

Knowledge and management of first-aid skills between medical and non-medical students at King Saud University

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ABSTRACT

Objectives: The study aims to determine the knowledge of first-aid management in medical and non-medical students and how they will act in certain situations. **Methods:** A cross-sectional study has been conducted on a convenience sampling of 375 (medical and non-medical) students. The research proposal was approved by the IRB Committee of King Saud University. The data has been obtained randomly by a validated questionnaire in a sample of 381 participants. The questionnaire had items related to knowledge and management of first-aid skills. The study was conducted from August 2020 to May 2021 in King Saud University. **Results:** The participants in the current study were medical (53.02%) and non-medical students (46.98%). Overall results showed that all students possessed a good knowledge of first-aid management, but medical students possessed more knowledge in comparison to non-medical students. The awareness of students related to first-aid management was found to be 32.02% 'high', 56.43% 'middle' and 11.54% 'low'. Moreover, results illustrated that medical students are more interested to attend first-aid courses than non-medical students by 60.4% and 43.6% respectively. **Conclusion:** The study revealed the participants' knowledge and management were not adequate. A statistically significant association was found between being a medical student and having a high level of knowledge about first aid. Awareness campaigns must be conducted to increase awareness among the non-medical community about first-aid knowledge, and how it is essential for every individual.

Keywords: Basic life support, first aid, knowledge, medical, non-medical, students, Universities management

Introduction

Prior to receiving any medical assistance, an ill/injured person receives emergency care or treatment through somebody who applies first-aid skills to that particular person. First aid is given to wounded or sick people in life-threatening situations in order

to save them, avoid further deterioration, or aid in the treatment process before professional medical help arrives. This applies to evaluations and interventions that a bystander (or the victim) may perform with little or no medical equipment.^[1] Preserving life, alleviating pain, avoiding further illness or injury, and facilitating recovery are the objectives of a first-aid provider.^[2]

Students are taught ways to handle emergencies in a hospital emergency setting where one can get medications and other needs. However, proper knowledge is needed for treating an

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incident outside of a hospital environment may not be sufficient at the scene of the accident or emergency.^[3,4]

A cross-sectional study of 386 students in Karachi University in Pakistan was undertaken between June 2018 and January 2019. The knowledge of KU students on common first-aid incidents was found to be lacking. They did, however, exhibit a curiosity in learning this information. It is necessary to raise general awareness about its acquisition among populations.^[5] Also, another study identified that both medical students and non-medical students lacked specifics on assessing patient status, prioritizing injuries, and utilizing first-aid kit supplies.^[6] Non-medical students, on the other hand, are not taught how to perform pre-hospital first aid. As a result, many victims perish or become disabled. A cross-sectional survey of 1315 multi-disciplinary students was done from December 2020 to February 2021 using a self-administered questionnaire with three-level Likert scale questions about first-aid awareness. According to the findings, knowledge among multidisciplinary university students is extremely poor, and significant steps must be taken to improve it.^[7]

Therefore, one of the most critical public demands is first aid for minor injuries and incidents that any general person may encounter at any time and location.^[8] However, the adequate knowledge required for handling an emergency out of the hospital setting at the site of the accident may not be sufficient as most medical schools do not have formal first-aid training in the teaching curriculum.^[9]

In Saudi Arabia, the number of road traffic incidents have risen dramatically, and people may face life-saving situations at the scene of accidents before being transported to hospitals for medical treatment, with road traffic injuries accounting for 80% of hospital deaths.^[10] Citizens may find it difficult to provide first aid in the event of an accident due to lack of trust and expertise in this field. Cardiopulmonary resuscitation (CPR), bleeding control, burn and fracture management are some of the most commonly used first-aid techniques.^[11] Therefore, the aim of this study is to determine the level of understanding, experience, attitude, and practice of first-aid skills among university students at King Saud University (KSU) in Saudi Arabia pursuing various courses.

Methods

Study setting

The current study was carried out across different colleges in KSU. The current study has been conducted from November 2020 to February 2021. This includes medicine, dentistry, science, and finance colleges.

Study design and survey instrument

A cross-sectional analytical study has been performed that uses an online self-administered questionnaire located in Google Forms. The questionnaire is composed of 27 validated

questions which was previously used in a similar study published in Taif, Saudi Arabia.^[12] A few modifications have been done to certain questions in order to fit the study group and meet the present inclusion criteria. The Institutional Review Board at King Saud University College of Medicine reviewed and approved the current study (No. E-20-5427 and approval date: 12/11/2020).

Target population and sample size

The current study's target population is medicine, dentistry, finance, and science colleges.

The students at KSU include male and female. Using convenient random sampling, the sample size was calculated considering 5% significance, 95% confidence level, and an estimated population of 3000 students. After adding 10% for lost and incomplete data, sample size will be 375 students.

Inclusion and exclusion criteria

The inclusion criteria include students at KSU in medicine, dentistry, science and finance colleges between 19 and 23 years old. Any participants that failed to meet these criteria were excluded.

Data collection and sampling technique

A validated questionnaire was used to collect the data which was distributed by electronic forms to the participants. A written permission through e-mail was taken from the corresponding author of the study titled "Awareness, knowledge, attitude and practices of first-aid skills among medical and non-medical students" published in Taif.^[12] The questionnaire included items related to knowledge and management of first-aid skills. A convenient random sampling technique was used to collect the data.

Ethical considerations

Ethical approval was obtained from the IRB committee of King Saud University (No. E-20-5427, November 12, 2020). Students were able to freely and voluntarily accept being interviewed and the data was maintained in a confidential manner.

Statistical analysis

Data analysis was done by the Statistical Package for the Social Sciences (SPSS) program version 21. Chi-square test of independence was used to determine the difference between medical and non-medical students toward the knowledge of first aid.

Results

The present study included 381 students studying different programs at King Saud University. The research had 202 (53.02%) of participants from medical colleges, 179 (46.98%) from non-medical colleges. [Table 1] The awareness of participants regarding first aid was found to be 32.02% 'high', 56.43% 'middle', and 11.54% 'low' [Table 2].

There was a statistically significant relationship of awareness scale observed with departments of participants. 42.8% of the participants reported that their university had a first-aid kit, and the awareness was 'excellent' as 94.5% answered the contents of the first-aid box correctly.

The study showed that the knowledge of vital signs of human beings is 89.6% and 77.7% for blood pressure and pulse rate, respectively, in medical students, in contrast, it is 69.3% and 76%, respectively, in non-medical students.

In the present study, 50.7% (n = 193) of the participants reported that they had first-aid information from the teachers. However, 49.9% (n = 190) students prefer to take the information from doctors. The findings of the study showed that knowledge of performing procedures in measuring the pulse rate and blood pressure is highly associated with medical students by 81.2% (n = 164) and 72.8% (n = 147), respectively. On the other hand, it is 41.9% (n = 75) and 30.7% (n = 55) for non-medical students. In the current study, the students were about their attitudes in some situations and in general,

it was found that medical students behave correctly in all situations [Table 2].

The mean score of awareness items in our questionnaire was found to be 8.07% for medical students and 6.55% for non-medical students [Table 3].

The study showed that among all students, 230 (60.4%) of them attended first-aid courses. Medical students were more interested in attending first-aid courses by 75.2% (n = 152). However, 78 out of 179 (43.6%) of non-medical students attended first-aid courses [Table 4]. Questionnaire responses representing collages perspectives toward first aid was showed in [Table 5].

Discussion

Awareness and knowledge regarding first aid play a crucial role in saving others' lives, and the current research aims at students especially those who are pursuing a medical career, as they are tomorrow's lifesavers. There is an increasing possibility in medical students' lives that they will encounter a life-saving situation both inside and outside the college that requires them to do a first-aid intervention, which could help improve the medical condition of the patient before transferring him/her to the hospital.

The current study showed that more awareness was found in medical students compared to other non-medical students or students pursuing other science courses.

A study was done in Pakistan in 2020 regarding first-aid management, aspects show that one of the findings was the positive impact of burn first-aid training on the average knowledge score of the participants. Students who have received some form of formal training have gained a higher mean knowledge score ($P < 0.01$).^[13] In another study, done by Wallace *et al.*,^[14] 15% more participants provided correct responses if they had previously attended a first-aid course, as compared to those who had no.

A study carried out in Kuwait by Al-Khamees reported that the awareness regarding first aid was more in health science students than literary students. The reason for increased awareness among medical students could easily be explained based on factors such as the acquaintance or association of them with the profession, which makes them realize the importance of first aid more than others. Today's world requires students to have awareness of first aid in order to help others or themselves in the event of any accident or emergency.^[15]

The results of the study showed that there was a statistically significant relationship between being a medical student and high awareness, knowledge, and attitude about first aid.

An institution needs to provide resources to increase the awareness of first aid especially among non-medical students as

Table 1: Demographic data

Variable	Count	Total
Gender		
Males	185	381
Females	196	
Collage		
Medical	202	381
Non-medical	179	

Table 2: Knowledge level about first aid among medical and non-medical students

	Students			Total
	High	Middle	Low	
Medical	89	103	10	202
Non-medical	33	112	34	179
Total	122	215	44	381

Chi-square tests

	Value	df	Asymptotic significance (2-sided)
Pearson Chi-square	37.922a	2	0.000

Table 3: Attending of first-aid course and knowledge level among medical and non-medical students

	Students			Total
	High	Middle	Low	
Attended a first-aid course				
Yes	97	124	9	230
No	25	91	35	151
Total	122	215	44	381

Chi-square tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-square	48.631a	2	0.000

Table 4: Questionnaire responses representing knowledge about first aid

	Participants		Total Students
	Medical Students	Non-Medical Students	
Q1 – Gender:	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Male	94 (46.5)	91 (50.8)	185 (48.6)
Female	108 (53.5)	88 (49.2)	196 (51.4)
Q2 – Have you attended a first-aid course?			
Yes	152 (75.2)	78 (43.6)	230 (60.4)
No	50 (24.8)	101 (56.4)	151 (39.6)
Q3 – The first-aid box must contain the following:			
Gauze or tie, scissors, gloves, medical needles, medical instructions, respirators, choose at least one	198 (98)	162 (90.5)	360 (94.5)
I do not know	4 (2)	17 (9.5)	21 (5.5)
Q4 – Do you know the number of the Saudi Red Crescent Authority to call when absolutely necessary?			
Yes	171 (84.7)	128 (71.5)	299 (78.5)
No	31 (15.3)	51 (28.5)	82 (21.5)
Q5 – Do you think your information in first aid is sufficient?			
Yes	18 (8.9)	12 (6.7)	30 (7.9)
No	112 (55.4)	118 (65.9)	230 (60.4)
To some extent	72 (35.6)	49 (27.4)	121 (31.8)

Table 5: Questionnaire responses representing collages perspective toward first aid

	Participants		Total Students
	Medical Students	Non-Medical Students	
Q1 – Does the curriculum of university courses contain information related to first aid?	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Yes	153 (75.7)	87 (48.6)	240 (63)
No	49 (24.3)	92 (51.4)	141 (37)
Q2 – Does your college have a special department for first aid?			
Yes	77 (38.1)	50 (27.9)	127 (33.3)
No	5 (2.5)	16 (8.9)	21 (5.5)
I do not know	120 (95.4)	113 (63.1)	233 (61.2)
Q3 – Is there a first-aid kit in your college?			
Yes	110 (54.5)	53 (29.6)	163 (42.8)
No	9 (4.5)	14 (7.8)	23 (6)
I do not know	83 (41.1)	112 (62.6)	195 (51.2)

this could help the students to understand the importance of basic life support that should be given to any person in need.

Knowing the value of a first-aid box is important as well as its content and how to use it; in the present study, it was found that medical students have more knowledge (98%) compared to non-medical students about first-aid box contents (94%).

Conclusion/Recommendations

The study showed that 44.05% ($n = 89$) of medical students and 32.02% ($n = 64.7$) of non-medical students had a high level of knowledge about first aid, which was considered to be unsatisfactory. A statistically significant association was found

between being a medical student and having a high level of knowledge about first aid.

The research aims to increase the awareness in non-medical students along with increasing community awareness of the importance of first aid and how to properly handle emergency cases. A first-aid management course should be added as a bonus to university students to encourage them to get the knowledge about first-aid management. Also, a basic life support (BLS) course should be added in the first year for the medical students because it is important for increasing awareness and knowledge among the students.

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Conflicts of interest

There are no conflicts of interest.

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