Original Article

First Aid Knowledge Among Physical Education Students Toward Sport Injuries: A National Cross-Sectional Study

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ABSTRACT

Objective: This study aims to assess the level knowledge of first aid among physical education students toward sport injuries.

Study Design: A cross sectional study

Place and Duration of Study: This study was conducted at the University of Mosul / College of Physical Education and Sports Sciences from 4th November, 2025 until 1st April, 2026.

Methodology: The study was carried out at the university of Mosul / College of physical education and sports sciences to determine the level of the students' knowledge of first aid for sports injuries. The researchers employed non-probability sampling method (purposive sampling). There were 100 male and female students in the sample. The researchers using SPPS. Version 28 to analysis the data.

Results: The highest age group were 21-23 years (67 respondents, 67.7%) as shown in the table. The number of male students in the sample was 55.6%. Signs of a sprain (74.7%), definition of first aid (73.7%), importance of having a first aid kit in sports venues (73.7%) and prevention of sports injuries through warm-up and stretching (69.7%) had the highest proportions of correct responses.

Conclusion: The overall pattern of the knowledge was very slightly towards the low score category, but not too big a difference between the two.

Key Words: First Aid, Knowledge, Physical Education, Sport injuries.

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INTRODUCTION

First aid according to the World Health Organization (WHO) Community First Aid Response is the initial assessment and immediate intervention performed during a health emergency or injury before professional medical care arrives[1]. Injury is a part of playing sport, especially as it pertains to students who play actively. Participated in physical education activities. With increasing physical demands and competitive sports injuries have become a concern among youth athletes and students in environments[2].

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A knowledge and understanding of mechanisms of injury and injury prevention, and first aid responses are crucial to building a safe sporting culture[3]. Many students in physical education will become coaches, trainers and physical educators. Hence it's essential to provide them with injury awareness and injury prevention knowledge, both of which are essential to them. The safety of people and the well-being of the people they will be training in the future[4]. Injury education is a critically important topic, but many curricula have more of an emphasis on. Despite the need for high technical skills and physical fitness, injury prevention training is not often a priority [5]. According to the National First Aid Science Advisory Board, First Aid involves an assessment and the implementation of interventions that the victim or bystander can perform with little or no medical supplies. But there are some requirements of knowledge and practice to this implementation. Over the years there has been a number of studies which have assessed the level of first aid knowledge amongst various populations including University students conducted worldwide[6]. Some studies have found that large proportions of students in various countries are unable

to perform basic first aid. Similarly, many studies found that most people don't have any first aid training or very little. Possession of a driver's license, completion of a first-aid course at school and higher level of education were all known to be associated with good knowledge[7]. Research shows that more than 50 percent of all post-accident fatalities take place in the first 30 minutes, and 10-35 percent in the first five minutes. However, 38% of all deaths are preventable if the first aid used at the scene is appropriate and informed and it has been proved that first aid given in the first 5 minutes is most effective. 80% of patients in urban areas receive an ambulance in 10 minutes or less and 80% of patients in rural areas receive an ambulance in 16 minutes or less[8]. This study aims to assess the level knowledge of first aid among physical education students toward sport injuries.

METHODOLOGY

A descriptive cross-sectional study was used for this study. The present study was conducted in university of Mosul /College of physical education. A study initiated on January 16th, 2026, and extended through June 2026.The researchers used non-probability (purposive) sampling technique. The sample included (100) males and females students from second, third and fourth academic stages belonging to the college of physical education and sports sciences at university of Mosul. Information was gathered from previous literature related to the same research topic to design a questionnaire. The resulting questionnaire consisted of two parts: the first part included demographic information (Age, gender, study stage, previous study of first aid, participation in training course, regular sports practice and experienced or witnessed a sports injury) of the participant sample. The second part tested students' knowledge of first aid for sports injuries, consisting of 20 multiple-choice questions. This questionnaire was presented to 11 experts of different medical, nursing and statistical fields to test the content of the questionnaire and the research title. Impartiality was assured by excluding the same number of 20 students from the same college from the study, and running a pilot study with them. Lastly, the reliability of the instrument was tested with Cronbach's alpha coefficient with the results that the instrument's internal consistency was obtained at 0.77 which was deemed acceptable. Researchers used the statistical analysis program (SPSS, Version 31) to assess students' knowledge regarding first aid for sports injuries, the researcher using the descriptive analysis included t-test, chi-square, mean, stander deviation, frequency and percentage.

RESULTS

Table (1) reveals that the highest number of participant belonged to age group 21-23 years (67.7%). The male students constituted 55.6% of the sample, whereas, the female students constituted 44.4% of the sample. The study stage of the respondents was dominated by the Second stage students (61 respondents, 61.6%). Almost half (48.5%) said that they had learned a subject or course on first aid before, while 51.5% had not. Table 2: Inferentially, 13 out of 20 items were found at 0.05 significance level, of which 12 were highly significant. This means the students' knowledge was not evenly distributed in the questionnaire. Academically there seems to have been an increased awareness of some common sports injury situations and a lack of awareness of more specific first-aid skills and emergency priorities. None of the socio-demographic variables were significant at the .05 level for the dichotomization of low/high score levels as shown in Table 3.

Table No.1: The Demographic Characteristics of the Sample in the Study

Demographic variable	Category	Freq.	%	C.S.	P-value	Sig.
Age	Less than 20 years	15	15.2%	52.606	<.001	H.S
	21–23 years	67	67.7%			
	More than 23 years	17	17.2%			
Gender	Male	55	55.6%	1.222	0.269	N.S
	Female	44	44.4%			
Study Stage	Second stage	61	61.6%	49.273	<.001	H.S
	Third stage	34	34.3%			
	Fourth stage	4	4.0%			
Previous study of first aid	Yes	48	48.5%	0.091	0.763	N.S
	No	51	51.5%			
Participation in training course	Yes	33	33.3%	11.000	<.001	H.S
	No	66	66.7%			
Regular sports practice	Yes	65	65.7%	9.707	0.002	H.S
	No	34	34.3%			
Experienced or witnessed a sports injury	Yes	76	76.8%	28.374	<.001	H.S
	No	23	23.2%			

Table No.2: Descriptive association between questions related to students' knowledge regarding first aid for sports injuries

Questions	Correct	%	Incorrect	%	Cum.%	C.S.	P-value
Definition of first aid	73	73.7	26	26.3	100%	H.S	<.001
Main goal of first aid	23	23.2	76	76.8	100%	H.S	<.001
First step when dealing with an injured player on the field	31	31.3	68	68.7	100%	H.S	<.001
Correct positioning during a nosebleed	34	34.3	65	65.7	100%	H.S	0.002
Proper action in case of fracture	56	56.6	43	43.4	100%	N.S	0.191
Meaning of the R.I.C.E. method	28	28.3	71	71.7	100%	H.S	<.001
Signs of sprain	74	74.7	25	25.3	100%	H.S	<.001
First step for external bleeding	63	63.6	36	36.4	100%	H.S	0.007
Priority action in case of loss of consciousness	41	41.4	58	58.6	100%	N.S	0.088
Correct action when neck or spinal injury is suspected	52	52.5	47	47.5	100%	N.S	0.615
Proper first aid for muscle cramp	46	46.5	53	53.5	100%	N.S	0.482
Recommended duration of ice application	42	42.4	57	57.6	100%	N.S	0.132
Appropriate action in head injury	65	65.7	34	34.3	100%	H.S	0.002
First aid for elevated body temperature during exercise	47	47.5	52	52.5	100%	N.S	0.615
Importance of having a first aid kit in sports venues	73	73.7	26	26.3	100%	H.S	<.001
Proper response to a seizure in an athlete	15	15.2	84	84.8	100%	H.S	<.001
Best way to prevent sports injuries	69	69.7	30	30.3	100%	H.S	<.001
Recommended action in exercise-related dehydration	60	60.6	39	39.4	100%	S	0.035
Symptoms of shock	40	40.4	59	59.6	100%	N.S	0.056
Characteristics of a good first aider	66	66.7	33	33.3	100%	H.S	<.001

Table No.3: Association between Score Level and Socio-demographic Variables

Variable	Category	Low score n	Low score %	High score n	High score %
Age	Less than 20 years	6	40.0	9	60.0
	21–23 years	39	58.2	28	41.8
	More than 23 years	7	41.2	10	58.8
Gender	Male	29	52.7	26	47.3
	Female	23	52.3	21	47.7
Study Stage	Second stage	31	50.8	30	49.2
	Third stage	21	61.8	13	38.2
	Fourth stage	0	0.0	4	100.0
Previous study of first aid	Yes	23	47.9	25	52.1
	No	29	56.9	22	43.1
Participation in training course	Yes	19	57.6	14	42.4
	No	33	50.0	33	50.0
Regular sports practice	Yes	33	50.8	32	49.2
	No	19	55.9	15	44.1
Experienced or witnessed a sports injury	Yes	36	47.4	40	52.6
	No	16	69.6	7	30.4

Table No.4: Comparison of mean total knowledge score according to socio-demographic variables

Variable	Category	n	Mean ± SD	Test	Statistic	P-value	Sig.
Age	Less than 20 years	15	10.40 ± 4.37	ANOVA	0.644	0.528	N.S
	21–23 years	67	9.81 ± 3.60				
	More than 23 years	17	10.88 ± 3.39				
Gender	Male	55	9.84 ± 3.69	t-test	0.738	0.462	N.S
	Female	44	10.39 ± 3.68				
Study Stage	Second stage	61	10.38 ± 3.31	ANOVA	4.369	0.015	S
	Third stage	34	9.06 ± 4.07				
	Fourth stage	4	14.25 ± 1.71				
Previous study of first aid	Yes	48	10.23 ± 3.57	t-test	0.389	0.698	N.S
	No	51	9.94 ± 3.80				
Participation in training course	Yes	33	9.21 ± 3.30	t-test	-1.760	0.083	N.S
	No	66	10.52 ± 3.80				
Regular sports practice	Yes	65	10.57 ± 3.23	t-test	1.694	0.096	N.S
	No	34	9.15 ± 4.30				
Experienced or witnessed a sports injury	Yes	76	10.82 ± 3.17	t-test	3.318	0.002	H.S
	No	23	7.65 ± 4.23				

However, a few descriptive differences should be noted. The percentages of students with high scores were relatively higher in the 4th stage (100.0%, but represented a small group), students with prior experience of or witness to a sports injury (52.6% high score), and students younger than 20 years or older than 23 years compared to those aged 21–23 years. Table 4: Descriptively, highest mean total score was obtained by fourth stage students (14.25 ± 1.71), students who have experienced or witnessed sports injuries (10.82 ± 3.17), students more than 23 years old (10.88 ± 3.39) and students who were involved in sports regularly (10.57 ± 3.23). The mean score of the students without any exposure to injury were definitely lower (7.65 ± 4.23). Academically significant, as the result suggests that background variables alone might not be as effective as direct exposure to sports injury situations in learning to recognize and be aware of first-aid.

DISCUSSION

The results indicate that the level of knowledge about first aid for sports injuries among the Physical Education College students is moderate and is somewhat scattered. Nearly half of the students earned a high score, but the group as a whole was skewed slightly toward the low score. This means that pupils have a good general understanding of first aid but many lack a good awareness in every set of questions on the questionnaire. There was a positive correlation between prior first aid experience and the first aid knowledge among students. The findings are similar to those obtained in a study that was done in Turkey. This research is similar to that of [9,10]. The student's average knowledge of handling sports injuries is 61.8. The mean of internal and external handling sports injuries knowledge are 56.14 and 64.91 respectively. It is bad because students' knowledge has not been optimized so that it will have an impact on their ability to deal with sports injuries as they play or practice sports. Statistically significant relationships were not found with the 7 demographic variables: score-level association analysis. The mean-score comparison was more sensitive, however. Specifically, study stage and previous experience and observation of sports injuries were significantly correlated with mean knowledge scores, while a similar relationship was observed among the university students [11,12]. Also, a study revealed that the vast majority of people lacked any first aid training and that there was a direct correlation between first aid training and type of first aid measures taken by general population who witnessed accidents[13].This study challenges the findings of [14,15] that females were knowledgeable more than males regarding first aid procedure. The results of a survey carried out in India, which showed that 11.5% of boys and 15.4% of girls had strong understanding about first aid procedures. The study coincides with [17,18], where the students in the study year showed low knowledge, which may be due to the low study year of the students of health sciences college.[19,20] The overall response confirms the necessity for improving the knowledge of first-aid in college related to sports injuries. Repeated field-based refresher sessions, simulation sessions, demonstration-based teaching and practical workshops may be useful when consolidating knowledge in high-risk areas, including: seizures, loss of consciousness, external bleeding, and initial assessment on the field. Students in a PE setting are likely to be one of the first people on the scene when sports injuries occur, thus it is academically and practically significant to improve these competencies.

CONCLUSION

According to the statistics, there were highly significant or significant distributional differences in age, training

course participation, regular sports practice, previous experience/witnessing of sports injury, but not in gender or previous study of first aid. The overall pattern of the knowledge was very slightly towards the low score category, but not too big a difference between the two.

Author's Contribution:

Concept & Design or acquisition of analysis or interpretation of data:	Harith Fathi Khudhayer Al-Aubaidy, Nasir Muwfaq Younis
Drafting or Revising Critically:	Hiba Jasim Hammood, Nasir Muwfaq Younis
Final Approval of version:	All the above authors
Agreement to accountable for all aspects of work:	All the above authors

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