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Original Research Article

Knowledge, attitude and practices regarding emergency first aid among management students in Northern India: a cross-sectional study

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ABSTRACT

Background: First aid is usually administered immediately after the injury occurs and at the location where it occurred consisting of a one-time, short-term treatment and requires little technology or training to administer. Studies have shown that 10-35% of post-accident deaths occur in the first 5 minutes and more than 50% occur in the first 30 minutes and 38% of deaths can be prevented on site if first aid treatment applied in the first five minutes.
Methods: The study was undertaken in a management institute to assess the knowledge attitude and practice of management students regarding emergency medical care, identify gaps for the same and give recommendations based on the findings.
Results: A total of 194 students participated in the study with a mean age of 36.89+8.11 years. The mean score in questionnaires pertaining to Knowledge was 13.87+2.6 (range 7 to 25). It was seen that there was a significant association between exposure to previous first aid training sessions and their knowledge (p=0.015). The attitude and practices of Management students was pro towards providing first aid.
Conclusions: The study identified key areas in which first aid knowledge was lacking. In line with the obtained results, Management students training on first-aid measures needs to be strengthened.

Keywords: First aid, KAP study, Management students

INTRODUCTION

Accidents can happen anywhere, including at home, school, work or on the street, often requiring immediate first aid treatment. Inexperienced bystanders at the scene usually witness and handle these situations, which can lead to serious medical complications if first aid is not administered properly and promptly. However, simple yet effective first aid, when applied promptly and correctly, can help save lives, prevent permanent disabilities, reduce the severity of injuries and support the treatment process before professional medical care is accessible. Therefore, the implementation of first aid is crucial for the victim in an emergency. First aid is described by OSHA as the immediate medical attention given right after an injury happens and at the place where it occurred. It typically consists of a single, short-term and immediate treatment which doesn't require much technology or training to provide.[1]

Several studies have demonstrated that a significant percentage of post-accident deaths occur within the first few minutes, with 10-35% occurring within the first 5 minutes and over 50% within the first 30 minutes.[2,3] However, with proper and knowledgeable application of first aid, 38% of these deaths can be prevented at the accident site, with first aid administered within the first five minutes proving most effective. Since it typically takes more than 5 minutes for medical services to arrive at emergency situations, delays could lead to serious

consequences, especially if the circulatory system is stopped for more than 5 minutes, resulting in irrecoverable brain damage and death.[4,5] In middle and upper-income countries, the integration of prehospital trauma life support and integrated emergency medicine and trauma care systems has significantly reduced morbidity and mortality following trauma.[6] This highlights the critical importance of time in saving lives.

Therefore, to achieve the most effective results from first aid treatment, it is crucial for trained individuals to take necessary actions before professional health teams arrive.[7] Increasing the number of trained individuals who can correctly administer first aid can reduce the number of deaths and serious injuries in cases worldwide where first aid is required.[8] Additionally, it has been noted that the health benefits gained from first aid can enhance the sense of social responsibility within society and strengthen societal values.

In modern academic institutions such as management schools, students and faculty frequently participate in field visits, group activities, internships and public engagements where medical emergencies may arise. Time is a fundamental factor in patient survival and recovery and the first responders to any emergent health condition might not always be a medic and thus, it is imperative that Management students be trained to provide basic First Aid.

While there have been few studies to assess the Knowledge, Attitudes and Practice towards basic first aid in general masses, there are virtually no studies to assess the same in Management students and they constitute a group that has a strong possibility of experiencing scenarios that require first aid and being leaders, they can percolate its importance to the subordinates. This study was therefore undertaken to assess the KAP of Management students regarding emergency medical care, identify gaps for the same and give recommendations based on the findings.

METHODS

Study design

A descriptive cross-sectional study was conducted in a Management Institute of Delhi, Northern India having a total strength of 194 participants. The study was conducted from 01 February 2025 to 25 February 2025.

Sample size

To calculate the sample size needed for our study, we assumed a knowledge rate of 50% with a 95% confidence interval and a relative precision of 10%. The target sample size came to be 96, however, a total of 194 participants were included in the study. Simple random sampling was used to select the study population. The study population was briefed about the objective of the study and their informed consent was taken for participation.

Data collection instrument/ procedures

To evaluate the study population's Knowledge, Attitude and Practice of administering first aid in various scenarios, data was collected using a self-administered, anonymous multiple-choice questionnaire created on Google Forms. The questionnaire was developed in English after thorough literature research and comprised of closed-ended questions. It was reviewed both by an Epidemiologist and a Surgeon to enhance interpretability and uniformity.

Requisite adjustments were made before deploying the questionnaire for the main study. The questionnaire consisted of three sections. First section enquired information on demographic variables like age, gender, their educational qualifications, studied biology as a subject in senior secondary school and previous exposure to any first aid or similar course. Section two consisted of questions related to knowledge, attitude and practices regarding first aid.

Attitude was assessed by an item with responses on questions whether they are willing to attend the sessions on first aid, there attitude towards administering first aid in need of hour, whether they feel first aid training is important and whether first aid is given only in health care setting. Practice was assessed by questions on whether study participant had provided first aid ever to anyone.

Last section comprised of thirty multiple choice questions, each with three incorrect and one correct response to knowledge regarding different first aid scenarios like trauma management, Basic life support, basic human anatomy, management of various bites, burns, high altitude related illnesses, choking etc. Each correct response was given 01 mark and no negative marking was done for incorrect response. A cut off score of 15 (50%) was kept for labelling a participant as pass or fail. It took approximately 30 minutes for participants to fill each form.

Data analysis

The data was then analysed and subjected to statistical inference by Statistical Package for the Social Sciences (SPSS) software, version 20. Descriptive statistics were computed to determine frequencies and summary statistics (mean, standard deviation and percentage) to describe the study population in relation to socio-demographic and other relevant variables.

Data was presented using tables, graphs and figures. Chi-square test was used to find association between different categorical variables. P value <0.05 was taken as statistically significant.

RESULTS

Participant demographics

The study participants (n=194) comprised of 181 (93.29%) males and 13 (6.7%) females. Mean age of the study population was 36.89+8.11 years. Out of the study participants' majority (114, 58.8%) were graduates. Majority of the participants had studied biology as a subject in senior secondary school. In response to whether they had an exposure of basic first aid or similar course earlier, 66.5% responded as not having exposure to previous such course (Table 1).

Knowledge of participants in various domains of first aid

The mean score in questionnaires pertaining to knowledge was 13.87+2.6 (range 7 to 25). Distribution of scores in various domains of knowledge is depicted by Violin plot as shown in Figure 1. Z test for single proportion was used to calculate the difference between two population proportions for correct and incorrect responses (Table 2).

It was seen that there was significant difference between the two population proportions ($p<0.05$) for majority of questions assessing the knowledge. Pearson's correlation was used to assess correlation between age of study participants and score attained by them in Knowledge which was -0.052 and was not significant ($p=0.473$).

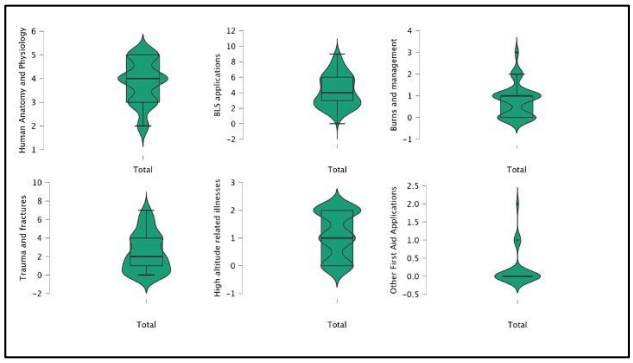

Figure 1: Violin plot depicting distribution of scores in various domains of knowledge.

Chi square test was used to determine association between gender and the 'Knowledge' results (Pass or Fail) (Table 3). It was seen that there was a significant association between exposure to previous first aid training sessions and results ($p=0.015$). However, there was no significant association in other domains of demographic variables like Gender, Education and Studying biology.

Attitude and practice of study participants on first aid

Majority of the study population was willing to attend first aid classes (91.8%), administer first aid in any form (95.4%) and felt that first aid training is important (95.9%). Most of the participants had imparted first aid earlier any form (57.2%) (Table 4).

Table 1: Demographic characteristics of the participants.

Characteristics		N	%
Mean age±SD (min-max) 36.89±8.11 (23-55)			
Sex	Male	181	93.3
	Female	13	6.7
Level of education	Senior secondary	03	1.5
	Graduates	114	58.8
	Postgraduates and above	77	39.7
Studied biology as a subject in senior secondary	Yes	101	52.1
	No	93	47.9
Previous first aid training	Yes	53	27.3
	No	129	66.5
	May be	12	6.2

Table 2: Knowledge scores of participants in various domains.

Questions	Correct responses		Incorrect responses		P value
	N	%	N	%	
Basic human anatomy and physiology					
No of chambers in human heart	140	72.16	54	27.84	<0.001
No of bones in human body	166	85.57	28	14.43	<0.001
Normal pulse rate	174	89.69	20	10.31	<0.001
Normal blood pressure	187	96.39	7	3.61	<0.001
Connection of bone to muscle	76	39.18	118	60.82	0.003

Continued.

Questions	Correct responses		Incorrect responses		P value
	N	%	N	%	
BLS applications					
No of chest compressions per min	80	41.24	114	58.76	0.015
No of rescue breaths in single rescuer	86	44.33	108	55.67	0.114
Duration to check carotid pulse	87	44.85	107	55.15	0.151
Position of the patient while checking carotid pulse	84	43.30	110	56.70	0.062
Use of AED	56	28.87	138	71.13	<0.001
Sequence of BLS	71	36.60	123	63.40	<0.001
Airway management in BLS	63	32.47	131	67.53	<0.001
Sequence of assessment of unconscious patient	41	21.13	153	78.87	<0.001
Depth of chest compression in CPR	80	41.24	114	58.76	0.015
Full form of CPR	178	91.75	16	8.25	<0.001
Burns and management					
Meaning of scald	91	46.91	103	53.09	0.389
% of burns area	25	12.89	169	87.11	<0.001
Symptoms and first aid of third-degree burns	40	20.62	154	79.38	<0.001
Trauma and fractures					
Type of fracture	52	26.80	142	73.20	<0.001
Cervical spine stabilisation	68	35.05	126	64.95	<0.001
Use of Thomas splint	90	46.39	104	53.61	0.315
Complication of fracture	24	12.37	170	87.63	<0.001
Feature of open fracture	62	31.96	132	68.04	<0.001
Use of shell dressing	90	46.39	104	53.61	0.315
Management of ankle twist	93	47.94	101	52.06	0.566
High altitude related illnesses					
Feature of HAPO	115	59.28	79	40.72	0.01
First aid for a case of acute mountain sickness	104	53.61	90	46.39	0.315
Other first aid applications					
Management of choking	84	43.30	110	56.70	0.062
Symptoms of heart attack	64	32.99	130	67.01	<0.001
Cause of stroke	121	62.37	73	37.63	<0.001

Table 3: Association between various demographic factors and Knowledge results.

Factor		Result		χ^2	Degree of freedom	P value
		Pass	Fail			
Gender	Male	75	106	0.765	1	0.38
	Female	7	6			
Education	Senior secondary school	1	2	2.031	2	0.36
	Graduates	53	61			
	Post graduates and above	28	49			
Studied biology as a subject	Yes	44	57	0.145	1	0.7
	No	38	55			
Previous first aid training	Yes	33	20	13.198	2	0.001
	No	43	86			
	May be	6	6			

Table 4: Attitude and practice of study participants.

Questions	Response	N	%
Will to attend classes on first aid	Yes	178	91.8
	No	16	8.2
Willing to give first aid if required	Yes	185	95.4
	No	9	4.6

Continued.

Questions	Response	N	%
Do you feel first aid training is important	Yes	186	95.9
	No	8	4.1
Is first aid given only in healthcare setting	Yes	1	0.5
	No	193	99.5
Have you ever given first aid in any form	Yes	111	57.2
	No	83	42.8

DISCUSSION

First aid training is necessary for providing emergency medical care in cases where human life is in jeopardy.[9] This study was aimed to assess the knowledge, attitude and practices of management students in imparting basic first aid in various scenarios which they are likely to encounter in their workplace. The related literature includes many studies investigating the first aid KAP levels of groups with different characteristics, such as children, university students, drivers and security personnel.[10,11] However, there was no study found examining the level of first aid knowledge specifically to management students. In the study the mean age of participants was found to be 36.89+8.11 (23-55) years whereas in a similar study conducted in China on KAP of heat related illnesses the mean age of participants was 25.1+4.09 (18-43) years.[12] The study participants comprised of 93.3% males and 6.7% females with majority of Graduate participants (58.8%) whereas a study conducted in Turkey9 consisted of 68.6% females and 31.4% males, however the education profile remained same with higher number of graduates followed by Post graduates and above.

In the present study most of the study participants had a positive attitude and scored high on practice towards imparting First aid in the hour of need ($p<0.05$) which is higher than the studies conducted in Turkish, USA and China.[13-15] In the study while assessing knowledge on various aspects it was seen that most of the study participants were able to correctly answer most of the 'basic human anatomy and physiology' questions ($p<0.05$) other than 'Connection of bone to muscle' which was not significant ($p=0.196$). Majority of the study participants were not able to answer most of the basic life support related questions other than 'No of rescue breaths to be given by single rescuer, position of patient while checking carotid pulse, depth of chest compressions and full form of CPR' ($p<0.05$).

This shows inadequate knowledge amongst study participants about BLS. Similar results were achieved in various studies depicting inadequate knowledge amongst the population regarding BLS.[16,17] On assessment of questions related to burns management there was a significant gap in knowledge of first aid to burn victims ($p<0.05$). Similar findings were obtained in a study conducted in Saudi Arabia where most of the study participants had inadequate knowledge about imparting first aid to burn victims. Adequate knowledge and its timely implementation can decrease the extent and severity of injury.[18] The knowledge of suspected trauma and fracture management by immobilization and in bleeding by part elevation and pressure bandage was below average in the study. In two studies done at Karachi about 44% students and 82.7% in a Peruvian study had adequate knowledge about management of trauma and fracture patients.[19,20] Knowledge regarding First aid following accidental choking by a foreign body was good in 44.8% participants which is comparable to 43.6% in the Karachi based study and 53.4% in the Peruvian study where participants knew of measures like stroking between shoulder blades or of Heimlich manoeuvre.[20,21]

It was demonstrated in our study that previous first aid had a significant impact on the results of 'Knowledge' related questionnaire ($p=0.015$). This important observation is of great clinical significance. Other studies also concluded that that the knowledge of trained personnel was better than those of untrained ones.[21] In a study conducted by Chaudhari et al it was seen that knowledge and skills pertaining to BLS significantly improved after a course.[22] It is also imperative that periodical reinforcement by refreshers trainings be carried out done to retain the skills and maintain continued competency in administering BLS.

Strengths

No similar studies regarding awareness of first aid measures among Management students has been done before. The study has revealed that awareness on first aid measures needs to be improved amongst the study group. This is possible by introducing formal first aid training in their academy curriculum.

Limitations

The questions in the questionnaires relating to KAP were limited rather than comprehensive and sufficiently detailed, meaning that we might not have explored the relevant knowledge in depth. This study only assessed KAP of first aid skills and not the practical skills.

Assessment of practical skills would have further helped in understanding the difficulties faced by them in rendering first aid during emergencies. This could be an area for future research studies. Moreover, as the study was performed in one formation, the findings in this study cannot be generalized.

CONCLUSION

According to the results of the study, the attitude and practices of Management students was pro towards providing first aid. However, there was a significant gap in knowledge regarding first aid measures to be given in various emergency scenarios. The study also identified key areas in which first aid knowledge was lacking. In line with the obtained results, training on first-aid measures needs to be strengthened. It is recommended that first aid training syllabus to be formalised and included as a part of curriculum in various institutes during their training. A refresher course at necessary intervals be also imparted regularly to maintain its effect.

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