

An Interventional Study on Awareness Regarding First Aid and Fire Safety Among the Second Year Undergraduate Medical Students of BJ Medical College, Ahmedabad

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Abstract

Background: Providing first aid is helpful for the survival of victim. Medical students are taught to handle these emergencies in hospital setting where all facilities are available. However, this may not be adequate to deal with the emergency conditions (e.g., Road traffic accidents, fire) at the emergency site without hospital facility.

Materials and Methodology: An interventional study was conducted on 50 students of the 2nd year from BJ Medical College, Ahmedabad. They were interviewed by pretested and predesigned proforma after that student were gone through 2-days training of first aid and fire safety and again interviewed by the same proforma.

Results: The awareness among medical students about first aid was poor and about fire safety were average before the intervention, which was significantly increased after the intervention.

Conclusion: Awareness regarding first aid among the medical student was poor and awareness regarding fire safety was average before the training (Intervention) while awareness regarding both first aid and fire safety was significantly increased after the training. Girls having more awareness regarding both fire safety and first aid compare to boys.

Key words: Awareness, Fire safety, First-aid, Medical Students

INTRODUCTION

“Today’s Children are tomorrow’s citizen”. Imparting scientific knowledge to the children is inevitable to build up a healthy society. The preventive aspect of child care is an important part of health promotion, and to protect the child from various emergencies. Enlightening the children regarding various aspects of primary aid to mitigate the serious repercussions of accidents. Increased focus on safety strategies in emergency and public awareness has a

direct impact on reducing the mortality rates and improving the general health of the population. All primary school children should receive first aid training starting in first grade. It is the need of the hour to facilitate the children with scientific knowledge.¹ They are more prone to a variety of injuries. Motor vehicle accidents are the leading cause of death in the adolescent’s years. Pubescent are especially susceptible to injury when riding snowmobiles, or motorcycles, a sport that is increasing in popularity. Pillion riders may burn their legs on the exhaust pipe. Other causes are drowning and firearms; Hence, first aid is more needed in youngsters.² Estimating the burden of injuries is crucial for understanding the magnitude of the problem, developing mechanisms for intervention, allocating physical, human, financial resources for control of the problem throws light to the need of emergency aid. A review of Indian studies and observations by other agencies indicate the ratio of deaths to serious injuries

Access this article online



www.ijss-sn.com

Month of Submission : 05-2015
Month of Peer Review : 06-2015
Month of Acceptance : 07-2015
Month of Publishing : 07-2015

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needing hospitalization to minor injuries as 1:20:50. In Bangalore and Haryana, this ratio was 1:18:50 and 1:29:70, respectively. The death rate rises rapidly following puberty because of the large number of deadly accidents, homicides and suicides in the 15-24 year age group. These three causes of death in teens should all be preventable by rendering immediate aid to the casualties in order to reduce threatening complications.³

“The time for action is now. It’s never too late to do something”.

Carl Sandburg

During the past quarter, a significant increase in adolescence forced the world to look into the matter. The major part of the children had an accident on the way to school and back home. Hence, the explanation of the dangers of the road will be extremely effective in the prevention of road accidents. In India, over 80,000 persons die in the traffic crashes annually, over 1.2 million are injured seriously and about 3,00,000 are disabled permanently. During this entire period (4 years) out of 67,59,599 admissions, accidental poisoning accounted for a total of 650 cases (0.96%), out of which 130 cases (0.75%) were in 1997, 90 (0.58%) in 1998, 180 (1.2%) in 1999 and 250 (1.25%) in 2000.⁴ A study done by Daniels, on 20th April 2009 in America has evaluated about drowning physiology after the rescue. Drowning is the third largest cause of accidental death, involving over 7,000 victims annually. Many of these fatalities could be prevented with proper rescue and follow-up life support procedures. It is important that recreation professionals and other personnel responsible for aquatic programs understand the basic physiological threats present during and following drowning situations.⁵ In healthcare, we know that properly administered first aid could save a person's life, which makes the importance of learning first aid and to choose the correct and authorized first aid training. The main aim to give first aid is to save life, to prevent deterioration of the condition and further injury, to prevent conditions that might increase the original injury, to make the victims as comfortable as possible, to arrange for transportation to the hospital. To preserve the valuable life of victim's undergone emergency situations, the blossoms of future should have proper awareness regarding the first aid management.⁶ Despite their lack of knowledge, a vast majority (94%) of children agreed that it was very important for them to learn first-aid, and most wanted to learn more.⁷ You are never too young to learn lifesaving first-aid skills.⁸ The World Health Organization's South-East Asia (SEA) region bears 31% of the world's burden of injury and 27% of injury-related mortality.⁹ It is also estimated that the SEA Region accounts for 57% of the global burden of burn injury

and 53% of burn mortality.⁹ The average response time of providing emergency services in urban areas is 15 min and 20-25 min in rural and tribal areas.¹⁰ First few minutes are very important for the survival of victims. Medical students are taught to handle these emergencies in hospital setting where all facilities are available.¹¹ However, this may not be adequate to deal with the emergency conditions (e.g. Road traffic accidents, fire) at the emergency site without hospital facility.

Aims

- To evaluate the awareness of the students regarding emergency conditions.

Objectives

- To evaluate knowledge of students
- To know the attitude of students to face the emergency
- To plan for the future activity.

MATERIALS AND METHODOLOGY

The present study is Cross-sectional study, which was conducted in BJ Medical College, Ahmedabad among 100 students of 2nd-year medical students during December 2012 to February 2013. 100 students of 2nd-year medical students were randomly selected from BJ Medical College, Ahmedabad. Consent of Medical students was taken regarding participation in the study. They were interviewed by pretested and predesigned Performa after giving training regarding first-aid and fire safety they were again interviewed with same Performa. The data was compiled and analyzed in Microsoft excel and Epi info software (version 7).

RESULTS

Demographic Profile

The study was done on 100 medical students among them 50% were male, and 50% were female. Among 100 medical student 30% belong to Ahmedabad, 15% from Surat, 10% from Rajkot, 10% outside Gujarat, 6% from Vapi, 10% from Vadodara, 6% from Dahod, 7% Jamnagar, 6% from Bhavnagar. Among the 100 student, 60% were of 20 years age group and 40% were 19 years of age group (Table 1).

The present study showed that before the impartation of knowledge regarding first aid overall knowledge was found to be 33.66 % (male 19.33% and female 14.33%).

After impartation of knowledge regarding, first it was found that overall knowledge was increased up to 85.16% from 33.66% (male 45.75 % and female 39.4%).

It was showed that overall 51.5% increase in knowledge after impartation of knowledge. In the similar study by Sangowawa¹² in Ibadan, Median first aid knowledge scores before and after the intervention were 12 (5 20) and 15 (8 23) ($P = 0.05$). Median first aid skills scores were 11 (2 15) and 15 (7 20) ($P = 0.05$) for controls (Table 2).

The present study showed that before the impartation of knowledge regarding fire safety overall knowledge was found to be 55.33% (male 32.58% and female 22.75%). After impartation of knowledge regarding fire safety, it was found that overall knowledge was increased up to 85.00% from 55.33% (male 44.25% and female 40.75%). It was showed that overall 29.67% increase in knowledge after impartation of knowledge. In the similar study by Abdulrasheed Ibrahim¹³, Zaria 73 students (21.5%) had previous knowledge of burn prevention and first-

aid, compared with 262 (77.3%) who had no previous knowledge of burn prevention.

DISCUSSION

With the developmental activities of humans and resulting environmental changes, disasters, burns, and accidents are a frequent cause of morbidity and mortality. Due to lifestyle changes, the prevalence of various non-communicable diseases is also rising, which may lead to sudden deaths. In all these situations, if immediate care is given the burden of morbidity and mortality can be reduced significantly. Until a few years ago injuries were generally perceived as acts of chance. Today, injuries are not regarded as just accidents. The term "injury" instead of "accident" is used because they are predictable and preventable.¹⁴

Table 1: Awareness regarding first aid before and after the intervention there is significant rise in awareness after intervention

Awareness regarding first aid (correct answers)	Pre-test			Post-test		
	Total (n=100)	Female (n=50)	Male (n=50)	Total (n=100)	Female (n=50)	Male (n=50)
What to do first when you are alone and find someone unresponsive?	29 (29.0)	10 (34.5)	19 (65.5)	84 (84.0)	35 (41.7)	49 (58.3)
What to do if somebody is not responding to you even after shaking and shouting?	14 (14.0)	8 (57.1)	6 (42.9)	91 (91.0)	41 (45.1)	50 (54.9)
Location for chest compression in adult?	44 (44.0)	18 (40.9)	26 (59.1)	94 (94.0)	48 (51.1)	46 (48.9)
Location for chest compression in infants?	47 (47.0)	23 (49)	24 (51)	82 (82.0)	34 (41.5)	48 (58.5)
How to give rescue breathing in infants?	10 (10.0)	8 (80.0)	2 (20.0)	73 (73.0)	32 (43.8)	41 (56.2)
Depth of chest compression in adults during CPR?	18 (18.0)	10 (55.6)	8 (44.4)	80 (80.0)	35 (43.8)	45 (56.2)
Depth of chest compression in children during CPR?	23 (23.0)	16 (69.6)	7 (30.4)	79 (79.0)	36 (45.6)	43 (54.4)
Depth of compression in neonate	44 (44.0)	14 (31.8)	30 (68.2)	86 (86.0)	45 (52.3)	41 (47.7)
Rate of chest compression in adult?	30 (30.0)	12 (40.0)	18 (60.0)	98 (98.0)	48 (49.0)	50 (51.0)
Ratio of CPR in single rescuer in adult?	41 (41.0)	19 (46.3)	22 (53.4)	90 (90.0)	50 (55.6)	40 (44.4)
Knowledge about AED?	30 (30.0)	10 (33.3)	20 (66.7)	75 (75.0)	28 (37.3)	47 (62.7)
Knowledge about EMS?	74 (74.0)	24 (32.4)	50 (67.6)	90 (90.0)	41 (45.6)	49 (54.4)
Overall result (%)	33.66	14.33	19.33	85.16	39.4	45.75

CPR: Cardiopulmonary resuscitation, EMS: Emergency medical service, AED: Automated external defibrillator

Table 2: Awareness regarding fire safety before and after the intervention there is significant rise in awareness after intervention

Awareness regarding fire safety (correct answers)	Pre-test			Post-test		
	Total (n=100)	Female (n=50)	Male (n=50)	Total (n=100)	Female (n=50)	Male (n=50)
What claims most lives in fire?	36 (36.0)	16 (44.4)	20 (55.6)	86 (86.0)	38 (44.2)	48 (55.8)
What to do if electrical appliance begins to emit smoke?	94 (94.0)	36 (38.3)	58 (61.7)	97 (97.0)	47 (48.4)	50 (51.6)
Essential elements of fire?	63 (63.0)	27 (42.8)	36 (57.2)	90 (90.0)	44 (48.9)	46 (51.1)
Causes of most of fire cases?	40 (40.0)	16 (40.0)	24 (60.0)	92 (92.0)	43 (46.7)	49 (53.3)
How does a water type extinguisher put out a fire?	56 (56.0)	20 (35.7)	36 (64.3)	81 (81.0)	34 (42)	47 (58)
Color for the dry powder fire extinguisher?	59 (59.0)	26 (44.1)	33 (55.9)	96 (96.0)	46 (47.9)	50 (52.1)
Where would you look for an extinguisher in a building?	64 (64.0)	24 (37.5)	40 (62.5)	82 (82.0)	38 (46.3)	44 (53.7)
Sequence of four steps to be followed in the event of a fire?	25 (25.0)	11 (44)	14 (56)	63 (63.0)	27 (42.9)	36 (57.1)
Phone number for Fire control help in India?	64 (64.0)	28 (43.8)	36 (56.3)	87 (87.0)	42 (48.3)	45 (51.7)
What is latest symbol denoting escape route?	39 (39.0)	15 (38.5)	24 (61.5)	72 (72.0)	42 (58.3)	30 (41.7)
If your clothing get fire what should you do?	86 (86)	36 (41.9)	50 (58.1)	98 (98.0)	48 (49.0)	50 (51.0)
Acronym for using fire safety equipment?	38 (38)	18 (47.4)	20 (52.6)	76 (76.0)	40 (52.6)	36 (47.3)
Overall result (%)	55.33	22.75	32.58	85.00	40.75	44.25

As a result, of this shift in perception, burn injuries have demanded the attention of health policy decision makers' worldwide.¹⁵ Therefore, establishing strategies that increase burn prevention effectively and efficiently are warranted.¹⁶ The result of this study shows significant inadequacies in the knowledge of burn prevention and first aid treatment. This indicates a poor sense of burn safety, constituting a great educational need.^{17,18} Stop, drop and roll when your clothes catch fire and immediate cooling of burns with cold water as a first aid measure significantly determines burn outcome. It decreases morbidity and health care costs by limiting the degree of tissue damage. Consequently, the need for surgery and subsequent reconstruction is reduced.¹⁹ The possibility of disfigurement, disability, and death, demonstrate that burn prevention and first-aid knowledge must be aggressively administered.^{14,19}

CONCLUSION

From the study, it is concluded that awareness regarding first aid among the medical student was poor, and awareness regarding fire safety was average before the training (Intervention) while awareness regarding both first-aid and fire safety was significantly increased after the training. Girls having more awareness regarding both fire safety and first aid compare to boys.

RECOMMENDATION

1. This type of training or workshop should be planned to increase the awareness of medical student about first aid and fire safety in all medical college.
2. Short course regarding fire safety and first aid should be include in UG curriculum.
3. Empowered students can train community leaders such as teachers, sarpanch etc.

How to cite this article: Singh A, Mansuri S, Chaudhari A, Brahmbhatt N, Bhabhor H, Talsania N. An Interventional Study on Awareness Regarding First Aid and Fire Safety Among the Second Year Undergraduate Medical Students of BJ Medical College, Ahmedabad. Int J Sci Stud 2015;3(4):94-97.

Source of Support: Nil, **Conflict of Interest:** None declared.

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