Assessment of Knowledge Regarding First Aid among the Undergraduate Students: A Cross-Sectional Study

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Abstract

Background: First aid knowledge is very valuable for every individual in the community. It enables the individual to assist the injured person in an emergency situation until medical help arrives at the site.[1] Students are highly exposed to different kinds of physical injuries. Lack of knowledge regarding managing these medical injuries was noted among the students.[2] Careful management recommended for reducing the complication. This study was conducted to determine the knowledge of first aid and its associated factors among undergraduate students.[3-5]

Materials and Methods: A descriptive cross-sectional study was conducted among 100 undergraduate students. Subjects were selected using purposive sampling techniques. The information was collected using a demographic proforma and a self-administered questionnaire. The overall knowledge on first aid was graded as adequate, good and inadequate.

Results: The overall knowledge score was 13.81 ± 4.41. The mean percentage of the overall level of knowledge was 57.54% which indicate the majority had good knowledge on aspects of first aid. In this study there was no significant association between knowledge score and selected demographic variables.

Conclusion: The study showed the majority had good knowledge of first aid. But also identified some key areas in which first aid knowledge was deficient in the management of shock, burns and fracture. Thus there is a need for first aid training to be introduced in the undergraduate curriculum of different disciplines. The study recommends the use of modern techniques such as simulation with computerized mannequins as a teaching-learning method in all the educational institutions.

Key words: First aid, Knowledge, Students, Shock, Undergraduate.

Introduction

First aid is the immediate support given to the person with minor or major injuries. Knowledge regarding basic first aid measures is curtailed to save the life of an injured. It facilitates the rescuer to assist the injured person until the emergency helps arrives. Various types of accidents and injuries are part of our day to day life. Lack of skillful personals in and around the accident sites usually delays the basic management, later it will become a serious life-threatening condition. Prompt action taken during the initial hours will helpful for the person to come back to a normal productive life.[1]

Accidents are not completely preventable or unavoidable. Managing the victims in a professional manner from the accident area will be help to reduce the deformity.[2] The number of persons killed in the road traffic accidents is drastically increased, 2.7 per one lakh population in the year 1970 is upturn to 11.8 per one lakh population in 2015.[3] Studies conducted in various parts of the country also focusing the need for basic first aid training. One of the South Indian study results revealed that 12 % of the students are only undergone specific first aid training sessions.[4] Developing countries like India it is needed to incorporate basic first aid in the graduation level curriculum will help to reduce mortality

and morbidity related to the mishandling of affected persons.[5]

Materials and Method

The research design adopted for the present study was a descriptive research design. The study was carried out in a professional college, Karnataka. Samples consist of 100 undergraduate students who were selected by purposive sampling technique, based on inclusion criteria. Undergraduate students studying in the first year were selected as study participants. Students who underwent training in first aid were excluded from the study. In the present study first aid refers to immediate care given to the person suffering from sudden illness or injury related to conditions such as cardiac resuscitation, chest pain, ventilation, stroke, shock, fracture, poisoning, burns and snakebite.

Tools and techniques

Blueprint of the questionnaire was prepared on the basis of specific areas such as first aid knowledge on cardiac problems 33.32%, ventilation 4.16%, stroke 16.66%, shock12.5%, fracture 8.35%, poisoning 8.35%, burns 12.5%, snake bite 4.16%. In order to obtain validation of the data collection tool, the draft of the problem statement, objective, demographic proforma, and knowledge questionnaire was submitted to 5 experts. To ensure reliability, the tool was administered to 10 undergraduate students after obtaining permission from the authority. Reliability of the tool was analyzed by split-half method followed by Spearman-Brown prophecy formula. The reliability coefficient of the tool was found to be 0.8. This indicated that the tool was reliable.

The baseline Proforma was used to assess the baseline characteristics of undergraduate students. It had 4 items which include age, gender, type of family, and area of residence. The knowledge questionnaire had 24 items. A score of '1' was given for the correct answer and '0' for the wrong answer. The maximum score was 24. Knowledge score 75% and above was graded as adequate knowledge, 51-74% was good and less than 50% was graded as inadequate knowledge.

Data collection was done after obtaining ethical clearance from the institutional ethics committee (Protocol No: 2017/068). Prior permission from the concerned authority was obtained to conduct the study. Subjects were asked to participate in the study after self-introduction by the investigators. The subjects were informed about the purpose of the study and their consent was attained. The participants were assured about the confidentiality of their information. The data were analyzed in terms of the objectives of the study using both descriptive and inferential statistics. The data obtained were plotted in the master sheet.

Data Analysis: The data entry and analysis was performed using Statistical Package for Social Sciences software package version 23. Chi-square test was used to find out the association of socio demographic variables with knowledge score regarding first aid and $P < 0.05$ was taken as statistically significant association

Results

The baseline characteristics of the study population showed a majority of them (66%) were 18 years and 24% were 19 years old. The maximum numbers of the subjects (90%) were females. Most of the subjects (88%) belong to the nuclear family and 55% were living in an urban area.

Figure 1 shows almost half of the proportion (49.0%) was with good knowledge and only 36% were with inadequate knowledge regarding first aid. The overall knowledge score was 13.81 ± 4.41. The mean percentage of the overall level of knowledge was 57.54% which indicate the majority had good knowledge of the management aspects of first aid which was showed in table 1. Table 2 depicts the analysis of knowledge on first aid management in the specific area found that participants had had poor knowledge regarding first aid management for shock, burns and fracture. Most of the participants had very good knowledge to identify and manage cardiac problems. Data presented in the table 3 revealed that there was no significant association was

found between knowledge of undergraduate students regarding first aid and selected demographic variables such as age, gender, area of resident and type of family.
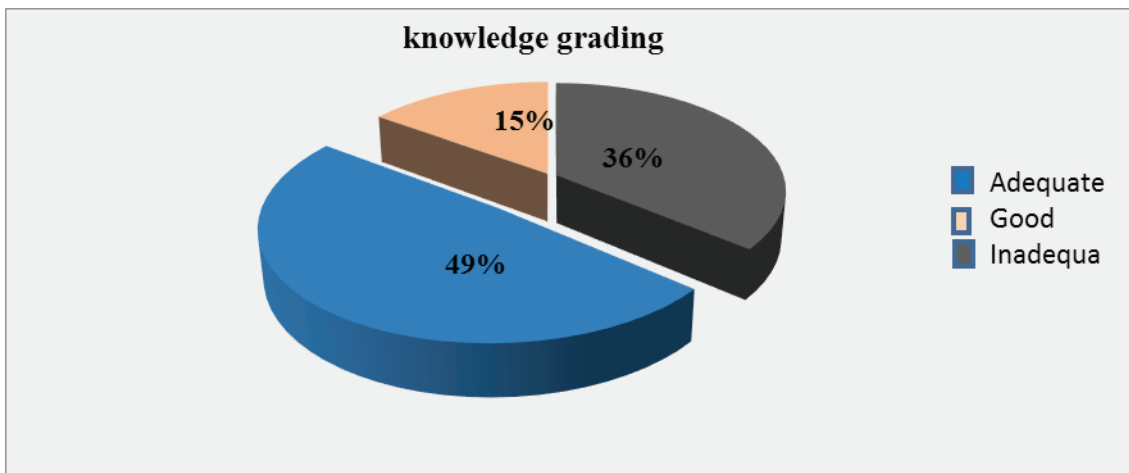

Figure 1: Grading of knowledge score

Table 1: Mean, median, mean% and standard deviation of overall knowledge score

N=100

Description	Mean	Mean%	SD	Median
Overall knowledge score	13.81	57.54	4.41	14.5

Table 2: Mean scores for the areas of knowledge questionnaire

N=100

Area	Mean	SD
Cardiac problems	4.76	1.87
Stroke	2.22	2.10
Shock	1.72	0.92
Burns	1.70	1.14
Poisoning, snake bite	2.28	1.08
Ventilation	2.28	1.08
Fracture	1.14	0.77

SD: Standard deviation

Table 3: Association between knowledge of undergraduate students regarding first aid and selected demographic Proforma

N = 100

SL No	Demographic variable	Median (<14.5)	Median (≥14.5)	X2	df	P-value	Inference
1.	Age						
	18 years	34	32				
	19 years	11	13	.58	2	0.74	NS
	20 years	4	6				
2.	Gender						
	Male	7	3				
	Female	42	48	1.96	1	0.16	NS
3.	Type of family						
	Joint family	5	7				
	Nuclear family	44	44	.29	1	0.58	NS
4.	Area of residence						
	Urban	31	24	2.65	1	0.10	NS

Discussion

Awareness and knowledge regarding first aid play a crucial role in undergraduate students, especially those who are pursuing a medical career, as they are tomorrow's lifesavers.[6] In the present study it is observed that the majority of the subjects (49%) were having good knowledge regarding first aid, followed by (36%) were having inadequate knowledge and (15%) were having adequate knowledge. A study done by Swetha *et al* reveals that 96% of the nursing students had basic knowledge of first aid.[7] A study was conducted by Alsayali *et al* shows that 56% of participants had good knowledge regarding first aid and basic life support.[8]

The majority of study participants were aware of dealing with cardiac emergencies and the study recommends the training of the general population in basic cardiac emergencies. A review article by Toresdahl *et al*, suggests training for medical providers at sporting events. An efficient response to cardiac emergencies requires a planned emergency action plan, training of potential first responders in cardiopulmonary resuscitation and use of an automated external defibrillator, communication, transportation and coordinated work systems. Prompt recognition and early defibrillation are crucial in the management of athletes suffering sudden cardiac arrest during athletic events. This article reviews cardiac care in athletics, with special considerations to the school and outdoor school events.[9]

Several studies showed poor knowledge in the specific areas of first aid management such as shock,

burns, fracture, seizures and chocking.[10-11] The results of a prospective study of school injuries showed an incidence rate of 5.4 injury events/100 children annually, which appears to be an underestimate of the actual rate. Among all the injury events 28.7% resulted in serious injuries. Most of the children during the study period with either serious or minor injuries were sent to the school office or returned to the classroom, which indicates that the present level of first-aid training among school personnel is inadequate.[12] In this view every teaching and nonteaching staff needs in-service education of management of musculoskeletal injuries.

All students and staff need to be competent in first aid skills and apply in various real-life situations. All felt that these skills need to be taught from the school level onwards and all of them were willing to participate in the first aid training sessions at the college. Courses on First aid and Basic Life Support (BLS) should be made mandatory in universities and this should be done through lectures with hands-on skills to make it more effective.[13-16] Countries like England have made BLS courses mandatory in the school curriculum and research showed that 86% of school children effectively demonstrated performing CPR correctly.[8] Simulation-based education provides an opportunity for the students to improve education, competency and safety of the patients. Students reported a high level of satisfaction with the hands-on experience as a member of the health care team in a simulated cardiac arrest.[17-18] With the limited sample size, the researchers acknowledge the limitation of the study regarding the generalization of results of this project to the entire population of students and in the present study samples were selected from a single college.

Conclusion

Present study findings showed that the majority undergraduate students had good knowledge about first aid. The incorporation of first aid education and training will be able to improve the knowledge of remaining students with inadequate knowledge. Proper knowledge and efficient skills in different techniques, materials used in first aid and Basic Life Support (BLS) play a crucial role in the effective management of victims of accidents and injury. Institutions should give importance to first aid and BLS skills of their students by conducting refresher courses on a regular basis. Simulation-based education should be incorporated into the medical education curriculum to train the graduates.

Conflicts of Interest: There are no conflicts of interest

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