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Knowledge, Attitude and Practice of First Aid and Emergency Care among the Classes Educated in Aurangabad, Maharashtra

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Authors' contributions

This work was carried out in collaboration between both authors. Author RJ designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author MN managed the analyses and literature searches of the study. Both authors read and approved the final manuscript.

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ABSTRACT

Aims: To find an association between educational qualification of the participant and knowledge of first aid and emergency care. To understand the common misconceptions of First Aid practices among the educated class of Aurangabad. To conduct a seminar cum workshop session for the educated class of Aurangabad.
Study Design: Cross sectional study with a sample size of 700 participants. The candidates were provided with a questionnaire and a seminar demonstrating First aid and Emergency care was conducted post-questionnaire.
Place and Duration of Study: The study was conducted among the educated class in the city of Aurangabad between October 2018 to February 2019.
Methodology: The candidates were selected from different schools, colleges, small firms, church gatherings and hotel staff. Data was collected using a self-administered pre – tested questionnaire. Based on the scores obtained in each condition, the overall knowledge was graded as good, moderate and poor. A seminar was conducted post questionnaire and the improvement in their knowledge was tested.

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Results: Out of 700 candidates included in the study, 110(15.7%) were school going children, 60 (8.6%) were high school students, 50(7.1%) were college students, 280(40%) were graduates and 200(28.6%) were post graduates. 410(58.7%) had poor knowledge about First Aid and Emergency Care and only a mere 39(5.6%) had good knowledge about First Aid and Emergency Care. 105 candidates (15%) of the candidates believed that applying hot compresses relieves an ankle sprain. 77 candidates (11%) of the candidates believed that inducing vomiting is initial modality of management in a patient who accidentally ingested acid.

Conclusion: Initiation of First aid and Emergency care training programs among all age groups still remains an enigma. Conducting such workshops on First aid and Emergency Care among communities can make the citizens competitive enough to provide first aid independently and spontaneously in real life situations.

Keywords: Civilian; education; Emergency Medical Services (EMS); first aid; knowledge.

1. INTRODUCTION

The Merriam Webster definition of First Aid refers to the “emergency care or treatment given to an ill or injured person before regular medical aid can be obtained” [1]. In 2007, writing in *EMS India*, India's first peer-reviewed publication on EMS, Tamorish Kole, a former president of the Society for Emergency Medicine, India (SEMI), stated, "With more than 100,000 road traffic related deaths, 98.5% 'ambulance runs' transporting dead bodies, 90% of ambulances without any equipment/oxygen [2], 95% of ambulances having untrained personnel, most ED doctors having no formal training in EMS, misuse of government ambulances and 30% mortality due to delay in emergency care, India portrays a mirror image of the U.S. of the 1960s [3,4]. However, Emergency Medical Services has now established its foundation since the last decade.

As the saying goes, *‘Success is the maximum utilization of the ability that you have’*, it is essential to develop that skill in providing first aid and emergency care for the benefit of the civilian population.

The objective of the research is to assess the level of knowledge of first aid & emergency care among the classes educated in Aurangabad.

2. METHODOLOGY

The research design selected for this study was a cross sectional study conducted among the classes educated in Aurangabad, Maharashtra. The study was conducted from October 2018 to February 2019. The study population includes any candidate in the age group 15-60 years willing to participate with a prior signed written informed consent. Any candidate with educational qualification below 9th Grade or belonging to any of the medical profession was excluded from the study. The study was conducted after obtaining permission from the Institutional Ethical Committee of MGM Medical College and Hospital, Aurangabad (Approval No. 37).

700 candidates participated in the study. The candidates were selected from different schools, colleges, small firms, church gatherings and hotel staff. The subjects were fully informed about the design, aim and objectives of the study. Data was collected using a self-administered pre – tested questionnaire consisting of application-based case scenarios that tested the skills necessary to manage any casualty on a first-hand basis. Based on the scores obtained in each condition, the overall knowledge was graded as good, moderate and poor. A seminar was conducted post questionnaire and the improvement in their knowledge was tested. The seminar demonstrated case scenarios such as Road traffic accident, Splinting a fracture, managing a snake bitten wound, acute seizure episode and an ankle sprain.

The questionnaire was designed with the consultation of an epidemiologist and a critical care specialist. It consisted of 20 Multiple Choice Questions (3 options) with the following pattern of assessment (Fig. 1). This pattern of assessment was prepared due to unavailability of a standardized questionnaire approved world-wide.

The collected data was compiled in MS-Excel Sheet. For analysis of this data SPSS version 22nd was used. Qualitative data was represented in form of frequency & percentages.

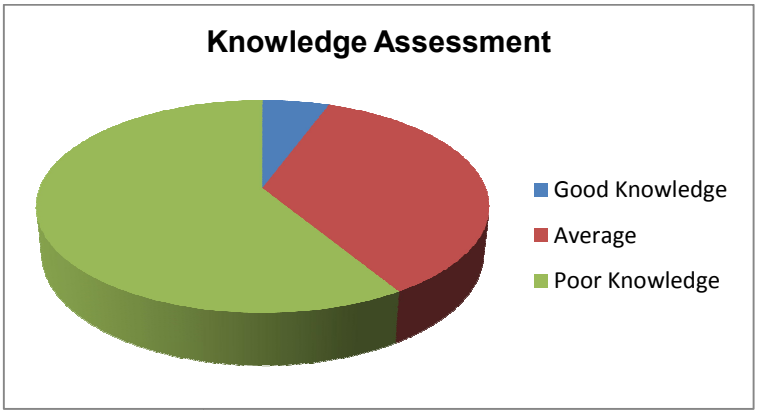

Fig. 1. Knowledge assessment distribution

Table 1. Questionnaire assessment pattern

Set of 20 questions (MCQs with 3 options to each):
Best answer to each question: 7 points (Max. score = 140 (20*7))
2nd appropriate option: 5 points
Least preferred answer: 3 points
Basic (Must know) Knowledge – 9 questions (Cut-off score = 63 (9*7))
Good (Best to know) Knowledge – 6 questions (Cut-off score = 105 (63+42 (6*7))
Average (Nice to know) Knowledge – 5 Questions (104 – 140)
Grading:
Poor Knowledge = <63
Average Knowledge = 63 – 104
Good Knowledge = 105 - 140

3. RESULTS AND DISCUSSION

3.1 Socio – Demographic Characteristics

Out of 700 candidates included in the study, 110 (15.7%) were school going children, 60(8.6%) were high school students, 50(7.1%) were college students, 280(40%) were graduates and 200(28.6%) were postgraduates. Maximum participants were from age group of 15-40 years (57.1%).

3.2 Knowledge Assessment Distribution

Out of 700 candidates included in the study, 410 (58.7%) had poor knowledge about First Aid and Emergency Care and only a mere 39 (5.6%) had good knowledge about First Aid and Emergency Care.

3.3 Association of Educational Qualification with Knowledge Status

Out of 110 school children, 81 (73.6%) had poor knowledge about First Aid and Emergency Care. Similarly, among 280 graduates and 200 post graduates, 173 (61.7%) and 115 (57.5%) had poor knowledge about First Aid and Emergency Care, respectively. However, p value was found to be non – significant (p value – 1.482). Hence, an association between educational qualification and knowledge of First Aid and Emergency Care could not be established.

Table 2. Socio-demographic characteristics

Particulars		No. of participants	Percentage
Age-group	15 - 30 years	220	31.4%
	31—40 years	180	25.7%
	41—50 years	170	24.3%
	51—60 years	130	18.6%
Gender	Female	330	47.2%
	Male	370	52.8%

Table 3. Socio-economic variable – education

Particulars		No. of participants	Percentage
Education	School going children	110	15.7%
	High school students	60	8.6%
	College students	50	7.1%
	Graduates	280	40%
	Postgraduates	200	28.6%

Table 4. Association of educational qualification with knowledge of first aid and emergency care

Education (n)	Good knowledge	Average	Poor knowledge
School children (110)	2 (0.2%)	27	81 (73.6%)
High school students (60)	5	30 (50%)	25
College students (50)	4	28 (56%)	18
Graduates (280)	18 (6.4%)	89	173 (61.7%)
Post – graduates (200)	10	75	115 (57.5%)
Total	39	249	410

3.4 Myths

The emergence of EMS in India has unintentionally exemplified common mis-conceptions and myths that are practiced today by many civilians. On encountering with the above candidates, similar results were obtained.

- 154 candidates (22%) believed that in a patient having an acute episode of a seizure, placing a key in the patient's mouth is the primary first aid technique.
- 119 candidates (17%) of the candidates believed that sucking the venom out from a snake bite wound is the primary first aid measure.
- 105 candidates (15%) of the candidates believed that applying hot compresses relieves an ankle sprain.
- 77 candidates (11%) of the candidates believed that inducing vomiting is initial modality of management in a patient who accidentally ingested acid.

The workshop conducted post questionnaire (Fig. 2 and Fig. 3) was able to abolish such misconceptions and oriented the candidates towards saving the life of a person with the right approach.

Fig. 2. Demonstrating basic emergency care at a school in Aurangabad

Fig. 3. Demonstrating 'Splinting a fracture' using available resources at a church gathering in Aurangabad

A disproportionately small health budget, with one doctor for every 1,700 people makes India carry 21% of the world's burden of disease [5]. Out of every one million people, 42,800 die every year from sudden cardiac arrest in India [6]. India also has the highest snakebite mortality in the world, with the World Health Organization estimating it at 30,000 every year [7].

It is a proven fact that a patient who receives basic emergency medical care and is transported to the nearest healthcare facility within 15-20 minutes of an accident has the highest chances of survival [8,9]. This crucial Golden Hour is the responsibility we must be aware of towards our fellow citizens.

In a study conducted among inter – city drivers in Nigeria, 8.6% candidates believed that first aid and emergency care must be provided only by health care professionals, ironic with 1% as observed in our study [10]. In a study about first aid knowledge and attitude of Secondary School Students in Saudi Arabia in 2015 revealed that the inadequate first aid preparedness is there in the Saudi student community [11]. A study in Vadodara City in India among the school teachers showed that the knowledge of first aid among teachers is quite low, for example, 85.16% (n = 472) of teachers have low knowledge and practice about first aid, in contrast to 58.7% as observed in our study [12].

In a study by Ganfure et al. in Ethiopia, only about one third of the candidates had previous first aid training which is less than the study conducted in Midwestern USA, which show two third of candidates had previous first aid training [13,14]. Our study suggested that less than 1% candidates had previous first aid training. The training sessions, workshops are conducted more often in developed countries and requires increased periodicity in developing countries like India.

To the best of our knowledge, this is the first reported large-scale study on awareness of First Aid and Emergency Care conducted in Aurangabad.

4. CONCLUSION

Various initiatives by the government has led to the growth spurt of EMS in the country in the 21st century. The launch of India's public EMS ambulance 108, the Gujarat EMS Act, Highway Trauma Care, National Disaster Management Authority (NDMA) are few of the milestones attained in the last decade. However, initiation of First aid & Emergency care training programs among all age groups still remains an enigma. Conducting such workshops on First aid & Emergency Care among communities can make the citizens competitive enough to provide first aid independently and spontaneously in real life situations. This initiative must be taken by medical students, both undergraduate and postgraduate, as a part of their social activities because as the proverb goes…

> *We make a living by what we get, but we make a life by what we give!*

CONSENT

As per international standard or university standard, participants' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

All authors hereby declare that the study has been examined and approved by the Institutional Ethics committee and has been performed in accordance with the ethical standards laid down by the Institutional Ethics Committee (Approval No. 37).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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