

## Knowledge and Attitude of First Aid Skills among Health Science Students at Taibah University

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### Abstract

**Background:** First aid is a simple step that done outside the hospital setting to save someone's life or prevent condition from worsening until arrival of health care providers.

**Objective:** Assess awareness about first aid knowledge among the female students of health science colleges before and after awareness presentation.

**Methodology:** A cross-sectional study was done among the female students of health science colleges through pre- and post- awareness assessments. Thirteen selected multiple choice questions about various emergency accidents were included in the questionnaire. The awareness presentation contained how to deal with the various emergency accidents was sent to the students via email and the comparison before and after the awareness presentation was analyzed.

**Results:** A total of 110 female students participated in this study. Only, 58 students completed the answers of the questionnaire to compare between pre- and post- awareness with the response rate of 52.7%. There was a statistically significantly improvement in the best dealing with many situations such as checking for any hazards before doing first aid, loss of consciousness if victim can breathe or not, applying pressure in bleeding limb, supporting the fractured bone with a cushion, cooling the burn under cold water, putting the victim in safe place in convulsion and sit the patient and give him the medication in asthmatic attack.

**Conclusion:** This study showed inadequate knowledge about first aid among the female students. Health science students at Taibah University need first aid training program in their curriculum to improve the basic skill about it.

**Keywords:** First aid; Health providers; Emergency accidents

### Introduction

First aid is a quick, temporary and simple step with minimal or no medical equipment that is done outside the hospital in order to save someone's life or at least relive pain and prevent condition from worsening until the arrival of health care providers that is the main aim of first aid [1-3].

The future health care providers in the community are students of health science colleges. First aid is not difficult, it needs a good attitude and a few simple steps with adequate knowledge and skills that make anyone deal with any accidents [1].

Health science student generally and medical student especially even in their early years of studying are expected by general public to know how to do first aid to an injured patient and save live.

In this study, the most common accidents that usually people face in their life were specified. Basic first aid in emergency of bleeding, choking, seizure, hypoglycemic attack, burns, fractures, nasal bleeding, poisoning, asthmatic attack and fainting should be known by everyone [3].

### Objective

To evaluate the knowledge of first aid among female health science students at Taibah University before and after awareness presentation.

### Methodology

This study was to assess awareness about first aid skills among the female students of health science colleges at Taibah University in Al-Medina between November 2015 to February 2016. The selected health science colleges were College of Medicine, Nursery and Dentistry. This research was approved by the College of Medicine Research Council Ethical Committee of Taiba University [3].

The participants in this study were approximately 110 randomly chosen with ages ranging between 19 and 26 years [1]. A questionnaire was distributed to 110 female students through "collective data collection" and 110 female students participated and the post-awareness which was "emailed" questionnaire distributed to 110 students and the participated were 58 students. The questionnaire includes 19 questions ranging between 5 open ended questions and 14 closed ended which is multiple choice questions on topics about burn, bleeding, choking, fracture, nasal bleeding, seizure, poisoning, asthmatic attack, hypoglycemic attack and loss of consciousness. The awareness program was an educational material which was provided to

students along with the questionnaire. This material included information regarding first aid and an appropriate way to deal with it in each emergency case. The data were coded, entered and processed on a computer using SPSS "Version 19, IBM Corp, United States". Data was summarized using mean, standard deviation and range. A chi square test was used to compare between pre- and post- awareness with the response rate of 52.7%. P value of < 0.05 was considered to indicate a statistical significance [3].

## Result

A total of 110 female students participated in this study and out of this 43 (39.1%) were medical, 37 (33.6%) were dentist and 30 (27.3%) were nurses. Only 58 students completed the answers of the questionnaire to compare between pre- and post- awareness with the response rate of 52.7%.

Among all, 98.2% of the students reported that they had information about first aid in the pre-awareness assessment. The source of information differed, and 53.6% had their information from internet website.

Among all, 79.1% thought their information is not sufficient. 69 of the student agreed that first aid can save victim's life. 16.4% of the

student answered that they had the ability to do first aid in case of emergency situation and 72.7% knew Red Crescent number (Figure 1 and Table 1).

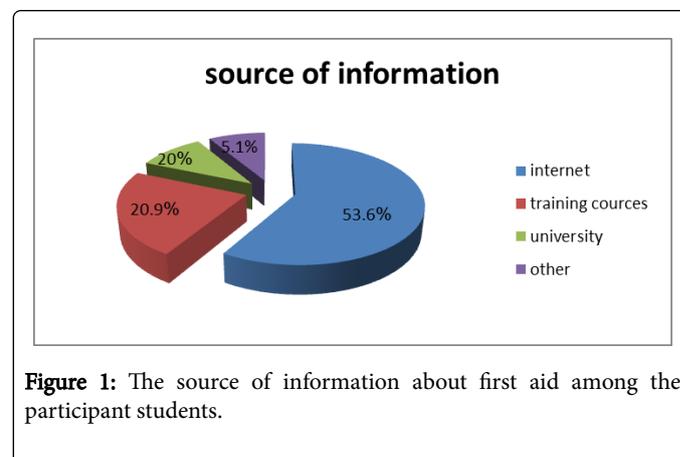


Figure 1: The source of information about first aid among the participant students.

Question	% of right answer	% of wrong answer
Do you have any information about first aid skill?	98.2%	1.8%
Do you think the first aid has rule to save the victim's life?	69.1%	30.9%
Do you think that your knowledge is sufficient?	20.9%	79.1%
Do you know the Saudi emergency call number?	72.7%	27.3%
Do you think you have the ability to do first aid in emergency case?	16.4%	83.7%
What is the first thing you should do before you consider administering First Aid?	37.3%	62.7%
What should you do if someone is unconscious and breathing to help him keep the airway open? [2]	68.2%	31.8%
What should you do if someone is unconscious and not breathing? [2]	68.2%	31.8%
The recovery position is often utilized for casualties but what is its main advantage being?	64.5%	35.4%
How to help someone bleeding from a wound? [2]	47.3%	52.7%
What should you do if case of fracture? [2]	89.1%	10.9%
What is the proper thing you have to do in case of burn? [2]	73.6%	26.4%
What should you do to help someone who is choking?	75.5%	24.5%
What should you do in case of epistaxis?	55.5%	44.5%
What is the best course of action if we witness a casualty having a seizure?	70.9%	29.1%
What should you do to help victims with asthmatic attack? [2]	68.2%	31.9%
If someone is having a hypoglycemic attack, what should you do?	95.5%	4.5%
What the important information you have to know in case of swallow poison or harmful substance? [2]	83.6%	16.4%

Table 1: Showing the 110 student's answer before awareness presentation.

In pre- awareness study which included 110 students, the wrong reflects on skills and attitude of how to manage various emergency case

were shown as in first thing providers should do before consider administering first aid 33.6% were answered to request for an

ambulance to attend, 29.1% answered to check to ensure the casualty is stable.

In case of loss of consciousness and if the victim can breathe, 30% tended to make sure nothing is obstructing the airway.

On other side, if victim has loss of consciousness and cannot breathe, 19.1% ambulance was called and waited for the paramedics to arrive. 12.7% thought to call ambulance and put victim in recovery position.

In case of recovery position 30.9% thought it is a good stable position which can easily monitor a casualty.

In case of bleeding due to injury 52.7% thought to remove any foreign body from site of bleeding, 6.4% tended to dress the bone fracture and 4.5% were tended to ask about pain.

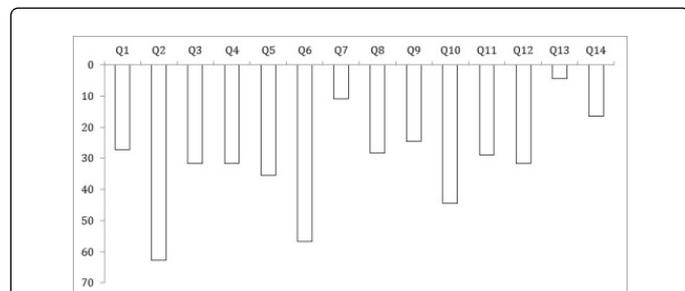
In case of burns, 26.4% tended to wipe the burn with antiseptic wipes. In case of choking 20.9% inserted the finger to the back of the victim's throat trying to dislodge the foreign body.

In epistaxis 24.5% thought to make casualty lean backward and pinch the nose, 20% thought to put a cotton in nose and breath from the mouth.

In epilepsy management, 23.6% answered that restrain the victim.

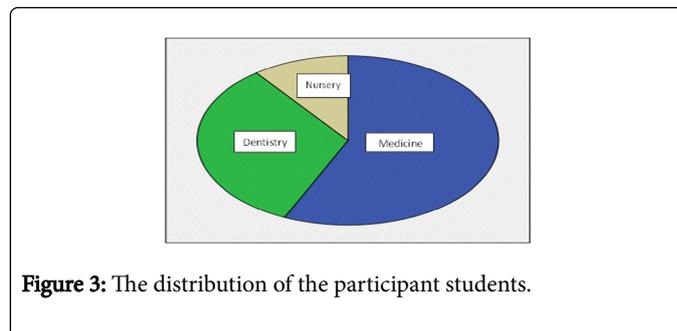
In asthmatic attack 25.5% thought the victim has to sit in comfortable position and breathing into a paper bag.

In hypoglycemic attack 0.9% tended to give the victim a low-calorie drink. If victim ingests a toxic substance 9.1% were thought to ask what those materials have taken, when and why (Figure 2).



**Figure 2:** The percentage of the wrong pre-awareness answers about first aid management. Q1 Red crescent number; Q2 The first thing should do before consider administering first aid; Q3 Is unconscious and breathing; Q4 Is unconscious and they are not breathing; Q5 The advantage of recovery position; Q6 Someone is bleeding from a wound; Q7 Broken a leg; Q8 Someone who has a burn; Q9 Someone who is choking; Q10 Bleeding from a nose; Q11 Action if a casualty having a seizure; Q12 Someone Has Asthma Attack; Q13 Someone has a hypoglycemic attack; Q14 A person has swallowed poison.

The comparisons between pre- and post- awareness presentation about first aid study which include 58 female students, 33 (56.9%) were medical, 19 (32.8%) were dentist and 6 (10.3%) were nurses (Figure 3).



**Figure 3:** The distribution of the participant students.

Among all, 96.6% of students answered they had information regarding first aid before awareness compared to one hundred percent after awareness ( $p = 0.15$ ), in spite of this large percentage, their answers about dealing with emergency situations showed the deficient in their knowledge.

77.6% of the student still thought that first aid can save victim's live ( $p = 0.84$ ), even in those who's management situation improved by 50% and became sufficient about first aid (15.5% pre vs. 65.5% post,  $P = 0.00$ ).

The improvement was 55% of the students who became more familiar to do first aid in emergency case after awareness about the technique (pre 20.7% vs. 75.9% post,  $p = 0.000$ ), and 20% of them became more alert about Red Crescent number (pre 67.2% vs. post 96.6%,  $p = 0.000$ ). 46% of the students didn't know that they have to check for any hazards and dangers before going to do first aid, after awareness the observed improvement was 24% (pre 46.6% vs. post 70.7%,  $p = 0.005$ ).

In case of loss of consciousness while the victim can breathe the observed improvement was 22% became more alert to check first if the victim is breathing or not then call the ambulance for help (62.1% pre vs. 84.5% post,  $p = 0.003$ ). On the other hand, if victim loses his consciousness and cannot breathe 24% knew that they have to call ambulance first then push in the center of the chest 30 compressions as a regular rate (72.4% pre vs. 96.6% post,  $p = 0.002$ ).

In case of recovery position which is to make sure that airway is patent the observed improvement was 24% became more alert than those before awareness (pre 63.8% vs. 87.9% post,  $p = 0.117$ ). In case of bleeding due to injury 53.4% were aware that direct pressure is applied and the injured limb is raised above the level of the heart, post-awareness became 77.6% ( $p = 0.009$ ). In case of bone fracture 98.3% knew to support the affected limb using a cushion or some clothing, compared to those before awareness 84.5% ( $p = 0.009$ ). In case of burns 65.5% pre- awareness knew to cool the burn under cold water for 10 minutes which helps to stop the burning process, while 86.2% post- awareness choose the correct answer ( $p = 0.004$ ).

In case of choking 67.2% knew to hit the victim firmly on their back between the shoulder to dislodge the foreign body, while in post-awareness 75.9% choose the correct option ( $p = 0.517$ ). In case of epistaxis 57% became more oriented that the victim should pinch the nose and lean forward (20.7% pre vs. 77.6%post,  $p = 0.00$ ).

In epilepsy management 87.9% post- awareness answered that the victim should be placed in a safe place and not to restrict them, while in pre- awareness 60.3% were knew the correct answer ( $p = 0.001$ ). In asthmatic attack the person should take his medication and sit in a

comfortable position, 63.8% pre-awareness choose the correct answer while in post-awareness they became 87.9% (p = 0.002).

In hypoglycemic attack 93.1% knew that the victim had to be given a sugary drink or food to raise the blood glucose level, in comparison between pre- and post- awareness it showed a significant difference; post-awareness was 98.3% (p = 0.024).

In case of ingestion of toxic substance 84.5% knew that it should be important to ask about the cause that made the victim ingest those material, time of ingestion and amount of the substance, while in post-awareness 93.1% became more alert (p = 0.18) but didn't show significant difference (Table 2).

Question	Pre answer %	Post answer%	P value	95% Confidence Interval
Do you have any information about first aid skill?	96.60%	100%	0.527	-0.014 - 0.083
Do you think the first aid has rule to save the victim's life?	77.60%	77.60%	0.84	-0.191 - 0.157
Do you think that your knowledge is sufficient?	15.50%	65.50%	0.157	0.335 - 0.665
Do you know the Saudi emergency call number (red crescent)?	67.20%	96.60%	0	0.163 - 0.423
Do you think you have the ability to do first aid in emergency case?	20.70%	75.90%	0	0.425 - 0.851
What is the first thing you should do before you consider administering First Aid?	46.60%	70.70%	0.005	-0.666 - 0.127
What should you do if someone is unconscious and breathing to help him keep the airway open? [2]	62.10%	84.50%	0.003	0.152 - 0.710
What should you do if someone is unconscious and not breathing? [2]	72.40%	96.60%	0.002	0.128 - 0.527
The recovery position is often utilized for casualties but what is its main advantage being?	63.80%	87.90%	0.117	-0.036 - 0.312
How to help someone bleeding from a wound? [2]	53.40%	53.40%	0.009	-0.421 - 0.062
What should you do if case of fracture? [2]	84.50%	98.30%	0.009	-0.361 - -0.053
What is the proper thing you have to do in case of burn? [2]	65.50%	86.20%	0.004	0.148 - 0.714
What should you do to help someone who is choking?	67.20%	75.90%	0.517	-0.215 - 0.421
What should you do in case of epistaxis?	20.70%	77.60%	0	-0.516 - 0.036
What is the best course of action if we witness a casualty having a seizure?	60.30%	87.90%	0.001	0.222 - 0.847
What should you do to help victims with asthmatic attack? [2]	63.80%	87.90%	0.002	0.195 - 0.805
If someone is having a hypoglycemic attack, what should you do?	93.10%	98.30%	0.024	0.012 - 0.161
What the important information you have to know in case of swallow poison or harmful substance? [2]	84.50%	93.10%	0.18	-0.057 - 0.299

**Table 2:** Comparison between the 58 students answers to the questions before and after the awareness presentation.

## Discussion

At the best of our knowledge, no similar studies regarding awareness of first aid measures among medical students have been done in Saudi Arabia before. Other studies were conducted to estimate the knowledge and attitude of medical students about the basic life support (BLS) [3], and another study studied first aid measures among secondary school students of Saudi Arabia [4-7].

The pre- awareness results of this study showed that the majority of the female students (98.2%) thought that they had previous knowledge about first aid, only 16.4% reported to have the ability to do first aid in emergency case. A Peruvian study reported that 52.5% of medical students had prior training in management of medical emergencies; however, 60.4% of them had poor knowledge about first aid. Abd El-Hay et al. [8] determined that all students had poor mean score of knowledge and practice regarding first aid and basic life support.

In this study, the knowledge of first aid management in suspected bone fractures was about 89.1% and in bleeding was 47.3%, similar to studies in Mangalore in South India was 12.5% for both fracture and bleeding management [3]. A study in Kuwait University for knowledge about wound bleeding revealed 42.3% and for bone fracture was 59.6% [5]. The first aid management of burns was known correctly by 73.6% students in this study, as against 23.2% in an Irish study, 13.8% in south Indian study and 32.6% in Kuwait University. Analysis of knowledge about first aid management of epistaxis 55.5% had good knowledge, against 13.8% in Mangalore University study in South India [3].

First aid followed by accidental choking by a foreign body was good in 75.5% in this study against 43.6% cases in the Karachi based study, 53.4% in the Peruvian study and 13.2% in South Indian study [3]. This study also reported that 83.6% of the students had good knowledge of first aid management in cases of accidental ingestion of poisons as against 15.8% in study of South India study.

With respect to correct management of convulsions, 70.9% was good in this study, as compared to 24.8% medical students in the Karachi and 13.8% students in South Indian study. In correct management of recovery position, 24.8% medical students in the Karachi study knew of recovery position as against 64.5% students in this study. The majority of students in this study knew management of victims with hypoglycemic attack sufficiently with rate of 95.5% compared to 61% in Kuwait University study. Victims in case of unconsciousness and breathing by 68.2% against 16.5% in Kuwait University study.

After the awareness program which was submitted to the students in this study, significant improvement was shown in the knowledge of the majority of the first aid questions. This is in agreement with Abd El-Hay et al. [8] and Bolling et al. [9] who reported that first aid training resulted in improvement of the knowledge and attitude of the students. Some knowledge didn't show statistically improvement and this could be attributed that regular workshops were needed for the students and refresh their knowledge continuously.

### Limitations of the Study

The male student was not included in this study because they are in separate building. Regular workshops with the students were not possible due to the authors and the student's load of their academic courses.

### Conclusion

This study showed the inadequate knowledge about first aid and lacked the main concept and technique of first aid among the female medical students. The efficiency of the awareness education program was indicated by the improvement in dealing with various emergency situations in post- awareness assessment.

### Recommendations

First aid training program should be added in the curriculum of the health science students at Taibah University to improve the knowledge and basic skills about first aid.

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