

# Identifying the most common types, causes and locations of Injuries between Students

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## ABSTRACT

The current research aims to identify the most common types of sports injuries that occur to students of the College of Physical Education at the University of Duhok, and to determine the most physical locations that are exposed by these injuries among students and to determine the most important reasons that lead to these injuries among students. A study questionnaire was designed for study that included three tables. The first table includes the types of common injuries, the second table includes the common causes that lead to injuries, while the third table includes the most common location of the body exposed to injuries.

The researcher used the descriptive approach, and the sample included the injured students from the four stages of the college of Physical Education. The questionnaire included a total sample of 675 students, and the total number of sports injuries of both sexes reported from all four stages in the college that were included in the study was 98 (14.51%). Data were collected from version 22 used for analysis. The result showed that knee injuries were the most common SPSS questionnaires and body exposure for students of physical education, and muscle tear injuries were the most common type of injury. Warming up was one of the main causes of injuries.

**Keywords:** Sport Injuries, Data Analysis, Duhok.

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## 1. Introduction

The benefits of participating in sporting events and physical activities cannot be denied. However, these participations increase the occurrence of injuries, while the type, size and severity of injuries can vary during all sporting activities, competitive levels, study phase, age and gender. Consequently, sports injuries are still a topic of great and interesting concern (Swarup, 2014), the subjects of the College of Physical Education include two directions: theoretical lessons and practical lessons, and the link between these two directions is necessary to apply the information that students take in the practical field, but this application in practical lessons may increase the risk of injury due to the great effort exerted

by different body parts such as the skeleton, muscles, ligaments, etc. (Faraj & Hussein, 2007; Majewski et al; 2006).

Training curriculum have been developed for different sports specialties, and this process has been accompanied by many developments in the field of sports medicine with a lot of scientific studies in the preventive and curative aspects, and this has proven its good results by disturbing the achievement of high athletic achievements ( David et al; 2011), however, sports injuries occur in various degrees whether in sports competitions or in practical classes that lead to a period of treatment in which it keeps students away from physical activity, and this negatively affects

physical fitness and achievement level, which causes some complications that may hinder the course of the educational and training process, Which may have negative physiological and psychological effects on students (Muhammad, 2002; Zahir, 2004 ) and thus it becomes an obstacle to achieving an ideal and high level of achievement ( David et al; 2011). Whereas any person, whether athlete or non-athlete, may be injured during the exercise of any sports or physical activity (Riyadh, 1998), and for this, the increase in the rates of sports injuries and the resulting complications is a phenomenon that deserves attention ( Abernethy & MacAuley,2003), and this consistent with the previous study by Abdel-Qader & Aqli, (2012) which mentioned that the joints, muscles and bones suffer from many loads and pressures during sports activities such as football, basketball, handball, weightlifting, etc., which lead to the player's injury such as muscle tear, tension and fractures.

Hence the importance of this research as a serious scientific attempt is to find out the types, causes and locations of injuries among students of the College of Physical Education at the University of Duhok, as a serious study that represents a simple contribution to the process of advancing the levels of sport and achieving the sports goals envisaged by the training of athletes and, accordingly, The research gained two important facts, through knowing the types and causes of sports injuries in sports activities practiced in the College of Physical Education. In order to protect students from injuries by using the tools and means that reduce injuries and by identifying the causes and types of injuries that occur in practical lessons. Thus, the athlete may help to avoid and reduce injury and treatment methods.

### **1.1 Research problem:**

Sports injuries and the extent of their impact on students in terms of their types, causes and body locations in

which the injury occurs directly may affect both the level of physical fitness and athletic performance and achievement among students during practical lessons in physical education. As a researcher is a teacher at the college of Physical Education, he observed high rates of infection among students during the performance of practical lessons and exposing them to different types of injuries in different parts of the body while performing practical lessons, thus, the research problem can be formulated in the following question:

What are the most common types, of injuries, their causes, and locations of the body that are exposed to these injuries between students of the College of Physical Education at the University of Duhok. In order to reach appropriate solutions to treat such injuries that may negatively affect the level of students.

### **1.2 Research aims**

- Determining the most common types of sports injuries that occur between students of the College of Physical Education at the University of Duhok.
- Determining the most important causes that lead to these injuries between students of the College of Physical Education, University of Duhok.
- Determining the most common locations of the body that are exposed to these injuries between students of the College of Physical Education at the University of Duhok.

### **1.3 Research hypotheses**

- Bruising and rupture injuries are the most common types of injuries between students of the College of Physical Education at the University
- Knee joint injuries were the most common location of the body for students.
- Bad warming-up is one of the most common causes of injury among students of the College of Physical Education at the University of Duhok.

## **2. Methodology**

A study questionnaire was consisting of three tables (see Appendix 1). The first table includes the types of common injuries that occur to students, the second table includes the common causes that lead to injuries, and the third table includes the most common locations of the body exposed to injuries, based on previous studies (David et al ,2011 & majewski 2006) then the researcher presented it to some of the experienced and specialists, then it was distributed among all injured students in college.

**3. Participants**

The researcher used the descriptive method, as a descriptive research is “aimed at casting light on current problems through a process of data collection that enables them to describe the situation more completely. The sample included the injured students in the four stages of the College of Physical Education in 2018-2019. The research community consisted of 675 students. The total number of reported sports injuries of both sexes from all college students covered in the study was 98 (14,51%), data was collected from questionnaires and SPSS version 22 of the Windows 2010 program was used for analysis.

**4. Results**

In order to achieve the objectives and hypotheses of the research, the obtained results were analyzed through the questionnaire for students during the statistical processes that shown in the following tables:

**Table 1**

**shows the number, percentage, value of kay square and significance for each type of injuries**

type of injuries	Number of injuries	percentage	Kay square value		significance
			Tabular	Calculated	
Sprains	14	14.28%			
Fracture	7	7.14%			
Muscle rupture	31	31.6%	34.11	79.12	
dislocation	12	12.24%			

muscles	9	9.18%
spasm		
contusion	25	25.51%
Total	98	%100

Table (1) shows that the most common types of injuries was the muscle rupture and contusion at (31.6%, 25.51%) respectively. The second most popular kind of injury was sprains injury at (14.28%). Dislocation injury was the third, at 12.24%, and fraction were little lees common at 7.14%. In order to find out if there were significance , the researcher used the Kay square test, which showed a calculated value at 79.12 which is greater than the tabular value (34.11) at the (0.05) under the degree of freedom (97).

**Table 2**

**shows the number, percentage, value of kay square and significance for each areas of injuries**

areas of injuries	Number of injuries	percentage	Kay square value		significance
			Tabular	Calculated	
Ankle	14	14.2%			
Knee joint	28	28.57%			
Thigh	7	7.14%			
Leg	24	24.48%			
Ribs	2	2.04%	45.90	55.10	
Spine bone	1	1.02%			
Fingers	3	3.06%			
Humerus	7	7.14%			
Shoulder	12	12.24%			

Table (2) shows that the most common locations of injury occur in knee joint at rate of (28.5%). The second popular locations of injuries was leg injuries at (24.4%). Ankle injuries was third, at (14.2%), followed by shoulder injuries at a rate of (12.24%), then humerus and thigh injuries equally at a rate of (7.1%). Finger and ribs injuries were less common injuries at (3.0% and 2.0%) Respectively, to identify the significance of the differences between the number and location of the

injures, the researchers used the Kay square test.

As shown in Table (2), the calculated value of the Kay square was (55.10) is greater than the value of the table Kay at (45.12) at the degree of freedom (98) and the level of significance (0.05), which indicates the existence of significance differences between them.

**Table 3**  
**shows the number, percentage for each locations of injuries**

Reasons of injuries	Number of injuries	percentage
Wrong practice while implementing the educational and technical aspects of the skill.	7	7.14%
Bad warming-up and short duration.	25	25.51%
Bad condition of sports equipment, tools and stadiums.	5	5.1%
Failure to follow the medical guidelines for daily nutrition, diet and rest time.	12	12.24%
Previous and repeated injury to students and failure to complete treatment procedures after the injury.	15	15.30%
Physical lack of fitness for the athlete and lack of fitness in terms of the lack of integration of all fitness components such as (strength - speed - flexibility - fitness)	7	7.14%
Cases of exhaustion or fatigue among students due to previous lectures.	6	6.12%
Wrong distribution of effort, physical loads, and physical rest during skill application as the student is exposed to excessive physical loads.	3	3.06%
Friction between students as a result of direct contact between students during the performance of team games.	18	18.36%

**5. Discussion:**

The researchers attribute the reason for this significance by neglecting the elements of physical fitness and focusing only on one aspect in it such as strength, and lack of interest in inclusive and equal warming up with the type of sporting activity during the lesson .Thus, not all muscle groups are fully and equitably involved in sports activity (Muhammad, 2002), As neglecting the warming up and lack of interest in preparing the muscular system for an effort may lead to the

anatomically short muscles and not being elastic to the degree required by the nature of the movements and skill that the student performs which leads to exceed the physiological limits of the basic muscle elasticity, which increases the chances of muscles cramp students (Raphae ,1997; Swarup, 2014), and this consistent with the previous study by Zahir (2004) which mentioned that the correct warming up helps to increase the speed of the arrival of nerve signals to the muscles and coordinates the work of the muscular nerve so that all the body's systems are ready, especially the respiratory system and the heart and blood vessels that bear the effort, leading to an increase in the rate of blood containing oxygen in the muscles as well as an increase in efficiency . Increase the ability of the body joints to work more flexible (Kyle et al;2001), which corresponds to the study of Muhammad (2002) which demonstrated that warming up has positive physiological and physical effects on athlete body.

In addition to other factors such as improper selection of athletic shoes, and clothes that do not meet the required medical specifications, as well as the incorrect use of sports equipment by students during the lesson (Riyadh, 1998), in addition to playing violently and disrespecting the rules of play, especially team games That require friction, such as football and handball, which leads to ligaments, such as ankle sprain (David et al; 2011).

The researchers also attribute the injuries that occur to the leg and thigh locations as a result of a strong blow due to direct friction with the opponent during the game, especially bruises where injuries are very common, especially in practical lessons that include friction (such as football and handball), where partial rupture of muscle tissue occurs as a result of a strong injury caused by an external factor that causes inflammation and severe bleeding in the affected location (David et al; 2011& Majewski et al; 2006). The researchers also

attribute the cause of injury of the joints of the fingers, especially in combat games, basketball and handball to the external density on the tip of the finger or in the case of strong finger twisting, which directly affects the capsule and the ligaments surrounding it (Kareem, 2009; Kyle et al; 2001). The researcher attributes the reason as well to the continued muscular work for long periods without obtaining adequate rest periods during the performance of practical lessons, and therefore, the discomfort and non-relaxation between exercises especially after making a long effort may lead to physiological changes in the body, thus increase the occurrence of injuries, as in the case of physical fatigue or an imbalance of the muscular nervous system, which leads to erratic performance and cause an injury (Muhammed, 2002, Karim, 2009). In addition to unhealthy nutrition and deficiency of vitamins and salts, which increases the chances of injury such as muscle spasm, moreover, The muscle effort when it is greater than the muscles' ability to bear leads to the wrong performance, causing the student's injury (Zaher, 2004). Moreover, direct injuries are the result of external factors such as pressure or a sudden blow from the opponent such as in cases of broken bones during direct contact between students during the performance of team sports such as football, basketball or handball, which increases the chances of bruises and fractures or while performing individual games such as martial arts and fencing, or it may also be due to negative external forces such as falling or relying on one of the sports equipment as is the case in gymnastics equipments, which leads to dislocation or fractures, in addition to neglect safety rules and indifference to the preventive aspects and Personal neglect by the student and the teacher (Reyaz ,1998 : Ebtisam ,2010)

## **6. Conclusions**

The research concluded that the Knee injuries were the

most common location affected by physical education students, in addition to muscle rupture injuries reported as most common type of injury. The results also showed that bad warming up as one of the main causes of injuries.

## **7. Recommendations:**

It is recommended to Do the warm-up process according to the difficulty of sports activity, which helps all members of the body and muscles to work better in order to work more efficiently and determining the duration of the warming-up, the type of exercise that takes place according to the weather, and the type of activity that includes:

General warming-up / heating all the muscles of the body / special warming-up / according to the type of game or activity you are practicing. As well, the gradual increase in exercise intensity and its duration to be sufficient to raise body temperature. In addition to relax and taking rest after physical exertion to eliminate fatigue.

It is need to developing fitness components such as strength, flexibility, speed, tensile, etc. It is recommended to ensuring the correctness of the devices and tools used in the training and knowing their safety and Keep students away from performing exercises that require direct contact with other students as much as possible and make sure to recover from previous injuries before being allowed to take practical lessons .

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## 9. Appendix No. 1

type of injuries	Agree	disagree	Notes
Sprains			
Fracture			
Muscle rupture			
dislocation			
muscles spasm			
contusion			

Reasons of injuries	Agree	disagree	Notes
Wrong practice while implementing the educational and technical aspects of the skill.			
Bad warm-up and insufficient duration of it			
Bad quality of equipment, tools and sports stadiums.			
Failure to follow the medical guidelines of the daily nutrition, diet, and rest time.			
Bad climatic conditions, like exercising sport in bad climatic conditions, such as a very high temperature or during heavy rains and snow.			
The previous and repeated injury for students and the failure to complete remedial procedures after the injury.			
Physical unpreparedness of the athlete and lack of fitness in terms of the lack of integration of all fitness components such as (strength - speed - flexibility - fitness)			
Cases of fatigue or exhaustion among student due to previous lectures			
wrong distribution of effort, physical loads and physical comfort during the application of the skill where the student is exposed to excessive physical loads			
Friction between students as a result of direct contact between students during the performance of team games			

Locations of injuries	Agree	disagree	Notes
Ankle			
Knee joint			
neck			
Thigh			
Leg			
Ribs			
Spine bone			
Fingers			
Humerus			
Shoulder			
Head			
Back			