

# Knowledge, Awareness and Attitude of First Aid Among Health Sciences University Students

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## ABSTRACT

**Objective:** As the incidence of emergencies has steadily increased in recent years, it is important to ensure that individuals, including university students, are adequately trained to deal with such events. This study aimed to assess the level of knowledge and awareness of, and attitudes towards, first aid among IIUM Kuantan campus students. **Method:** A quantitative cross-sectional survey with stratified random sampling study was conducted among 348 students at the International Islamic University Malaysia (IIUM) Kuantan. Data were collected using a self-administered questionnaire which was adapted from Hong Kong Red Cross. The questionnaire was available in both English and the Malay language. **Results:** A total of 42.8% participants had a moderate level of first aid knowledge. However, 90.8% participants had awareness of and a positive attitude towards first aid knowledge. On the other hand, 55.4% of study participants had not experienced taking first aid courses and they had little knowledge of this. There were significant associations between gender, Kulliyah or faculty, year of study, and first aid training experience, and the level of first aid knowledge based on a one-way ANOVA test with p-values of < 0.05 representing statistical significance. **Conclusion:** The findings indicate that most health sciences university students have good awareness and attitudes towards first aid. Nevertheless, implementation of regular educational programs with structured modules may be able to improve their knowledge of first aid practices and skills.

**KEYWORDS:** First aid, knowledge, awareness, attitude, university student.

## INTRODUCTION

Road traffic injuries are the leading cause of mortality among young people aged between 15 and 29 years old (1). Furthermore, around 90% of the world's fatalities on the roads occur in low- and middle-income countries, even though these countries have only approximately 54% of the world's vehicles. Almost 1.25 million lives are cut short because of road traffic crashes every year (1). In Malaysia, the number of injuries has steadily increased every year despite many new rules and regulations being imposed on road users (2). To prevent and control the injuries cause by the road traffic crashes, sports, and other hazardous pursuits, multi-sectoral integrated action is needed.

The aim of prevention is to minimise the occurrence of crashes and providing the best support and care at the site of a crash. First aid is defined as on-site treatment for the purposes of preserving life and minimising the consequences of injury and illness until help from a medical practitioner or nurse can be achieved (3). If individuals are equipped with basic first aid knowledge, they could save lives. Receiving optimal first aid measures is important for victims in emergency cases (4), and as the incidences of emergencies steadily increase, it is important to ensure that

individuals, including university students, are adequately trained to deal with such events (2).

Although studies have been conducted all over the world to assess the level of first aid knowledge among different groups, including university students, the results have been unsatisfying and ambiguous (5-7). Furthermore, no such studies have been performed in Malaysia, especially for university students. The International Islamic University Malaysia (IIUM) Kuantan campus is health campus which promotes healthy lifestyle through education among its community. Therefore, the objective of this study is to identify the levels of knowledge and awareness of, and attitudes towards, first aid among students of IIUM, specifically at the Kuantan campus.

## MATERIALS AND METHODS

A quantitative cross-sectional study was conducted at IIUM, which is located in Kuantan, which is in Pahang, Malaysia. This study was carried out from February to April 2017 among students from six different Kulliyah (faculties): Kulliyah of Nursing, Kulliyah of Medicine, Kulliyah of Dentistry, Kulliyah of Allied Health Science, Kulliyah of Science, and Kulliyah of Pharmacy. Stratified random sampling was applied in this study to achieve a total of 348 participants. The researcher randomly selected 58 students from each Kulliyah to participate in this study. The Raosoft formula was used in calculation of the required sample size (8):

$$x = Z(c/100)^2 r (100-r) \\ n = N x / ((N-1) E^2 + x) \\ E = \text{Sqrt} [(N - n) x / n (N-1)]$$

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To apply this formula, the researcher chose a 5% of margin error and a 95 % confidence interval. Furthermore, the response distribution was set at 50%, which gave a larger sample size for this research. The required minimum sample size for this study was calculated as 347 participants; the researcher thus recruited 348 participants. The inclusion criteria were IIUM Kuantan students who were willing to participate. The exclusion criteria were post-graduate students studying at the same Kulliyah. The research utilised a self-administered questionnaire adapted from the Hong Kong Red Cross (9); the researcher obtained permission to use the questionnaire prior to commencing the study.

The questionnaire included two parts, A and B. The questions in part A elicited sociodemographic data, and those in part B were related to first aid knowledge and awareness, and attitudes towards these. The questionnaire was available in both English and the Malay language. The levels of first aid knowledge, and awareness and respondents' attitudes were determined using Likert scales. In terms of knowledge scores, participants were classified as having high levels of first aid knowledge if their scores were 70% or higher. Participants were classified as having intermediate levels of knowledge if their scores were between 50% and 70% and classified as having low levels of first aid knowledge if their scores were below 50%. With regard to awareness and attitude scores, participants were classified as having high levels of awareness and good attitudes if their scores were between 5 and 14. Participants were classified as having intermediate levels of awareness and fair attitudes if their scores were 15. However, if their scores were between 16 and 25, they were classified as having low levels of awareness and poor attitudes.

Ethical approval was obtained from the Kulliyah of Nursing Postgraduate and Research Committee (KNPGRC) and the IIUM Research & Ethical Committee (IREC) prior to commencing the study. The researcher then carried out a pilot study to confirm the reliability of the instrument: the Cronbach' Alpha value was 0.86, which makes it acceptable to use the questionnaire in this study. After that, the researcher approached the participants and explained the purpose and significance of the study, requesting and obtaining informed voluntary consent. The researcher invited participants to the meeting room of their Kulliyah to answer the questions, and participants were given 20 minutes to complete the instrument, which was returned to the researcher immediately after completion.

## STATISTICS

The acquired data were entered into IBM SPSS version 22.0 for data analysis. Descriptive statistical tests were used to measure the means, standard deviations, and frequencies of variables, while differences in the distribution of categorical variables were assessed using one-way ANOVA. P-values of less than 0.05 were considered statistically significant.

## RESULTS

Table 1 displays the sociodemographic characteristics of the participants. The ages of the studied participants varied, ranging between 20 and 28 years old. The majority of the participants were

aged from 23 to 25 (216 students, 62.1%). Only 14 participants (4%) were aged from 26 to 28. Of the 348 participants, 144 (41.4%) were male, while the rest were female. A total of 58 undergraduate students were chosen randomly from each faculty (Kulliyah) to represent their population.

Participants were also classified by their year of study on IIUM Kuantan campus. This showed that 55 (15.8%) of the participants were year 1 students, 61 (17.5%) were year 2 students, 94 (27%) were year 3 students, and 138 (39.7%) were year 4 students. The majority of the participants were year 4 students, while the minority were year 1 students. Participants were also classified into two categories: those who had taken, or were taking, first aid courses and those who had never attended any first aid courses. Most of the participants had already taken at least one first aid course (227, 65.2%).

Table 1: Sociodemographic data

N=348	Variables	Frequency (n)	Percentage (%)
Sex	Female	204	58.6
	Male	144	41.4
Kulliyah	Nursing	58	16.7
	Medicine	58	16.7
	Dentistry	58	16.7
	Allied Health	58	16.7
	Science	58	16.7
	Pharmacy	58	16.7
Education Year	First year	55	15.8
	Second Year	61	17.5
	Third year	94	27.0
	Fourth year	138	39.7
Age	20-22	118	33.9
	23-25	216	62.1
	26-28	14	4.0
Taking first aid course	Yes	227	65.2
	No	121	34.8

In this study, the majority of participants (n=149, 42.8%) had moderate level of first aid knowledge, while 118 (33.9%) had high level of first aid knowledge, and 81 participants (23.3%) had a low level of knowledge. However, most of the participants had a high level of awareness of and a good attitude to first aid (n=316, 90.8%). Only 32 (9.2%) participants had low level of awareness of and poor attitude to first aid; the mean score was 2.82 and the standard deviation was 0.58.

A one-way ANOVA test was used to test for an association between gender and levels of first aid knowledge (Table 2). The level of first aid knowledge differed between genders with a *p*-value of less than 0.05; homogeneity of variances cannot therefore be assumed. Based on the ANOVA test, there was a significant association between gender and level of first aid knowledge among IIUM Kuantan students. The *F* value was 5.682 and the degrees of freedoms were 1 and 346 (factor and error, respectively). The *p*-value of the test was 0.018, <0.05. Hence, at least one pair of means differ significantly. There was no need for post hoc testing because there were only two groups.

The association between level of first aid knowledge with Kulliyyah of study was tested. To look for mean differences in Kulliyyah and level of first aid knowledge, an ANOVA test was performed. The sample mean for the Kulliyyah of Medicine was 2.4310, with a standard deviation of 0.65191. The sample mean for the Kulliyyah of Nursing was 2.3966, with a standard deviation of 0.74785. For the Kulliyyah of Dentistry, the sample mean was 1.9138, with a standard deviation of 0.68273. The sample mean for the Kulliyyah of Pharmacy was 1.9310, and the standard deviation 0.69742, while for the Kulliyyah of Science, the sample mean was 1.8448, with standard deviation of 0.76781. Lastly, for the Kulliyyah of Allied Health Science, the sample mean was 2.1207, and the standard deviation was 0.75108. The *p*-value for the Levene's test for equality of variances was 0.170, and as the *p*-value was more than 0.05, equality of variances was assumed. The *F*-value was 7.343 and the degrees of freedom were 5 and 342. The *p*-value of the test was 0.00, <0.05. Hence, at least one pair of means differs significantly.

Where there is such a difference among several pairs of variables, there is a need to identify the pairs that differ significantly using post hoc tests. The post hoc test was run using the Tukey method. The level of first aid knowledge among the Kulliyyah of Medicine students was significantly higher than that of students from other Kulliyyahs. The level of first aid knowledge of Allied Health Science students does not, however, differ significantly from the level of first aid knowledge among students from other Kulliyyahs.

To investigate the association between year of study and level of first aid knowledge among students, the researcher also used a one-way ANOVA test. Based on the test, there was significant association between year of study and level of first aid knowledge among IIUM Kuantan students. The *F* value was 9.267 and the degrees of freedoms were 3 and 344, with a *p*-value of 0.00, <0.05, as shown in table II. Hence, at least one pair of means differs significantly. Post hoc testing was run using the Tukey method. The level of first aid knowledge among third year students was significantly higher than that of first year, second year, and fourth year students, with a *p* value of 0.034.

With regard to first aid training, the majority of participants (*n*=227) had taken training before, with a mean score of 2.44, SD  $\pm$ 0.6. However, 121 participants had not taken first aid training previously, with a mean score of 1.47, SD  $\pm$ 0.54. The *p*-value for the Levene's test for equality of variances was 0.088; as the *p*-value was > 0.05, equality of variances was assumed. The *F*-value was 215.456 and the degrees of freedom were 1 and 346. The *p*-value of this test was 0.00, <0.05.

Hence, at least one pair of means differs significantly, but there was no need for post hoc test because there were only two groups.

The ANOVA test was used to determine the association between students' awareness of and attitudes towards first aid with their level of first aid knowledge. A total of 316 participants had high awareness and good attitudes, and their level of first aid knowledge had a mean score of 2.088, SD  $\pm$  0.75. Based on the ANOVA test, there was no significant association of level of first aid knowledge with differing levels of students' awareness and attitudes towards first aid; the *p*-value of the test was 0.374, >0.05, and the *F*-value was 1.923, with degrees of freedoms of 1 and 346.

Table 2 ANOVA table for Level of First Aid Knowledge and Sociodemographic characteristics (*n*=348)

Socio-demographic characteristic	Sum of squares	df	Mean square	<i>F</i>	Sig
Gender	3.151	1	3.151	5.682	<b>0.018</b>
Kulliyyah	18.911	5	3.782	7.343	<b>0.000</b>
Year of study	14.586	3	4.862	9.267	<b>0.000</b>
First Aid Training Experience	74.856	1	74.856	215.456	0.000

## DISCUSSION

More than half of the participants in this study were female. The findings were relatively unequal in terms of number of both male and female participants due to the fact that the number of female students in public universities is higher than the number of male students (10). The data analysis suggests that most of the participants had experience in learning first aid course previously, perhaps because most of the participants were from health sciences, and most of their courses are related to the healthcare industry. The majority of the participants had also heard about first aid and they believed that first aid can save people lives.

This finding contrasts with previous studies done on First Aid knowledge among university students. Only a small number of reports assessing first aid knowledge have been carried out in Arab countries and the majority of them have reported that university students have poor levels of first aid knowledge (5). Meanwhile, in a study in Mangalore, India, on knowledge of First Aid skills among students of a medical College in Mangalore, South India, very few students had good knowledge of first aid (6). However, in this study, a majority of the participants had at least an intermediate level of first aid knowledge.

The current study's findings suggest that almost all IIUM Kuantan students have positive awareness of and good attitudes towards first aid. High levels of awareness of and good attitudes to first aid among IIUM Kuantan students is likely due to the fact that the courses in IIUM Kuantan are health science and



science based, with most of the courses being related to the healthcare industry. This result is similar to those found in previous studies on medical students, and engineering, arts, architecture, and business students, which showed greater awareness of first aid amongst medical students than non-medical students (6). However, the results of this study contradict a study done in India which found that 58% of students from the Annai Dora College of Nursing, Aundipatty, TamilNadu, India, had negative awareness of and attitude towards first aid (11).

Previous researchers have investigated the associations between sociodemographic characteristics and levels of first aid knowledge. Many factors have thus been shown to be associated with increased levels of knowledge, including taking a first aid course at school, having a driving license, or having a higher level of education (5). In this study, the associations between the sociodemographic characteristics of gender, Kulliyyah, year of study, and first aid training experience with level of first aid knowledge of participants were investigated. The findings showed that all these sociodemographic characteristics had significant associations with level of first aid knowledge.

There was a significant association between gender and level of first aid knowledge among IIUM Kuantan campus students. From this study, female students had higher levels of first aid knowledge compared to male students. This result is similar to that of previous studies, where female students were seen to be more knowledgeable than male students in all aspects of first aid knowledge (5).

Based on the findings, there was also a significant association between Kulliyyah of study and level of first aid knowledge among IIUM Kuantan campus students, with a p-value of 0.00. This showed that Kulliyyah of Medicine students were most knowledgeable about first aid measures, followed by those from the Kulliyyah of Nursing. This is likely due to the fact that physician and nursing professions are part of the healthcare industry and students are thus closer to the industry in term of saving people's lives. Previous researchers have also investigated the association between course of study and level of first aid knowledge. Medical training and teaching seems to have an effect in terms of enhancing the knowledge of medical students regarding first aid, with 63.3% of medical students scoring more than 50% as opposed to only 18% of non-medical students (6). Students from the health sciences and scientific colleges had better first aid knowledge than students of literature and those in sport colleges (5).

Further, there was a significant association between year of study and level of first aid knowledge among IIUM Kuantan campus students, with a p-value of 0.00. Third year students showed the most significant results, followed by fourth year students. The majority of first year students had low levels of first aid knowledge. This may be due to fact that junior students have less exposure to the first aid training syllabus. Year of study was significantly related to level of first aid knowledge; senior students had significantly better knowledge about first aid compared to juniors (7). In this study, students who had experience with first aid training had high levels of knowledge compared to students who not yet experienced first aid training. Previous research has explained that first aid training experience is significantly related to level of first aid knowledge. Students

who have received formal first aid training scored better than those who had no first aid training (6). This supports the result of a study that claimed that lack of first aid training was related to the percentage of students who could help when faced with an emergency situation. Other than that, having previous first aid training experience was strongly related to better first aid knowledge in students (5).

The findings also proved that even though the students had high level of first aid knowledge, they must also have positive awareness of and attitudes towards first aid. According to a study done by the Hong Kong Red Cross, the general public's awareness was high, and attitudes were positive, but progress in learning first aid was negligible (9). However, research about the association between students' awareness and attitudes with their level of first aid knowledge has not been highlighted and is very limited.

## CONCLUSION

Based on the findings of this study, it can be concluded that majority of IIUM Kuantan campus students had intermediate levels of first aid knowledge. However, half of the participants had positive awareness of and good attitudes towards first aid, while the remainder had negative awareness of and attitudes towards first aid. Therefore, the university must play a vital role in promoting the importance of first aid knowledge among students. There is a need for an introduction to this topic to be added to the university curriculum to enhance students' knowledge of and skills related to basic first aid. This should be a compulsory course for every student.

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## CONFLICT OF INTEREST

The authors have no conflict of interest to declare with regard to this work.

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