

The most common anatomical sites exposing to sports injuries among the students of volleyball course at Mu'tah university

¹Prof. Motasim Mahmoud Shatnawi / Yarmouk University/ Jordan
Albasha1969@yahoo.com

²Dr. Osama Ali Al-Hasanat / Al-Hussein Bin Talal University/ oa_hasanat@yahoo.com

³Dr. Muhammad Saeed Al-Saeedin / The Ministry of Education
alsedeenmohmd@yahoo.com /

⁴Dr. Faisal Al-Habashneh / The Ministry of Education

Abstract: This study aimed at identifying the most common anatomical sites exposing to sports injuries among the students of volleyball course at Mu'tah university as well as the most common types of injuries and the causes leading to sports injuries among the students of volleyball course at Mu'tah university. The study used the descriptive approach and the questionnaire was used as the study instrument for data collection. The study sample consisted of (22) students of those enrolled in the course of volleyball in the faculty of Physical Education at Mu'tah university, who were chosen purposively. (SPSS) was used for analyzing the study results. The results revealed that the most common sports injuries among the students enrolled in the course of volleyball in the faculty of sports sciences at Mu'tah University are related to elbow joints, the most common types of injuries among the students enrolled in the course of volleyball in the faculty of sports sciences at Mu'tah University are cramps and the most common causes leading to injuries among those students are related to fatigue due to the large number of applied lectures given to students. The study recommended the necessity of paying more attention to the sufficient warming up due to its importance in reducing sports injuries.

Key words: injuries, sports injuries, volleyball course.

Introduction:

Sports injuries are amongst the most serious problems facing athletes. The science of sports injuries has become one of the advanced sciences that are related to the health and sports sciences, which seeks to reducing these injuries due to their effects on the performance of athletes themselves and the sports results; these sports injuries have an adverse economic effects on athletes and the country to which they belong, in addition to their impact on achievement. Sports injuries occur in all the types of games, either as individual or group games. Also, sports injuries vary according to their causes, severity and negative consequences (Khoraiabet, 2010).

(Khalil, 2004) suggested that addressing the topic of injuries is important for developing sport and reducing injuries on the one hand as well as guiding coaches to perform the early and right procedures to protect athletes against the dangerous consequences that may prevent them from practicing sports activities on the other hand. Sports injuries are considered as barriers that hinder athletes from practicing sports activities and competitions as well as reducing their level; however, such injuries could be avoided if athletes followed the right bases during sports practice (Tawfiq, 2000).

Therefore, the responsible authorities for sports activities, throughout the world, aim to provide the right training atmosphere and the comprehensive medical circumstances, since studies revealed that sports practice without the existence of good medical atmosphere results in injuries which, in turn, reduces the athlete's sporting age in sports competitions (Riyadh, 2002).

Statistics in some countries revealed that there are high rates of injuries during the sports activities. For example, the number of injuries in the playgrounds specified for children in the United States of America reached (237000) injuries. Also, there are about (750.000) injuries among the participants in sports activities at the level of high schools and universities each year (Al-Sayid, 2004).

Volleyball is considered as one of the group games that has its own basic skills through which the game level could be promoted to reach the highest international levels. This game depends on the degree of mastery and practice for the basic skills under all the circumstances accompanying the sports competition (Hassan, 2010).

Volleyball depends on several defensive and offensive skills and the free player (libero) is one of the most influential factors in the defensive performance in volleyball, in that the libero's performance is specified in the back line of the court within certain controls determined to the player who should have certain body measurements. The libero has a basic task of not letting the served ball grounded within the court of his team as well as saving the balls that are bounced back from the front row or the net (Al-Safi, 2012).

The study problem:

The occurrence and prevalence of sports injuries among the students of the faculties of Physical Education are considered as important problems that adversely affect the educational process and students' results. Sports injuries reduce the rates of regular attendance to practical lessons and participation in university and local sports competitions, in addition to their negative impact on the student's psychological state and the financial burdens that are paid for the purposes of therapy and rehabilitation (Al-Rawi, Fatehi, 2008).

Based on the researcher's review of several references and studies that addressed the topic of sports injuries, he noticed that there is a paucity in the studies that addressed sports injuries in volleyball despite the high rates of injuries to which students are exposed while studying the course of volleyball. Volleyball is considered as one of the compulsory courses within the plan of the faculty of Physical Education at Mu'tah university, and since injuries are negatively reflected on the students' performance and their academic achievement, the author noticed that there are several problems facing students during practical lectures. Therefore, the current study aimed at identifying those problems, their causes as well as the most common types of sites of injury and finding solutions to reduce their occurrence.

The study importance:

The importance of the current study is derived from the following:

- 1- The study addressed the topic of sports injuries in the course of volleyball in the faculty of Physical Education at Mu'tah university.
- 2- It contributes to identifying the causes leading to sports injuries in the course of volleyball, since it is a compulsory course in the study syllabus; therefore, educators and students should take the factors of safety and security into consideration to reduce the occurrence of sports injuries.

The study objectives:

The study aimed at:

- 1- Identifying the most common body sites exposing to sports injuries among the students of the courses of volleyball at Mu'tah university.
- 2- Identifying the most common types of sports injuries among the students of the courses of volleyball in the faculty of sports sciences at Mu'tah University.
- 3- Identifying the most common causes leading to sports injuries among the students of the courses of volleyball in the faculty of sports sciences at Mu'tah University.

The study questions:

The study aimed to answer the following questions:

- 1- What are the most common anatomical body sites exposing to sports injuries among the students of the courses of volleyball at Mu'tah university?
- 2- What are the most common types of sports injuries among the students of the courses of volleyball at Mu'tah University?
- 3- What are the most common causes leading to sports injuries among the students of the courses of volleyball at Mu'tah University?

The study limitations:

- 1- **The geographical limitation:** the study was conducted in the Hashemite Kingdom of Jordan.
- 2- **The human limitation:** The study was applied to the students enrolled in the course of volleyball at Mu'tah university during the first semester(2022-2023).
- 3- **The temporal limitation:** the study was conducted during the first semester (5/3/2022 – 20/3/2022), where the questionnaire was distributed during this period.
- 4- **The spatial limitation:** the current study was conducted in the faculty of sports sciences at Mu'tah University.

The study terminology:

Injuries: the exposure of the different body tissues to external or internal factors, which lead to physiological and anatomical changes in the injury site and impede the function of that tissue (Khalil, 2004).

Sports injuries: the exposure of the different body tissues to external or internal influential factors during training or competitions, which lead to physiological and anatomical changes in the injury site and results in impeding the function of the affected tissue either temporarily or permanently (Al-Shatnawi, 2016).

The course of volleyball: it is one of the compulsory courses in the faculty of Physical Education at Mu'tah university, which is taught within the study syllabus of the faculty, where the course addresses several levels (procedural).

Methodology and design:

The study methodology:

The research used the descriptive approach in its survey image due to its compatibility to the study nature and objectives.

The study population:

The study population consisted of the male students enrolled in the course of volleyball at Mu'tah university during the second semester for the academic year (2019-2020), with a total of (60) students.

The study sample:

The study sample was chosen purposively from all the students enrolled in the course of volleyball in the faculty of sports sciences at Mu'tah University for the academic year (2019-2020), with a total of (22) students. Table (1) shows the characteristics of the study sample individuals.

Table (1)

Means and standard deviations for the study variables (age, height, weight) among the students of volleyball course in the faculty of Physical Education at Mu'tah university (n=22).

| Variable | Mean | SD |
|-------------|--------|------|
| Age (year) | 21.36 | 1.58 |
| Weight (kg) | 68.12 | 4.98 |
| Height (cm) | 171.66 | 8.13 |

The study instrument:

The author used a pre-developed instrument for sports injuries, and several previous studies were reviewed in this domain, including (Nada, 2014), (Al-Zoghailat, 2012) and (Al-Rawashdeh, 2012).

The study variables:

The independent variable:

- 1- Injuries sites
- 2- Types of injuries
- 3- The causes leading to sports injuries.

The dependent variable: the response of the students of volleyball course in the faculty of sports sciences at Mu'tah University.

The study procedures:

The researcher performed a number of organizational and administrative procedures to facilitate the implementation of the study, including that:

- 1- The researcher communicated the specialized authorities at Mu'tah university to post the required facilitation formal letters to the other universities where the study will be applied, and they were enclosed in the study appendices.
- 2- The researcher determined the time of lectures by coordinating with the faculty members.
- 3- The researcher took the permission from the faculty members to allow him to explain the questionnaire before starting to complete it as well as giving the sufficient time for completing it to reduce errors while completing the questionnaire.
- 4- The researcher distributed the questionnaire to the students who were exposed to injuries and excluded those who weren't exposed to injuries.
- 5- The researcher collected the returned questionnaires and reviewed them, where (22) questionnaires were distributed and were completely returned.

The statistical processing:

In order to achieve the study objectives and answer the study questions, (SPSS) was used. Several statistical methods were used, as follows:

- 1- Means, standard deviations and Pearson coefficient.
- 2- Chi square to detect the differences.
- 3- Two – way Anova to detect the differences in the means of injuries numbers according to the study variables.

Displaying and discussing the results:

The results of the first question, stating "What are the most common anatomical body sites exposing to sports injuries among the students of the courses of volleyball at Mu'tah university?"

Table (2)
Frequencies and percentages for the sites of injuries among the students of volleyball course in the faculty of sports sciences at Mu'tah University

| Number | Injury site | Frequency | Percentage |
|--------|----------------|-----------|------------|
| 1 | Head | 3 | 2.88% |
| 2 | Neck | 7 | 6.73% |
| 3 | hand phalanges | 14 | 13.46% |
| 4 | Wrist joint | 9 | 8.65% |
| 5 | arm | 3 | 2.88% |
| 6 | Shoulder joint | 3 | 2.88% |
| 7 | Humerus | 4 | 3.85% |
| 8 | Elbow joint | 19 | 18.27% |
| 9 | Trunk joint | 2 | 1.92% |
| 10 | Hip joint | 3 | 2.88% |
| 11 | Thigh | 4 | 3.85% |
| 12 | Knee joint | 3 | 2.88% |
| 13 | leg | 4 | 3.85% |
| 14 | Ankle joint | 6 | 5.77% |
| 15 | foot phalanges | 6 | 5.77% |
| 16 | Insteps | 4 | 3.85% |
| 17 | Metacarpus | 10 | 9.62% |
| | Total | 104 | 100% |

Table (2) shows the percentages and frequency values for the most important sports injuries experienced by the students of volleyball course in the faculty of sports sciences at Mu'tah University. The percentage

values revealed that the elbow joint is the most commonly injured site with a percentage of (18.27%) from the total number of injuries (104) injuries, followed by hand phalanges with a percentage of (13.46%), then metacarpal with a percentage of (9.62%), the trunk with a percentage of (1.92%), and finally the sites of head and arm.

The researcher attributed this finding to the fact that most volleyball skills depend on this joint and the surrounding muscles, where elbow joint is almost involved in all movements, especially in the case of spikes, preparation, defense, and serve. Therefore, we can see that students are affected when performing these skills. Also, the whole hand and phalanges are affected due to the motor burden imposed upon them. This finding contradicted with (Harringe et al, 2004), which suggested that (65%) of injuries occurred in the lower limbs of the body.

The results relating to the second question, stating" What are the most common types of sports injuries among the students of the courses of volleyball at Mu'tah university?

In order to answer this question, frequencies and percentages were used. Table (3) shows the results.

Table (3)

Frequencies and percentages for the most common types of injuries among the students of the courses of volleyball in the faculty of sports sciences at Mu'tah University

| Number | Type | Frequency | Percentage |
|--------|------------------|-----------|------------|
| 1 | Cramps | 31 | 29.81% |
| 2 | Myorrhaxis | 16 | 15.38% |
| 3 | Ligament rupture | 11 | 10.58% |
| 4 | Sprain | 5 | 4.81% |
| 5 | Tendons rupture | 2 | 1.92% |
| 6 | Muscle bruises | 9 | 8.65% |
| 7 | Wounds | 8 | 7.69% |
| 8 | Fractures | 7 | 6.73% |
| 9 | Dislocation | 9 | 8.65% |
| 10 | Disarticulation | 5 | 4.815 |
| 11 | Abrasions | 1 | 0.96% |
| | Total | 104 | 100% |

Table (3) shows the values of means and frequencies for the most common types of injuries among the students of the courses of volleyball in the faculty of sports sciences at Mu'tah University. The values of percentages revealed that cramps are the most common types of injuries with a percentage of (29.81%) from the total number of injuries which is (104) injuries, followed by muscle ruptures with a percentage of (15.38%), ligament ruptures (10.58%), and abrasions(0.96%), followed by tendons ruptures (1.92%).

The researcher attributed that to the insufficient warming up, the inappropriate preparation of muscles that allows performing motor skills in a flexible way; therefore, cramps were in the first place. As for muscle ruptures, the researcher attributed cramps lead to muscle ruptures, and then ruptures in ligaments and tendons. This finding agrees with (Nada, 2014) and (Al-Domour, 2013).

The results relating to the third question, stating " What are the most common causes leading to sports injuries among the students of the courses of volleyball in the faculty of sports sciences at Mu'tah university?

In order to answer this question, frequencies and percentages were used. Table (4) shows the results.

Table (4)

Frequencies and percentages for the most common causes leading to injuries among the students of the courses of volleyball in the faculty of sports sciences at Mu'tah University (n=22)

| Number | Injury cause | Frequency | Percentage |
|--------|---|-----------|------------|
| 1 | The bad choice of the appropriate exercises for the various muscular groups | 15 | 14.42% |
| 2 | inappropriate warming up | 13 | 12.50% |
| 3 | inappropriate ground | 9 | 8.65% |
| 4 | Over-performance | 11 | 10.58% |
| 5 | Fatigue due to the increased number of practical lectures | 23 | 22.12% |
| 6 | Low skilled preparation | 3 | 2.885 |
| 7 | Insufficient rest between trainings | 2 | 1.92% |
| 8 | Low physical preparation | 0 | 0.00% |
| 9 | Overweight | 6 | 5.77% |
| 10 | Lack of safety and security factors | 10 | 9.62% |
| 11 | Bad nutrition | 0 | 0.00% |
| 12 | Inappropriate sports clothes | 3 | 2.88% |
| 13 | Insufficient area for gymnastics hall | 0 | 0.00% |
| 14 | Large number of students in the same section | 3 | 2.88% |
| 15 | Lack of comprehensive regular medical investigations | 0 | 0.00% |
| 16 | Inappropriate time for gymnastics lectures | 0 | 0.00% |
| 17 | Excessive enthusiasm | 6 | 5.77% |
| | Total | 104 | 100% |

Table (4) shows the values of frequencies and percentages for the most common causes leading to injuries among the students of the courses of volleyball in the faculty of sports sciences at Mu'tah University. By reviewing the values of percentages, it is noticed that the most common causes were represented by "fatigue due to the increased number of practical lectures", with a percentage of (22.12%), followed by "the bad choice of the appropriate exercises for the various muscular groups", with a percentage of (14.42%), and then "inappropriate warming up" in the third place, with a percentage of (12.50%).

The researcher attributed this finding to the lack of practicing physical activities, lack of knowledge about the elements of physical fitness that are important for this game, in addition to dependence on the theoretical side only. This finding contradicted with (Al-Domour, 2013) and (Hamarsheh and Shaheen, 2015).

Conclusions:

In the light of the results, the study concluded that:

- 1- The most common sites for sports injuries among the students of the courses of volleyball in the faculty of sports sciences at Mu'tah University are elbow joints.
- 2- The most common types of sports injuries among the students of the courses of volleyball in the faculty of sports sciences at Mu'tah University are cramps.
- 3- The most common causes leading to sports injuries among the students of the courses of volleyball in the faculty of sports sciences at Mu'tah University are related to fatigue due to the increased number of practical lectures.

Recommendations: in the light of the results, the study recommended the following:

- 1- The necessity of focusing on the elements of physical fitness that are necessary for developing performance.
- 2- The necessity of paying more attention to good warm up due to its importance in reducing sports injuries.
- 3- Giving sufficient time to general and specific warm up and performing exercises in an appropriate way.

References:

Arabic references:

- 1- Tawfiq, FarrajAbdulHamid(2000), the common sports injuries among the athletes in the university of Um Al-Qura in Makkah Al-Mokarrama, the journal of theories and applications, Issue, 38,Alexandria.
- 2- Hassan, Sina' Falih (2010), The Effect of Directed Discovery Method on Perceptual Experience and Learning Some Basic Skills in Volleyball, Master Thesis, the University of Diyala.
- 3- Khoraibet, Fatima As'ad (2010). The Impact of a Preventive Training Program on Improving the Strength Ratio of the Posterior Thigh Muscles to the Anterior to Reduce Sports Injuries among Athletics Athletes, Unpublished PhD , the University of Jordan, Jordan.
- 4- Khalil, Sami'a (2008). Athletes' injuries and methods of treatment and rehabilitation, Cairo, Nass Printing Institution .
- 5- Khalil, Sami'a (2004). Sports injuries, the faculty of physical education for girls, Baghdad.
- 6- Al-Dolaimi, Nahda, Samira, Abdul Rasoul (2013). An Analytical Study of the Types of Sports Injuries and the Causes of Their Occurrence among Team Games Players, Diyala University, the Faculty of Physical Education, Babylon University Journal, Human Sciences, Volume 31, Issue 4.
- 7- Al-Rawi, Younis Ibrahim, Fatehi, Mounib Abdullah, (2008). A diagnostic study to determine the most important ligament injuries of the knee and ankle joints among students of the Faculty of Physical Education at the University of Mosul, Al-Rafidain Journal of Sports Sciences, Volume (14), Issue (47).
- 8- Al-Rawashdah, Walid Abdul-Majeed (2012). Sports Injuries Common among the Players of Premium Class Football Clubs in Jordan, Unpublished Master Thesis, the University of Jordan, Amman, Jordan.
- 9- Riyadh, Osama (2002). Sports Medicine and Sports Injuries, Cairo, Arab Thought House.
- 10- Zougailat, Mohannad (2012). Sports injuries common among Kata players in the sport of karate in Jordan, Al-Najah University Journal for Research and Science, Issue 2, Volume 26.
- 11- Al-Sayid, Ibrahim Al-Bora'i (2004). A proposed unit about safety in sports activities for second stage students of basic education. Assyout Journal of Physical Education Sciences and Arts, Issue 18, Volume 3.
- 12- Al-Shatnawi, Mo'tassim Mahmoud (2016). Encyclopedia of Sports Injuries, First Edition, Arwa Press, Amman, Jordan.
- 13- Al-Safi, As'ad Adnan (2012), The percentage of contribution of some body measurements to the performance of some defensive skills among the free players in volleyball, Al-Qadisiyah Journal of Physical Education Sciences, Volume 12, Issue 1, pp. 111-130, Al-Qadisiyah University.
- 14- Al-Domour, Amal (2013). The most common sports injuries among students of the Faculty of Sports Sciences at the University of Mu'tah in gymnastics courses, unpublished master thesis, Mu'tah University.
- 15- Nada, Ala', Majid Hussein (2014). Sports Injuries among the Students of Physical Education in the Palestinian Universities, published master thesis, Al-Najah National University for Research and Humanities.

Foreign references:

- 1- Harringe ML, Lindbiad S, Werner S (2004) Do team gymnasts compete in spite of symptoms from an injury , **Br J Sports Med** ; 38 (4): 398 -401.