

Telephone number: