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## **Knowledge of first aid skills among undergraduate students of medical college in Lucknow**

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Received: 12-11-2015 / Revised: 15-12-2015 / Accepted: 31-12-2015 / Published: 01-01-2016

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### **ABSTRACT**

The adequate knowledge required for handling an emergency without hospital setting at the site of the accident or emergency may not be sufficient as most medical schools do not have formal first aid training in the teaching curriculum. The aim of this study is to assess the level of knowledge of medical students in providing first aid care. This cross sectional study was conducted during May 2011 among 152 medical students. Data was collected using a self-administered questionnaire. Based on the scores obtained in each condition requiring first aid, the overall knowledge was graded as good, moderate and poor. Only 11.2% (17/152) of the total student participants had previous exposure to first aid training. Good knowledge about first aid was observed in 13.8% (21/152), moderate knowledge in 68.4% (104/152) and poor knowledge in 17.8% (27/152) participants. Analysis of knowledge about first aid management in select conditions found that 21% (32/152) had poor knowledge regarding first aid management for shock and for gastro esophageal reflux disease and 20.4% (31/152) for epistaxis and foreign body in eyes. All students felt that first aid skills need to be taught from the school level onwards and all of them were willing to enroll in any formal first aid training sessions. The level of knowledge about first aid was not good among majority of the students. The study also identified the key areas in which first aid knowledge was lacking. There is thus a need for formal first aid training to be introduced in the medical curriculum.

**Keywords:** First aid skills, Knowledge, Skills, Medical students

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### **INTRODUCTION**

First aid is applied to injured or ill persons in any health threatening settings in order to save life, prevent degradation of the situation or contribute to a treatment process before professional medical care is available. This refers to assessments and interventions that can be performed by a bystander (or by the victim) with minimal or no medical equipment [1]. At some point in a medical curriculum students are taught how to handle emergencies in a hospital emergency setting where drugs and other necessities are available. However, the adequate knowledge required for handling an emergency without hospital setting at the site of the accident or emergency may not be sufficient [2, 3]. Studies have found that the knowledge of first aid amongst medical students has always been a

neglected subject. Hence, it should not be surprising to note that even junior doctors at certain hospitals cannot perform the first aid skills satisfactorily [4].

As the incidence of medical emergencies are on the rise in recent years it is important to ensure that health personnel are adequately trained to deal with such events [5, 6]. Very few studies have been performed about knowledge of first aid skills among medical students in India. The objectives of this study were thus to assess the level of knowledge of undergraduate students in providing first aid care, to identify the emergencies where there is a lack of knowledge of first aid and to assess the student's opinion regarding the need for first aid training at medical colleges.

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## SUBJECTS AND METHODS

This cross-sectional study was performed in May 2011 in medical colleges of Lucknow. The ethical approval for conducting this study was obtained from institutional ethics committee. The target sample size was 177, based on the assumption of knowledge about first aid practices among medical students to be 50%, 95% confidence interval and relative precision of 20%.

A total of 77 students were chosen from the fourth semester and 50 each from sixth to eighth semester in accordance to the probability proportional to the size/strength of the class. The criterion for selecting semesters was based on the exposure of students to clinical settings during semesters. The required number of students in each semester was selected by simple random sampling method.

The students were briefed about the objective of the study and their informed consent was taken for participation. A self-administered anonymous multiple choice questionnaire was used for data collection to assess the knowledge of students regarding administration of first aid in different situations. The questionnaire was pretested earlier on a group of 10 house surgeons and based on their responses questions were modified before it was distributed in its final form to the participants.

Reliability of the questionnaire was assessed using Cronbach's Alpha value of which was 0.86 indicating good internal consistency. The questions on management of common first aid emergencies such as unconsciousness, heat burns, external bleeding, epistaxis, heat stroke, drowning, shock, choking, electrocution, seizures, poisoning, animal bites, frost bite, foreign body in ears and eyes, anginal pain, heart burn, fractures and dislocations were asked. Few questions were developed in the form of scenarios depicting real life situations and covered all the essential aspects of first aid. The face validity of this questionnaire was performed by experts in clinical specialties such as ENT, Ophthalmology, Surgery and Internal Medicine. Each first aid management option was given weighted marks based on the appropriateness of that intervention for that particular condition. This was to bring out the preferred responses of the students to various emergency situations.

The maximum possible score which could be obtained was 207 and minimum being 7. Summation of the scores allotted to the most essential first aid management options for each medical emergency formed the basis of categorization of overall knowledge of students about first aid. The accumulation of points allotted

to must know responses was used for deciding the cutoff score for poor performance.

Similarly, the cutoff value for moderate performance was based on the cumulative points allotted to nice to know responses made less from the maximum score of 207. The score between 147 and 207 was considered as good, 67-146 as moderate and 7-66 as poor knowledge about first aid. The incompletely filled questionnaires were excluded from the analysis. The data entry and analysis was performed using Statistical Package for Social Sciences software package (SPSS Inc., Chicago, IL, USA) version 17. Chisquare test was used to find out the association of socio demographic variables with the level of knowledge regarding first aid and  $P < 0.05$  was taken as statistically significant.

## RESULTS

A total of 152 fully completed questionnaires were received with a response rate of 85.9%. Of the 152 students, 77 were from fourth semester, 39 from sixth, and 36 from eighth semester. Most students 26.3% (40/152) were of the age group 20-21 years with a mean age of 20.82 (1.4) years. Age of students ranged from 18 years to 24 years. Most of them were males 59.9% (91/152) and most of them were students of the fourth semester 50.7% (77/152). Only 11.2% (17/152) students had previously exposure to first aid training. Out of the total participants, 13.8% (21/152) students had good, 68.4% (104/152) had moderate and 17.8% (27/152) had poor level of knowledge about first aid.

There was no association of gender or previous training in first aid skills with the level of current knowledge about first aid among the participants. Students of the eighth semester had significantly better knowledge about first aid compared to fourth and sixth semester students ( $P = 0.04$ ) [Table 1].

With respect to awareness of first aid measures in various conditions, 21% (32/152) had poor knowledge of first aid procedures in shock and gastro esophageal reflux disease (GERD). This was followed by poor knowledge of first aid procedures in management of epistaxis and foreign body in eyes 20.4% (31/152) [Table 2]. All students felt that they have to be competent in first aid skills and said that they will not hesitate in applying it in various emergencies in real life situations. All felt that these skills need to be taught from the school level onwards and all of them were willing to enroll for any formal first aid training sessions at the medical college.

**Table-1:** Association of gender, semester of study and previous exposure to first aid training with knowledge of first aid skills.

Characteristics		Knowledge			Total
		Good (%)	Moderate (%)	Poor (%)	
Gender	Male	7(11.5)	42(68.8)	12(19.7)	61
	Female	14(15.4)	62(68.1)	15(16.5)	91
Semester	Fourth	12(15.6)	50(64.9)	15(19.5)	77
	Sixth	3(7.7)	25(64.1)	11(28.2)	39
	Eighth	6(16.7)	29(80.5)	1(2.8)	36
Previous Exposure	Yes	5(29.4)	8(47.1)	4(23.5)	17
	No	16(11.9)	96(71.1)	23(17)	135
<b>Total</b>		<b>21</b>	<b>104</b>	<b>27</b>	<b>152</b>

**Table 2:** Distribution of students based on their knowledge in each aspect of first aid management in different emergency conditions

Aspects of First Aid Management	Knowledge			Total
	Good	Moderate	Poor	
Definition	20(13.2)	102(67.1)	30(19.7)	152
Purpose	24(15.8)	100(65.8)	28(18.4)	152
Road Traffic Accidents	19(12.5)	111(73)	22(14.5)	152
Snake bites	23(15.1)	100(65.8)	29(19.1)	152
Syncope attacks	22(14.5)	106(69.7)	24(15.8)	152
Burns	21(13.8)	105(69.1)	26(17.1)	152
Bleeding Wounds	20(13.2)	109(71.7)	23(15.1)	152
Epistaxis	21(13.8)	100(65.8)	31(20.4)	152
Heat stroke	18(11.8)	109(71.7)	25(16.5)	152
Hypovolemic shock	24(15.8)	96(63.2)	32(21)	152
Chocking by foreign body	20(13.2)	102(67.1)	30(19.7)	152
Electric shock	23(15.1)	107(70.4)	22(14.5)	152
Seizures	21(13.8)	103(67.8)	28(18.4)	152
Poisoning	24(15.8)	103(67.8)	25(16.4)	152
Drowning	22(14.5)	101(66.4)	29(19.1)	152
Animal bites	19(12.5)	109(71.7)	24(15.8)	152

## DISCUSSION

In the present study very few students had good knowledge about first aid and this was not influenced with whether the student was previously trained or not in first aid procedures. Similarly, a Peruvian study reported that in spite of 52.5% medical students having had prior training in management of medical emergencies, 60.4% had poor knowledge about first aid [4, 7]. A study conducted in Chennai showed that there was less than adequate knowledge (52%) and practices (54%) in all groups of participants (resident doctors, hospital consultants, and private practitioners) [8].

This meant that, not only is first aid training required at medical colleges it has to be reinforced periodically with refresher training workshops in first aid. In the present study, females had slightly

better knowledge about first aid than males, which was similar to the findings of a study performed in Karachi [2, 7]. Senior students in this study had significantly better knowledge about first aid compared to juniors, which was similar to findings of other studies [7, 9]. Most students in this study had poor knowledge regarding first aid management in shock, GERD, epistaxis and foreign body removal from the eyes. In this study, only 14.5% students knew correctly the steps of cardio pulmonary resuscitation (CPR) as a part of first aid management in drowning cases, which was similar to the findings of a study performed in Salem, Tamil Nadu where it was seen among 17.1% of medical students [10].

The former study also reported that 30.4% medical students had good knowledge of first aid management in cases of accidentally ingestion of poisons as against 15.8% in our study [11]. Overall

knowledge of first aid among students in this study was poor in comparison to student's awareness level in other studies. Hence, if a formal first aid session is introduced into medical curriculum then this will provide students with sound knowledge and practical skills as proven by a United Arab Emirates based study [12, 13]. This should be complimented with hands on experience or activities in order to increase student's experiences in practical procedures during medical school followed by its evaluation as these measures will ensure that an increased number of first aid trainers are available at a time of any calamity faced by the people [14-16]. Use of modern techniques like using simulation with the aid of computerized mannequins as an educational and assessment tools has been done before and found to be very effective in few studies [9, 15]. No similar studies regarding awareness of first aid measures among medical students have been done in India before. The study has revealed that awareness on first aid measures needs to be improved amongst students. This is possible by introducing formal first aid training in the medical curriculum.

## 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 independently and spontaneously in real life situations. The study also brings out the need for first aid training as a felt need among medical students as there is no formal first aid training in the medical curriculum at the first place. This should be backed up with periodic refresher training as level of knowledge in first aid skills did not differ significantly between students with previous training in first aid and those without. The study also identified key areas in which first aid knowledge was lacking. More such studies should be conducted to evaluate the knowledge and skills of first aid among doctors and medical students in India.

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