

Knowledge of First Aid Skills among Medical Students in King Khalid University, Abha, Saudi Arabia

*Hassan M Al-Musa, *Rishi Kr. Bharti, *Awad S. Alsamghan, **Muhannad Asiri, **Mohammed Saeed Alqahtani, **Dlaim Al-qahtani, **Faisal Al-Malwi, **Ashwaq Asiri, **Bayan Al jobran, **Khalid Al-malwi

*Department of Family and Community Medicine, **Medical Student, College of Medicine, King Khalid University, Abha, P.O. Box 641, Kingdom of Saudi Arabia.

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ABSTRACT

The objective of the study was to assess the level of knowledge of medical students in providing first aid to the patients. A cross-sectional study was carried out at four Medical Colleges of King Khalid University (KKU). A structured questionnaire of first aid skills obtained from Saudi Red Crescent Authority was used. Based on the scores of corrected answers obtained in each condition requiring first aid, the overall knowledge was graded. The study population was 703 comprising of 394 male (56%) and 309 female students (44%). Their age ranged between 18 and 26 years with a mean of 21.71 ± 1.56 years. Only 131 (18.6%) had received a first aid provider certificate and 53 (7.5%) of students had been certified for BLS. Above 70% of corrected answers was observed in 64 (9%), 50-70% of corrected answers in 169 (24%) and less than 50% of corrected answers in 470 (67%) participants. The percent number of correct answer was significantly associated with the type of college, academic year and obtaining first aid training and BLS certified ($p < 0.05$). This study showed poor knowledge about first aid among the medical students at KKU. There is thus a need for formal first aid training to be introduced in the medical curriculum to improve the basic skill among all the students.

KEY WORDS: basic life support (BLS); first aid, knowledge; medical students

INTRODUCTION:

First Aid can be defined as the emergency treatment of illness or injury in order to maintain life, to ease pain and to prevent deterioration of the patient's condition until professional medical help can be obtained.^[1] The component of first aid skills including CPR, dealing initially with orthopedic cases, back and neck injuries, toxic chemicals and poisoning, and all burn types.^[2] Awareness and knowing of first aid skills is most essential for all populations especially for those who are in medical failed practice, and the course should be integrated in our college's curriculum.

There are bad outcome of accidents due to lack of health care providers.^[3] According to General

Authority for statistics in KSA in 1436 H, out of the number of 41561 fractures cases, surprising only neck and back injuries reach to 30263 case, 779 case of burns and asphyxia cases 467 case.^[4] The number of accidents are highly increasing in Kingdom to reach 518795 accidents out of which 32163 accidents of those are in Asser region in particular according to Ministry of Interior in 1436 H.^[4]

In USA, the leading cause of death for 350,000 per year is cardiac arrest out of hospital. The survival in cardiac arrest cases depends on immediately getting CPR from someone nearby and unfortunately, only 46% of people who experience an out-of-hospital cardiac arrest get the immediate help that they need before professional help.^[5] A study conducted in the University of Jordan reported that only around one third of students had previous first aid experience.^[3] Only 17.5% of students had formal first aid training in Pakistan showing (p value < 0.001) in comparing between trained and non trained students in answering correctly.^[6] Another reports that majority of medical students are not having good knowledge of

Corresponding Author:

Dr Rishi Kr. Bharti,

Family & Community Medicine, College of Medicine, King Khalid University, Abha, PO Box 641, Kingdom of Saudi Arabia

E-mail: fcmcomkku@gmail.com;

rishindia216@gmail.com



first aid skills (good score only in 21 students out of 152) and therefore it is recommended to introduce formal first aid training in medical curriculum.^[7] First Aids are simple and quick steps that can be done outside the hospital with minimal or no medical equipment, aiming to temporarily stabilize the victim's condition or at least relieve pain and prevent worsening of their condition until the arrival of emergency medical services. Accidents are considered to be serious and they're frequently encountered on daily basis, and they result in bad outcomes due to unavailability of health care providers.^[8]

In this study, we specified most common accidents. Basic first aid for bleeding, choking, seizure, hypoglycemic attack, burns, fractures, nasal bleeding, poisoning, asthma attack and fainting should be known by everyone.^[9] The future health care providers in the community are students of health science colleges. First aid is not difficult. It needs a good attitude, adequate knowledge, skills and with a few simple steps everyone will be able to deal with any accident^[10]. Health science students generally and medical student especially even in their early years of studying are expected by the general population to know how to do first aid to an injured victim and save lives. Several studies have been conducted around the world to evaluate the level of knowledge about first aid among different groups including university students. Some studies have shown high percentage of students in different countries lacking the appropriate first aid knowledge^[11,12,13,14,15]. Similarly, different studies have shown that majority of people had little or no first aid training^[16,17,18]. Many factors have been linked with better knowledge of first aid, including taking a first aid course during school^[13,14], having a driving license, or having a higher level of education^[17]. Few reports assessing the first aid knowledge were carried out in Arab countries^[15,19,20] and most of them reported that university students have poor levels of first aid knowledge.

On review of literature, data shows that there is no such study has been conducted before in Aseer region. Hence, this study necessitated to explore the level of knowledge of health science students regarding first aid. This study aimed to assess the knowledge among students of the Medical College at King Khalid University.

MATERIALS AND METHODS:

A cross-sectional study was carried out amongst students of medical students at King Khalid University (KKU). Ethics approval, anonymity of

respondents, consent form, and other ethical issues were considered. The objectives of this study were to assess knowledge of first aid among students of medical college at KKU.

A structured questionnaire containing socio-demographics data and knowledge of first aid skills were derived from Saudi Red Crescent Authority. The questionnaire contains 24 questions about different first aid aspects beside demographic characteristics. The data gatherers were available to answer any questions. The questionnaire was pre-tested before introducing to the students.

Students from level three enrolled (second academic year) were eligible for the study and calculated sample size was based on 50% prevalence and 5% precision with 95% confidence. The eventual sample size achieved was 703. The criteria to assess the knowledge skills are based on the score number of corrected answers. A score of less than 50% was considered as 'Poor Knowledge' about first aid. A score of, or between 50 -70% was considered as 'Moderate', and of, or above, 70% as 'Good'. The data collected from these questionnaires were analyzed using SPSS for Windows version 21 (SPSS Inc, Chicago, IL,USA).

Frequency tables were analyzed with mean and standard deviation. Chi square test were applied to observe the association between the demographic characteristic and level of knowledge. p-value less than 0.05 was considered as statistically significant.

RESULTS:

Out of 703 students participated in this study, 394 (56%) were male and 309 (44%) were female. Among these students, 253 (36%) were from medical college, 200 (28.4%) from dental college, 161 (22.9%) from pharmacy college and 89 (12.7%) were from applied medical college. The mean age was 21.72±1.56 years (range, 18–26 years). The students enrolled in the study were: 180 (25.6%) students from second year (level 3 and 4), 155 (22%) from third year (level 5 and 6), 172 (24.5%) from fourth year (level 7 and 8), 115 (16.4%) from fifth year (level 9 and 10) and 81 (11.5%) from sixth year (level 11 and 12). Their mean GPA was 3.9 with standard deviation 0.63. 326(46.4%) of students had received a training like first aid, but only 131 (18.6%) had received a first aid provider certificate. Only 53 (7.5%) of students had been certified for BLS (Table 1).

471 (67%) of students answered less than 50% items correctly which indicate poor knowledge and 169 (24%) of students answered 50-70% of

Table 1: Basic characteristic of the included medical students from KKU University (n = 703).

Characteristic	N (%)
Gender	
Male	394 (56)
Female	309 (44)
College	
Medicine	253 (36)
Dental	200 (28.4)
Pharmacy	161 (22.9)
Applied medical sciences	89 (12.7)
Years of enrollment	
Second	180 (25.6)
Third	155 (22)
Fourth	172 (24.5)
Fifth	115 (16.4)
Sixth	81 (11.5)
Age in years (Mean SD)	21.7 1.56
GPA Score (Mean SD)	3.9 0.63
Receive any training like first aid	
Yes	326 (46.4)
No	377 (53.6)
Receive a first aid provider certificate	
Yes	131 (18.6)
No	572 (81.4)
Certified for BLS	
Yes	53 (7.5)
No	650 (92.5)

questions correctly which indicate moderate knowledge and only 69 (9%) of students answered more than 70% of questions correctly which indicates good knowledge. The percentage of correct answer is less than 50% in most of the assessment points inferring poor knowledge skills for all students (Table 2). The students have good knowledge (the percent of correct answers more than 70%) for 'decreased blood sugar' (N=617; 87.8%) and have moderate knowledge in 'the medical system for providing first aid' (n=480; 68.3%), 'conscious and struggling to fight drowning' (n=472; 67.2%), 'asthmatic attack' (n=455; 64.7%), 'epileptic (convulsive) attack' (n=444; 63.2%), 'suspect spinal injury' (n=436; 62%), 'causing redness and bullae' (n=377; 53.6%), 'a foreign body embedded in body' (n=368; 52.4%) and 'chest compressions' (n=352; 50.1%). While in all other assessment points, the students have poor knowledge.

Amongst medicine college students, 58.1% answered correctly less than 50% of question, 20.2% answered 50-70% of questions, 21.7% answered correctly more than 70% of questions. Amongst dental

college students, 65.5 % of them answered correctly less than 50% of question, 22% answered 50-70% of questions, 12.5 % answered correctly more than 70% of questions (Table 2). Amongst pharmacy college students, 82 % of them answered correctly less than 50% of question, 9.3% answered 50-70 % of questions, 8.7% answered correctly more than 70% of questions. Amongst applied medical college students, 67.4 % of them answered correctly less than 50% of question, 13.5% answered 50-70% of questions, 19.1% answered correctly more than 70% of questions. It is clear that most had poor knowledge in Pharmacy College and good knowledge in Medicine College (Figure 2a).

82.8% of second year student, 69% from third year, 63.4% from fourth year student, 60% from fifth year and 44.4% from sixth year had answered correctly less than 50% of questions, while 12.1% of second year student, 21.3% from third year, and 27.3% from fourth year student, 29.6% from fifth year and 40.7% from sixth year had answered correctly 50-70% of questions. Only 5% of second year student, 9.7% from third year, and 9.3% from fourth year student, 10.4% from fifth year and 14.8% from sixth year had answered correctly above 70% of questions. It is inferred that there is observed effect of academic year on gaining more knowledge about first aid. (Figure 2b). There is significant relation between academic year and the percentage of correct answer ($p < 0.05$). (Table 3).

Seventy four percent students who did not receive first aid certificate answered less than 50% correctly, whereas only 35% students could answer correctly those who had first aid certificate. Few students 6.5 % who had not received first aid certificate answered more than 70% and this percentage of correct response was increased by 20.6% in those who received first aid certificate (Figure 2 C).

From table (3), there is a significant relation between answered correctly and having first aid certificate ($p < 0.05$). From figure (d), 69.2% of student that had been certified to BLS answered less than 50% of questions correctly, while this percent reduces to 37.7% for students that hadn't been certified to BLS. 7.5% of students that had been certified to BLS answered above 70% of questions correctly, while this percentage increased to 28.3% for students that hadn't been certified to BLS. there is a significant relation between answered correctly and having first aid certificate ($p < 0.05$) (Table 3).

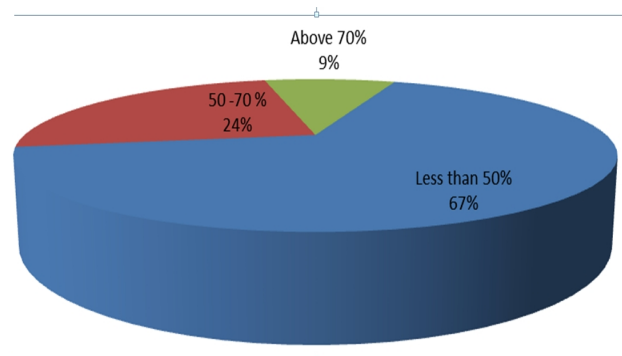
Table 2: The percentage of correct response for each item in first aid questionnaire for medical students colleges (n=703).

Items	N	%
If you see someone suffering from decreased blood sugar, what should you do?	617	87.8%
The medical system for providing first aid	480	68.3%
What should you do if you find someone conscious and struggling to fight drowning, and you know to swim?	472	67.2%
How can you help someone with an asthmatic attack?	455	64.7%
How can you help someone with an epileptic (convulsive) attack?	444	63.2%
You must suspect spinal injury in a victim if you notice	436	62.0%
If the burn is causing redness and bullae (fluid filled sacs) then it is a:	377	53.6%
What should you do if you find someone with a foreign body embedded in their body (a knife or a sharp object):	368	52.4%
The correct site to give chest compressions is	352	50.1%
External bleeding can be stopped by:	341	48.5%
The main sign of heart attack is	338	48.1%
CPR (Cardiopulmonary resuscitation) aims at:	327	46.5%
Chemical burns are treated by:	299	42.5%
What should you do if you find someone with epistaxis (bleeding from the nose):	291	41.5%
IF you find an unconscious victim, you should check their level of consciousness by:	284	40.4%
One of the important principles in first aid	283	40.3%
What should you do to help someone who's choking?	282	40.1%
One of the four principles for managing an emergent situation is:	237	33.7%
For one rescuer, the correct ratio of chest compressions to breath is:	206	29.3%
Second degree burns are treated by:	203	28.9%
One of the main treatment for heart attack is:	186	26.5%
If you suspect someone is having a brain stroke, you should quickly act by following FAST, what does FAST stand for?	161	22.9%
Unlike heatstroke, heat exhaustion is characterized by	125	17.8%
In case someone suffers from a poisonous snake bite	28	4.0%

Table 3: Association between percentage of correct answer and college, year, have first aid certificate and certified to BLS.

Variables	Chi-square	p-value
College	30.25	0.00
Year	43.23	0.00
First aid certificate	71.19	0.00
BLS Certified	32.82	0.00

Figure 1: The percentage of correct response for KKU medical student's college.

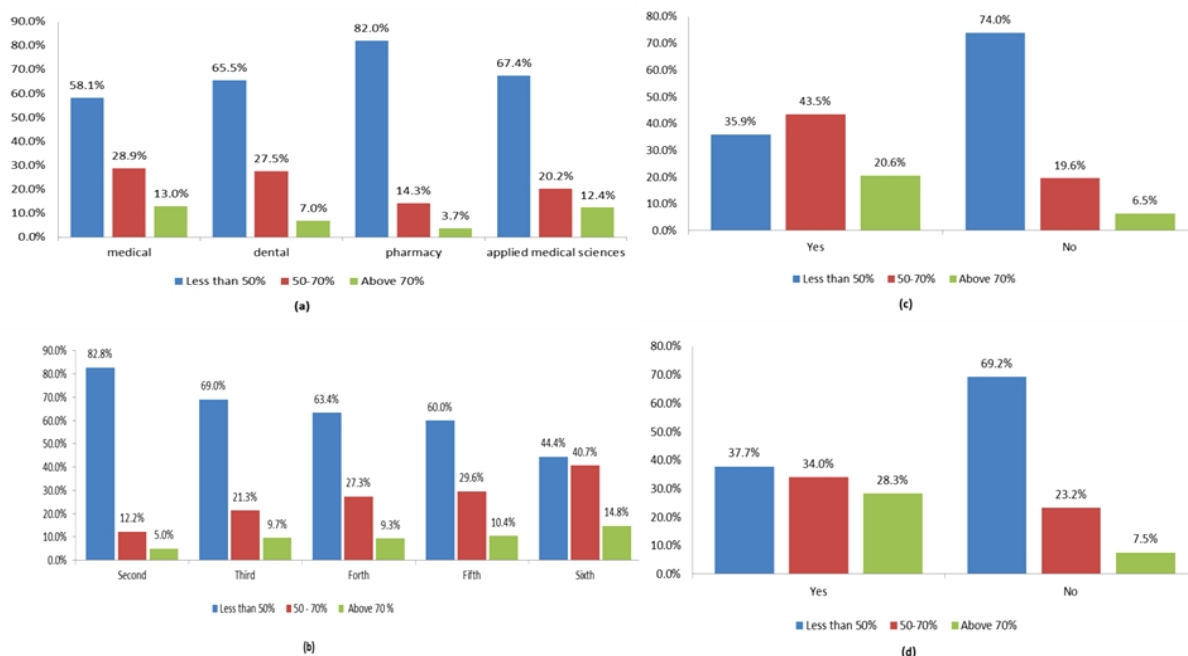


DISCUSSION:

The percentage of corrected answer of the students was very low (67%). This lack of knowledge of first aid amongst the university students is indicative of the fact that only a few people have formal first aid. Also, very few students had good knowledge about first aid and this was influenced with the status of training received previously in first aid procedures. The result of current study reveals lack of knowledge and skills of first aid in most medical colleges. Similarly, a Peruvian study reported that in spite of 52.5% medical students having had prior training, 60.4% had poor knowledge about first aid^[7]. This agreed with most previous studies^[6]. A Dutch study reported 81% of junior doctors to be having poor knowledge about first aid^[4]. A study conducted in Lucknow, India showed that there was less than adequate knowledge (52%) and practices (54%) in all groups of participants (resident doctors, hospital consultants, and private practitioners)^[7].

First Aid training is hence required at medical colleges. In addition, it has to be reinforced periodically with refresher training workshops in first aid. The Peruvian study found a significant association between knowledge about first aid and medical

Figure 2. Distribution of the percent of corrected answers by a) college b) year c) have first aid certificate d) certified to BLS.



college^[7]. Senior students in this study had significantly better knowledge about first aid compared to juniors, which was similar to findings of other studies. The difference in the effect of taking first aid certificate was observed in this study. There is significant association between knowledge about first aid and taking first aid certificate or BLS certified.

CONCLUSION:

The level of knowledge about first aid was not good among most of the students. This study thus identified the need for introducing formal first aid training classes for medical students, so that the trained students are competitive enough to provide first aid correctly in real life situations. This should be complemented with practical training or activities in order to increase students' experiences and confidence level in practical procedures. This training should be refreshed at periodic intervals, as in the present study, the level of knowledge in first aid did not differ between students with previous training and those without. More such studies should be conducted to evaluate the knowledge and skills of first aid among medical students.

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