

Analysis of sports injuries during volleyball lessons in students of Physical Education and Sports Sciences

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ABSTRACT

This study aimed to analyse sports injuries during volleyball lessons in students of Physical Education and Sports Sciences. The research community consisted of 400 students of the third stage of the Faculties of Physical Education and Sports Sciences at the Universities of Kirkuk and Tikrit for the academic year 2022-2023. The research sample included 80 students who were randomly selected. The researchers used an ad-hoc questionnaire as a means to collect the information and data. The statistical analyses were carried out with the Statistical Package for the Social Sciences (SPSS), version 23. Considering the results of the study, the researchers concluded that the most common sports injuries during volleyball lessons in students of Physical Education and Sports Sciences are sprains and muscle contractions (muscle spasm). The injuries on the lower extremities (ankle, knee, thigh and leg) were the most frequent injuries compared to the injuries of the upper extremity (upper limbs, abdomen and shoulder).

KEYWORDS

Sports injuries; Upper limb; Lower limb; Volleyball

1. INTRODUCTION

Volleyball is one of the sports that has seen growth in all around the world, especially in recent years. Some of the results of this growing interest according to many concerned authorities and specialists in it is the increase in expectations and excitement; a change in the speed of the game, plans and methods of play; a regular change in regulations; and a raise in the development skills and physical aspects associated with the game. Given the importance and difficulties that this represents,

it has become necessary to help the players to acquire and develop skills through the use of the best modern devices and tools for volleyball teaching and training.

The occurrence of sports injuries among students of the Faculties of Physical Education and Sports Sciences of the Universities of Kirkuk and Tikrit is one of the important problems that hinders the students' educational process and the results of students in exams in general, especially in practical classes. Injuries affect the regularity of their attendance in classes, as well as their participation at university and local sports tournaments, in addition to having a negative psychological impact on the student and the consequent economic burdens that are spent on treatment and rehabilitation.

For this reason, it is important to consider that "every sport has a degree of risk and the difference in injury in all its forms is according to the type of activity practiced" (Al-Din et al, 1985). As such, the importance of the study lies in analysing and mitigating sports injuries that volleyball players are exposed to during practical class, training and sports competitions; on the one hand, because they did not receive attention in the studies of faculties of physical education and sports sciences in particular; and on the other hand, due to the negative repercussions that the injury may have on students' health and performance. This study came to address the issue of sports injuries to the upper and lower limbs of the students of the faculties of physical education and sports sciences.

The research problem lies in the increase in the frequency of sports injuries among students and practitioners of volleyball, and because the researcher is a teacher in the College of Physical Education and Sports Sciences of the University of Kirkuk and the President of the Sports Medicine Union (Kirkuk branch), he notices the increase in sports injuries among students and its recurrence during practical class. Thus, the researchers considered necessary to conduct a study that aimed to familiarize those involved in the sports field, including teachers, students and players, with all the details of the most common types of injury, as well as their type, causes and location among students of the Faculties of Physical Education and Sports Sciences of the Universities of Kirkuk and Tikrit. This is confirmed by Renstrom (2002), who states that the increase in the prevalence of sports injuries is one of the main factors that prevents athletes from regular training operations and is cause of the low level of their achievements. In addition to that, the treatment and rehabilitation of injured people needs billions of dollars, as 5-10% of injuries among athletes need surgical intervention.

The research objectives were: 1. Identify the most common type of injury on the upper and lower limbs among students of the Faculty of Physical Education and Sports Sciences of the University of Kirkuk. 2. Identify the most regular sports injury on the upper and lower limbs among students at the College of Physical Education and Sports Sciences of University of Tikrit. 3. Compare

the most frequent injuries on the upper and lower limbs among students of the Faculties of Physical Education and Sports Sciences of the Universities of Kirkuk and Tikrit.

2. METHODS

2.1. Design and participants

The researchers used the descriptive method in a survey and comparative manner to better suit the research. The research community consisted of 400 students of the third stage of the Faculties of Physical Education and Sports Sciences at the Universities of Kirkuk and Tikrit for the academic year 2022-2023. The research sample included 80 students who were randomly selected (Table 1).

Table 1. Research community and its sample

University	Community	Sample	Percentage within the community
Kirkuk	200	40	20
Tikrit	200	40	20
Total	400	80	20

2.2. Instruments and procedures

The researchers used an ad-hoc questionnaire as a means to collect the information and data. This questionnaire was presented to 5 experts and specialists, and their observations were taken into consideration for some modifications in line with the study sample.

2.3. Statistical analyses

The statistical analyses were carried out with the Statistical Package for the Social Sciences (SPSS), version 23. With SPSS, the researchers calculated frequencies and percentages (Al-Kinani, 2009).

3. RESULTS AND DISCUSSION

The results of Table 2 indicate that sprain injuries were the most frequent injuries with a number of 12 injuries and a percentage of 30%. Muscle contractions injuries (muscle spasm) took the second place with a number of 7 injuries and a percentage of 17.5%. Muscle rupture came in the third place with a number 5 injuries and a percentage of 12.5. Inflammatory abrasions came in the fourth place with a number of injuries of 4 and with a percentage of 10%. The researchers think that the reason why sprains injuries took the first place is because the knee and ankle joints are the two joints that bear the weight of the body, more than other parts of the body.

Table 2. Injuries among students at the College of Physical Education and Sports Sciences of Kirkuk

No.	Type of injury	Frequency	Percentage
1	Sprains	12	30
2	Muscle contractions (muscle spasm)	7	17.5
3	Muscle rupture	5	12.5
4	Inflammatory abrasions	4	10
5	Wounds	3	7.5
6	Tendon rupture	3	7.5
7	Dislocation	2	5
8	Ligaments torn	2	5
9	Fracture	1	2.5
10	Other injuries	1	2.5
	Total injuries	40	100

It was found from the results of Table 3 that non-compliance with safety rules came in the first place among the causes of sports injury, with a percentage of 25%; lack of a good warm-up came in the second place, with a percentage of 17.5%; and that the cause of injury of not giving sufficient rest between exercises came in the third place, with a percentage of 12.5%. Poor selection of exercises for the muscle group came in the fourth place.

Table 3. Causes of injuries among students at the College of Physical Education and Sports Sciences of Kirkuk

No.	Causes of injury	Frequency	Percentage
1	Non-compliance with safety rules	10	25
2	Lack of good warm-up	7	17.5
3	Not giving enough rest between exercises	5	12.5
4	Poor selection of exercises for the muscle group	4	10
5	Do not gradually increase the exercise	3	7.5

6	Bad weather	2	7.5
7	Invalidity of the devices used	2	5
8	Poor psychological preparation	1	2.5
9	Invalid sportswear	1	2.5
10	Not relaxing well after exercise	1	2.5
11	Poor skill preparation (technique)	1	2.5
12	Inadequate provision of tools and equipment for training and matches	1	2.5
13	Lack of teacher guidance and awareness of the student	1	2.5
	Total	40	100

Regarding Tikrit University, Table 4 showed that the injury of muscle contractions and muscle spasm came in first place with a percentage of 25%, and sprains injuries came in the second place with a percentage of 20%. The researchers attribute the reason for the increase in these injuries to the lack of a good warm-up, the increase in exercise, and the failure to give sufficient rest between exercises, as indicated by Majid & Qasim (1997).

Table 4. Injuries among students at the College of Physical Education and Sports Sciences of Tikrit

No.	Type of injury	Frequency	Percentage
1	Muscle contractions (muscle spasm)	10	25
2	Sprains	8	20
3	Muscle rupture	5	12.5
4	Wounds	4	10
5	Inflammatory abrasions	4	10
6	Tendon rupture	3	7.5
7	Ligaments torn	2	5
8	Other injuries	2	5
9	Dislocation	1	2.5
10	Fractures	1	2.5
	Total injuries	40	100

The results of Table 5 showed that the lack of good warm-up is the most common among the causes of sports injury that the upper and lower limbs are subject to for the students at the College of Physical Education and Sports Sciences of the University of Tikrit, with a percentage of 25%. The cause of non-gradual increasing exercise came in the second place with a percentage of 15%, and the reason of not giving enough rest between exercises came in the third place with a percentage of 12.5%.

Table 5. Causes of injuries among students at the College of Physical Education and Sports Sciences of Tikrit

No.	Causes of injury	Frequency	Percentage
1	Lack of good warm-up	10	25
2	Non-gradual increasing exercise	6	15
3	Not giving enough rest between exercises	5	12.5
4	Non-compliance with safety rules	4	10
5	Poor selection of exercises for the muscle group	4	10
6	Poor skill preparation (technique)	3	7.5
7	Invalidity of the devices used	2	5
8	Poor psychological preparation	2	5
9	Lack of teacher guidance and awareness of the student	1	2.5
10	Bad weather	1	2.5
11	Non-adherence to the diet program	1	2.5
12	Not relaxing well after exercise	1	2.5
	Total	40	100

It was found from the results of Table 6 that the sports injury most common on the upper and lower limbs among the students of the College of Physical Education and Sports Sciences of Kirkuk is sprains, with a percentage of 30%. Sprains among students of the College of Physical Education and Sports Sciences of Tikrit had a prevalence of 20%, and the reason found for this were "non-compliance with safety rules, inappropriateness of the ground halls of the practical class playgrounds, and lack of a good warm-up" (Hussein, 2004).

As for the incidence of muscle contractions among Tikrit University students, the percentage was 25%, while the percentage was 17.5% among Kirkuk University students. The researchers attribute this to the lack of a good warm-up and the lack of gradual increase in exercise, as "the warm-up has a great effect and may reduce the incidence of injury" (Pope et al, 2000).

Muscle ruptures, inflammatory abrasions, wounds and tendon ruptures were also very frequent, both in Kirkuk and Tikrit. Poor skill preparation (techniques), poor psychological preparation and not giving enough rest between exercises are among the most important reasons that lead to these kinds of injuries. It is worth noting that the results of the present study are consistent with the studies of Majid & Qasim (1997) and Al-Saffar & Yassin (1998).

Table 6. Comparison of the percentage of sports injuries among students of the Faculties of Physical Education and Sports Sciences of the Universities of Kirkuk and Tikrit

No.	Type of injury	Kirkuk percentage	Tikrit percentage
1	Sprains	30	20
2	Muscle contractions (muscle spasm)	17.5	25
3	Muscle rupture	12.5	12.5
4	Inflammatory abrasions	10	10
5	Wounds	7.5	10
6	Tendon rupture	7.5	7.5
7	Dislocation	5	2.5
8	Ligaments torn	5	5
9	Fractures	2.5	2.5
10	Other injuries	2.5	5
Total		100	100

Through the results of Table 7, it was found that the injuries on the lower extremities (ankle, knee, thigh and leg) were more common than the injuries of the upper extremity (upper limbs, abdomen and shoulder) among the students of the Faculties of Physical Education and Sports Sciences of the Universities of Kirkuk and Tikrit. The upper extremity injuries had the same percentage among the students of the Universities of Kirkuk and Tikrit.

Table 7. Comparison of the percentage of sports injuries among students of the Faculties of Physical Education and Sports Sciences of the Universities of Kirkuk and Tikrit, by body parts

No.	Affected body part	Kirkuk percentage	Tikrit percentage
1	Ankle	35	27.5
2	Knee	22.5	22.5
3	Thigh	17.5	22.5
4	Leg	12.5	17.5
5	Upper limbs	7.5	7.5
6	Abdomen	2.5	2.5
7	Shoulder	2.5	2.5

4. CONCLUSIONS

Considering the results of the study, the researchers concluded that the most common sports injuries during volleyball lessons in students of Physical Education and Sports Sciences are sprains and muscle contractions (muscle spasm). The injuries on the lower extremities (ankle, knee, thigh and leg) were the most frequent injuries compared to the injuries of the upper extremity (upper limbs, abdomen and shoulder).

In light of the results of the study, the following can be recommended: 1. Highlighting the importance of providing security and safety factors to reduce sports injuries among students. 2. Educating students in practical lectures on the importance of general and special warm-up before starting the class and its role in preventing sports injury. 3. Preparing educational plans and curricula that help raise the elements of physical fitness. 4. Recognizing the need to do periodic maintenance of the stadiums and ensure their validity for the purpose of the teaching process and matches. 5. Attracting attention to the psychological preparation as a tool for injury prevention.

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AUTHOR CONTRIBUTIONS

All authors listed have made a substantial, direct and intellectual contribution to the work, and approved it for publication.

CONFLICTS OF INTEREST

The authors declare no conflict of interest.

FUNDING

This research received no external funding.

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