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Measuring the rate of recurring injuries among young volleyball players

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ABSTRACT

The purpose of the research was to measure the rate of recurrent injuries among youth volleyball players, and to identify the types of common injuries among young players, and the nature of the injury (muscular, joint, and bone), **and** the descriptive researcher used the analytical method as it is the most appropriate approach to address the research problem, and the research population was selected by the deliberate method, which are youth volleyball players in Diyala province divided into a group of clubs, and the research sample was selected randomly, which are the injured players in volleyball clubs (20) The researcher found that the highest percentage of injuries was concentrated in the Salamiyat area, with a percentage of 40.47%, which indicates that the fingers of the hand are one of the most susceptible parts of the upper limb to injury among young volleyball players, and wrist injuries came in second place with 22.61%, followed by elbow and shoulder injuries in similar proportions (19.05% and 17.86% respectively), which reflects a wide distribution of injuries across the joints of the upper limb as a result of the nature of repetitive skills in the game, and it was found that the most common type of injury is dislocation, with a total of (36) injuries, followed by sprains (28 injuries), while fractures recorded the lowest number (20 injuries), and the researcher recommends the need to design special preventive programs aimed at protecting the joints of the fingers, due to the high rate of injuries to the joints, including strengthening the muscles of the hand, balance and motor control exercises, and emphasize the importance of training players on the correct playing techniques, especially when receiving the ball and smashing movements, to reduce the stress of the wrist and shoulder joints.

1. Introduction:

Sports injuries are a common phenomenon facing athletes of all levels, and they represent a major challenge for athletes, coaches, and medical devices. It is even more important to study recurrent injuries in young people, as they are going through a stage of growth and physical development that makes them more susceptible to injury compared to other age groups. Volleyball is a sport that requires high physical exertion and repetition in motor performance, which increases the likelihood of injury, especially in the joints and muscles, especially in the shoulder, knee and ankle area (Reeser et al., 2006).

Recurrence of injuries not only affects athletic performance, but can lead to long-term physical and psychological complications, such as low self-confidence and fear of future participation in competitions (Jacobsson et al., 2013). The literature indicates that the lack of prevention programs and the absence of accurate medical follow-up may contribute to the recurrence of injuries, especially in non-professional age groups, such as young players (Bahr & Krosshaug, 2005)). If players aspire to achieve continuous progress in their sport over a period of five years, this requires the coach to adopt effective training methods based on safe and gradual performance, in addition to being keen to avoid injuries, especially minor ones, as they have a cumulative impact that may hinder the development of the sport. Adopting an integrated preventive approach contributes to the sustainability of performance and keeps athletes safe throughout their careers.

No matter how minor the degree of injury to which the player is exposed, it should not be ignored or complied in dealing with it, as negligence in the treatment of minor injuries may lead to the worsening of the condition and its development into a chronic or serious injury, which may sometimes force the athlete to stop practicing sports activity, whether temporarily or permanently. From this point of view, the importance of research in monitoring and analyzing recurrent injuries in the sport of handball, and identifying their types, areas of occurrence in the body, and the leading factors with the aim of laying the scientific foundations to prevent them and reduce their negative effects on the performance of athletes and their continuity in playing the game.

This study aims to analyze and determine the frequency of injuries among young volleyball players, focusing on the nature of common injuries, where they occur, and the factors that contribute to their recurrence, which contributes to providing recommendations based on scientific foundations that help improve the safety of players and sustain their participation in sports activity.

Research Problem

Recurrent injuries are one of the fundamental problems facing young players in volleyball, as they have negative repercussions on the continuity of sports practice, as well as their direct impact on the technical and physical level of players. Despite the remarkable progress in training and awareness programs concerned with injury prevention, the rates of recurring injuries continue to record alarming percentages, which is attributed to a number of factors, most notably the low level of awareness of preventive measures and the incomplete physical development of this group. The pressure of training programs and competitions, as well as the lack of continuous medical support and therapeutic monitoring.

The problem is further exacerbated if minor injuries are neglected or treated unscientifically, leading to their development into chronic injuries that may hinder the player's future participation and may even lead him to stop playing the game permanently. In light of this, there is a need for a systematic study that seeks to measure the rate of recurrent injuries among young volleyball players, with a focus on classifying these injuries, determining their anatomical locations, and analyzing the causes and factors associated with their occurrence and recurrence. This study aims to provide those interested in the field of sports with quantitative and qualitative indicators that contribute to enhancing preventive measures, developing training plans, and supporting medical decisions related to maintaining the physical safety of players in this vital age group.

Research Objectives:

- Measuring the rate of recurrent injuries among youth volleyball players.
- Identify the types of injuries common among young players, and the nature of the injury (muscular, joint, and bone)

2- Research methodology and field procedures:

2-1 Research Methodology:

The descriptive researcher used the analytical method as it is the most appropriate method to address the research problem.

2.2 The research population and its sample:

The research population was selected by the deliberate method, which are youth volleyball players in Diyala province divided into a group of clubs, and the research sample was selected randomly, which are the injured players in volleyball clubs, which are (20) players, and Table (1) shows the distribution of the research sample members.

Table (1)

The members of the research sample show

Sample members (infected)	Number of players	Club	t
4	12	Habhab Club	1.

5	14	Al , Khalis Club	2.
3	12	Shahrban Club	3.
4	12	Baladruz Club	4.
4	14	Mesopotamian Club	5.
20	64	Total	

2-3 Means of Collecting Information, Devices and Tools Used in Research:

2.3.1 Means of collecting information:

- Arab and foreign sources.
- International Internet Information Network.
- Testing and measurement.
- Note.

2.3.2 Devices and tools used in research:

- A video camera of Chinese origin.
- Photography camera type (Nikone D6300).
- An American-origin Aisar laptop.
- Weighing device.
- Pressure gauge.
- Electronic stopwatch.
- Thermometer.

2.4 Field Research Procedures:

The researcher designed an information form on sports injuries through which the injured players were interviewed, as well as contacting the coaches and administrative bodies in the club and informing them of the need to refer the injured players to the Sports Medicine Center in the governorate to conduct medical examinations on them and treat them individually to fill out the information form, which includes three axes that have been prepared before (Owaid: 2005: 90-91-92).

The first axis: It includes personal information about the injured person and contains (8) paragraphs.

The second axis: It includes information about the injury and contains (5) paragraphs.

The third axis: It includes information about the examination of the infection and contains (4) paragraphs.

2-5 Exploratory Experience:

The survey experiment was conducted on Monday, 11/11/2024, where the researcher applied it to a sample of ten infected players from outside the main sample of the research, using the form prepared for the purpose of data collection. Each case of injury was referred to the specialist doctor for clinical examination, in order to verify the accuracy of the information provided by the injured player, as well as to ensure the comprehensiveness of the form and its ability to provide all the required data. This step aims to evaluate the effectiveness of the research tool and

ensure the consistency of its data with a clinical medical diagnosis, in preparation for its adoption in the main application of the study.

2.6 Main Experience:

The main experiment began on Monday, 18/11/2024, and lasted for five consecutive days, where the researcher applied the research variables to the basic sample of youth players in volleyball, within the realistic training environment of the clubs included in the study. The procedures included the implementation of field steps to collect data related to recurrent injuries, with a focus on characterizing their nature, identifying their places of occurrence, and analyzing the factors contributing to their recurrence.

On the first day, the researcher gave the participants a detailed explanation about the objectives of the study, the importance of their participation, and ensuring the confidentiality of the information provided. This was followed by the distribution of data collection forms that were prepared based on the results of the previous survey experiment, which included axes related to the type of injury, the timing of its occurrence, the number of recurrence, its impact on the performance level, and the extent to which appropriate medical care was obtained. It was emphasized that the form should be filled out in cooperation between the player and the coach, and with the support of the specialized doctor, if any, to ensure the accuracy and accuracy of the data.

In the next stage, players who reported current or previous injuries underwent a thorough clinical examination, in coordination with a sports medicine specialist. This examination was conducted to verify the credibility of the information on the forms, and to document the details of the injury accurately in terms of its location, severity, and frequency, taking into account individual differences between the players.

After completing the data collection procedures, the researcher began the process of classifying and classifying according to the variables of the type of injury, its severity, and its location, using organized tables that allow the results to analyze the results statistically accurately. The recurring injuries were also linked to the individual characteristics of the players, such as the number of years of experience, the unit of training load, and the technical location within the team, which enables the extraction of accurate scientific indicators that contribute to achieving the research goals.

2.7 Statistical Methods:

The researcher used the statistical bag (SPSS) to extract the results and process the data statistically.

3. Presentation, analysis and discussion of the results:

3-1 Presenting the results of the number of recurrent infections among the members of the research sample:

Table (2)
Shows the number of infections and the percentage of the research sample members

Significance	K2	Total	Joints				Type of injury
			Peaces	Wrist	Annex	Shoulder	
Moral	20.46	28	9	6	9	4	buckling
		20	12	2	4	2	break
		36	13	11	3	9	take off
		84	32	19	16	15	Number of Infections
			%40.476	%22.619	%19.047	%17.857	Percentag % e

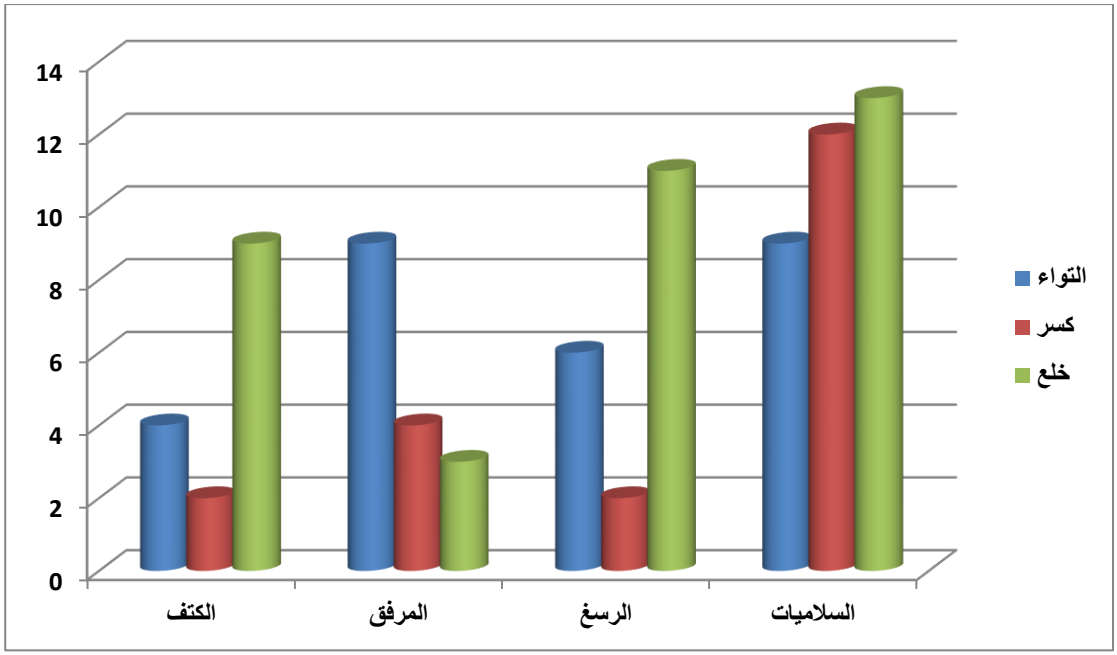

Figure (1) shows the results of the arithmetic media of the research variables

3.2 Discussion of the results:

The results of the study showed a significant increase in the rate of recurrent injuries among young volleyball players, with the majority of injuries concentrated in the shoulder, elbow and wrist areas. This distribution of injuries is attributed to the nature of the game's motor requirements, which include hitting the ball through serving and smashing skills as well as preparation, which require repeated pressure on these joints and muscles.

The data revealed that a large percentage of players had previously suffered at least one injury, while a number of players had recurred the injury two or more times during the same period, which indicates a defect

in prevention and rehabilitation methods within the clubs, or a weakness in medical follow-up and continuous physical evaluation. The results also showed that players in certain positions such as "crushing" and "preparation" players were more likely to recur the injury, which is consistent with what she indicatedthat high motor tasks and repetitive contact increase the rate of injuries" (Reeser et al., 2006).

These results are consistent with what Bahr & Krosshaug (2005) said about the importance of understanding the mechanisms of injury occurrence and recurrence as a basic step in prevention, as ignoring minor injuries and repeating the physical burden without periodic evaluation increases the risk of injury and prolongs the recovery period, which affects the athlete's athletic career. Pushing, balance, and the abundance of these movements expose these joints to injury more than other joints, and their injuries range from sprains, fractures, and vinegar.

Although the joint has a strong anatomical structure that allows it to withstand mechanical stresses, its frequent exposure to strong and complex sports makes it vulnerable to repetitive injuries, especially in sports that require a wide range of motion. This is due to the functional discrepancy between the body mass carried by the joint on the one hand, and the large range of movement it performs on the other, which increases the likelihood of strain or tearing in the joint's supporting tissues, such as ligaments and cartilage (Magee, 2014).

The shoulder joint is one of the most susceptible joints to injuries in sports that require repetitive dynamic movements, such as in volleyball. The joint is primarily involved in the execution of motor skills, both when performing on the ground and in the air. The nature of the game dictates the use of the joint in all directions and at varying speeds in line with performance requirements, resulting in the accumulation of mechanical effort on the tissues surrounding the joint. With the constant repetition of these movements, the likelihood of injury due to excessive strain increases and lack of hospitalization (Cools et al., 2008).

Rehabilitation processes play a pivotal role in reducing the complications of sports injuries and in accelerating a player's return to the required physical and technical level, especially in young people who are going through a sensitive developmental phase. Recent literature suggests that recurrence of injury is often associated with weakness or deficiencies in rehabilitation programs, both in terms of duration and the quality of rehabilitation exercises applied. Future recurrence of the infection (Kiesel et al., 2014). The combination of accurate diagnosis and specialized rehabilitation programs can reduce recurrent injury rates and improve motor and functional response in players.

The process of rehabilitating a sports injury is one of the most prominent aspects that receive the attention of specialists in this field, as

the athlete's return to practicing physical activity as soon as possible is one of the most prominent goals that rehabilitation programs seek to achieve. However, some current programs neglect an important aspect represented in the accurate diagnosis of the degree of injury, in addition to not taking into account the principle of gradual intensity of therapeutic exercises, which makes these programs deficient in some aspects. Hence, the importance of the proposed rehabilitation program, which It has features that are superior to traditional software. It increases arterial blood flow to the affected area, which improves tissue nutrition and promotes blood passage through blood and lymphatic vessels, as well as aids in the distribution of fluid between tissues. It also has a numbing effect that contributes to relieving muscle cramps, due to its calming effect on the nervous system. (229:2023:AbdulRidha & Saleh,)

4. Conclusion:

Through the results that appeared, the researcher found that the highest percentage of injuries was concentrated in the Salamiyat area, with a percentage of 40.47%, which indicates that the fingers of the hand are one of the most susceptible parts of the upper limb to injury among young volleyball players, and wrist injuries came in second place with 22.61%, followed by elbow and shoulder injuries with similar percentages (19.05% and 17.86% respectively), which reflects a wide distribution of injuries through the joints of the upper limb as a result of the nature of repetitive skills In the game, it was found that the most common type of injury is dislocation, with a total of (36) injuries, followed by sprains (28 injuries), while fractures recorded the lowest number (20 injuries), through results that confirm the existence of statistically significant differences between the type of injury and its anatomical location, which reinforces the hypothesis that the type of injury is related to the joint area.

The researcher recommends the need to design special preventive programs aimed at protecting the knuckle joints, given the high rate of spalumia injuries, including strengthening the hand muscles, balance exercises and motor control, and emphasizing the importance of training players on the correct playing techniques, especially when receiving the ball and smashing movements, to reduce the strain of the wrist and shoulder joints, and enhancing cooperation between coaches and physical therapists to develop individual rehabilitation programs for players with dislocations and sprains, to avoid recurrence of injuries in the future , and conduct periodic early diagnostic check-ups, especially for players with a recurring injury history, to ensure that weaknesses are detected and addressed before they worsen.

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Supplements

Appendix (1)

Information Collection Form

The first axis: Personal information about the injured person:

The type of game he plays	Club	Training age	Player Length	Player Weight	Age of the player	Date	Player Name	t
								1
								2
								3
								4

								5

The second axis: information about the infection:

Cause of injury	Severity of the injury	Injury Area	Type of injury	Date of injury	t
					1
					2
					3
					4
					5

Third Theme: Infection Screening Information:

Signature	Final Diagnosis	Perform some tests to confirm the type of injury	Clinical Screening	Injury Preview