



# Impact of Training on Knowledge and Attitude Regarding First Aid among Students of Schools of Ahmedabad

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## ABSTRACT

**Background:** Accidents and injuries rank among the leading causes of morbidity and mortality worldwide. However, it is often possible to minimize injury and crash consequences by providing effective pre-hospital services promptly. Appropriate knowledge on prevention, control and management of common illnesses and injuries will play a long way in reducing the morbidity and mortality. Hence training is a good step in reducing such mortalities.

**Method:** About 300 students of two schools of Ahmedabad city were administered a pretested pre-designed questionnaire for assessing their baseline knowledge about selected first-aid skills, followed by on-the-spot demonstration of the skills by medical students and post intervention evaluation on the same day with same questionnaire.

**Results:** The baseline knowledge about the objectives of first aid was only 36.6%. The range of knowledge about different aspects of first aid was 7.66% to 63.33% before training which increased to 39% to 92.33% as assessed after training. The lowest percentage of correct response was obtained regarding the management of foreign body in the wound (7.66%) before training. Chi square test showed that there was statistically highly significant difference in knowledge of students after training.

**Conclusion:** Training of first aid should be incorporated as a part of school curriculum.

**Key words:** First-aid, Education, Common illnesses and injuries, School children

## 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.<sup>1</sup> According to the World Health Report, the burden of the disease due to injuries has increased from about 12% in 1990 to 15% in 2000 and expected to increase to about 20% by 2020.<sup>2</sup> Injuries which commonly occur at schools setting are the leading cause of death for school students in the school-going age all over the World.<sup>3</sup>

Early and appropriate management of such emergencies and injuries can help to reduce morbidity and mortality rate.<sup>4</sup> Properly administered first aid can mean the difference between life and death, rapid versus prolonged recovery and temporary versus permanent disability.<sup>5</sup> Also providing cardiopulmonary resuscitation training in schools and university settings has been widely recommended as a long-term strategy to educate the wider community.<sup>6-11</sup>

In the general, school students have poor knowledge about safe working conditions during injuries, so most of them must be motivated to learn about first aid and basic life support which are components of chain survival for a person. Basic

first aid training prepares students to react to situations and provide immediate, efficient management for a wide variety of incidents as; choking, breathing and circulation emergencies, respiratory and cardiac arrest, fracture of bone, bleeding and cardiopulmonary resuscitation training.<sup>12</sup>

Providing of knowledge and training about correct management of injuries and illnesses to students is important for two causes; first, it will improve their health knowledge which in turn may lead to healthy and save life. Second, they may be used as a change agent in the family and community.<sup>13</sup> So the school should prepare students to meet these needs which including; assistance to victims, quickly emergency response, care for their own safety, and the safety of victims .<sup>14</sup> Therefore the aim of this study was to assess the effect of training program on students' knowledge and practice toward first aid in secondary schools.

## MATERIALS & METHODS

This school based interventional study was conducted amongst 300 secondary school students ( 200 students from Delhi Public School and 100 students from Deewan Ballu Bhai School) of the age group 13-18 years of Ahmedabad. In order to have representation of English medium and Gujarati medium students, the two schools one from each medium from Ahmedabad city were randomly selected for the purpose of study. The number of students selected from each school was in proportion to their enrolment (10% sample out of total students enrolled).

The respondents were assessed with a pretested pre-designed proforma from March 2014 to September 2014 by the medical students who were trained by the faculty of Community Medicine Department of AMC MET Medical College, Ahmedabad. The questions on management of common first aid emergencies such as unconsciousness, external bleeding, epistaxis, CPR in both adults and children, foreign body in wounds, fractures and application of splints were asked. Also their knowledge regarding approach towards casualty and recovery position was assessed. On that very day following the test, education was given to them regarding correct first aid practices. For this purpose students were shown power point presentation on the techniques of the first aid along with demonstration on the volunteers of some of the first aid techniques. This training session took roughly 2 hours. Six such sessions were conducted so as to cover 300 students in batches of 50 students each. Overall 4 such sessions were conducted for the students of DPS and 2 for the other school. Then on the same day, the same students were

evaluated to assess their post training knowledge using the same proforma.

The data so collected was entered in Microsoft excel sheet & analyzed using SPSS 17.0 software. Chi-square Test was done to evaluate the effectiveness of the health education

## RESULTS

The study population mainly comprised students aged 15-16 years (43.33%) followed by those aged 13-14 years & 17-18 years (28.33% each) as shown in Table 1. Besides the subjects were mostly girls (58.33%), with boys accounting for (41.67%) of the group. The subjects mostly practiced Hinduism (86.67%) while only (6.33%) belonged to the Muslim community.

**Table 1: Socio-demographic profile of the students**

Socio-demographic variables	Students (n=300) (%)
<b>Age (years)</b>	
13-14	85 (28.3)
15-16	130 (43.3)
17-18	85 (28.3)
<b>Sex</b>	
Male	125 (41.7)
Female	175 (58.3)
<b>Religion</b>	
Hindu	260 (86.7)
Muslim	19 (6.3)
Sikh	10 (3.3)
Christian	11 (3.7)

**Table 2: Students' perception about first aid prior to seminar**

Perception about First aid ( N=300)	Yes (%)	No (%)
Considering themselves aware about first aid	177 (59)	123 (41)
Need for inclusion of first aid in curriculum	240 (80)	60 (20)

Regarding the perception of the students about first aid prior to seminar, only 59 % were aware about first aid. 80% of students were of the opinion that first aid should be included in their curriculum. (Table 2) On comparing the number and percentage of correct responses obtained for each of the questions made to elicit the knowledge of the subjects regarding selected first-aid measures, a remarkable improvement was seen for every question after imparting the training as is seen in Table 3. The maximum percentage of correct response was obtained for the question on application of splint (63.33%) and minimum correct response percentage was obtained for the management of foreign body in wound(7.66%) before training.

**Table 3: Information regarding improvement in knowledge of students**

Knowledge	Correct response		P value
	Pre test (%)	Post test (%)	
Aims of first aid	110 (36.66)	240 (80)	P< 0.0001
Normal Pulse rate	182 (60.66)	277 (92.33)	P< 0.0001
Approach towards the casualty	25 (8.33)	162 (54)	P< 0.0001
Approach towards unconscious Victim (alertness, verbal stimuli, painful stimuli & unresponsiveness)	79 (26.33)	163 (54.33)	P< 0.0001
Approach towards unconscious Victim (shake the shoulders & shout)	129 (43)	262 (87.33)	P< 0.0001
Management of arterial bleeding	75 (25)	238 (79.33)	P< 0.0001
Management of Bleeding wounds	44 (14.66)	117 (39)	P< 0.0001
CAB of CPR	52 (17.33)	230 (76.66)	P< 0.0001
CPR technique in Adults	96 (32)	251 (83.66)	P< 0.0001
CPR in child	80 (26.66)	267 (89)	P< 0.0001
Management of Foreign body in wound	23 (7.66)	189 (63)	P< 0.0001
Management of nose bleeding	114 (38)	197 (65.66)	P< 0.0001
Application of Splints	190 (63.33)	230 (76.66)	P=0.0004
Management of Fractures	103 (34.33)	248 (82.66)	P< 0.0001
Knowledge of Recovery position	64 (21.33)	210 (70)	P< 0.0001

After imparting training, the maximum percentage of correct response was obtained for the question on normal pulse rate (92.33%) followed by question on CPR on child (89%) and the minimum percentage on the question for the management of bleeding wounds (39%). Improvement in the knowledge/skills if any was assessed by comparing pre-/post- evaluation responses and applying test of significance (Chi square test). The "X<sup>2</sup>" values obtained were significant as determined from the "X<sup>2</sup> Table" along with significant "p" values <0.05 for all the questions. Exact p values for each question are shown in the table 3. There was statistically significantly higher knowledge gain amongst students after training program in all aspects of first aid as seen in Table 3.

## DISCUSSION

In the present study it was observed that 59% of secondary school students considered themselves aware of the meaning of first aid which was in sharp contrast to the study conducted by Swetha, C, Suchitra, MN and Sahana where 96% of nursing students were aware about first aid.<sup>15</sup> The reason behind this difference in response may be due to the study population in present study was school going children whereas in the reference, nursing students are study subjects who may be introduced to first aid training at some point or the other in their nursing career. Similarly, a study done by Bildik *et al*, in 2011 stated that first aid knowledge at a faculty of education was considered to be insufficient.<sup>16</sup> A study done by Sembal *et al*. which included rapid assessment of first aid knowledge in 156 people of rural field practice area in Department of Community Medicine, HIHT University, Dehradun showed that only 25.6% persons were familiar with the term first aid and people also lacked knowledge and awareness about first

aid skills.<sup>17</sup> Metin *et al*. conducted a study in a total of 134 university students to find out their knowledge about first aid which determined that 65.7% students didn't get first aid knowledge before and most (98.5%) of the students feel it is necessary to have first aid education.<sup>18</sup>

After implementation of the program there were significant improvement in their knowledge and practice scores regarding first aid and basic life support. Regarding socio-demographic characteristics, the study results revealed that the 43.33% of the students were in the age group (15- 16) years old. While 28.33% of students were in age group 13-14 years of age. These results were slightly different from the studies conducted by Seham A. Abd El-Hay, Nagwa A. Ibrahim and Lulah A. Hassan where two fifths of study subjects were in age group 15-16 years<sup>19</sup> and also study conducted by Dasgupta A., *etal*.<sup>20</sup>

who said that most of the students subjects were 14 years of age (58.09%). In relation to gender, most of the study subjects were females (58.33%) which was in agreement with the study conducted by Dasgupta A., *etal*.<sup>20</sup> where 56.2% of the subjects were females. In our study, 80% of students were of the opinion that topic of first aid should be included in their curriculum which was similar to the findings of study conducted by Metin and Mutlu, where 98.5% of the students felt that it was necessary to have first aid education.<sup>18</sup> Concerning level of knowledge about first aid among studied students, the study results revealed that there were highly statistically significant improvement in the level of knowledge regarding first aid after post training program at P = 0.0001 as shown in Table 3. This may be attributed to school-age are more likely to accept first aid and cardiopulmonary resuscitation training than older people, also they are motivated to learn and do so quickly and easily.

This results were in agreement with studies conducted by Seham A. Abd El-Hay, Nagwa A. Ibrahim and Lulah A. Hassan<sup>19</sup> and also study conducted by Naqvi S., et al. <sup>21</sup>who reported that there was a highly significant increase in the level of knowledge and skills of participant after the training. The findings of our study were also similar to study conducted by Muneeswari B. <sup>22</sup>who said, that the knowledge score regarding first aid measures was highly significant after administration of training program. Also his findings showed that training program played an important role in improving the knowledge of school students regarding first aid. If students share the acquired knowledge with their families and non-trained friends, we indirectly introduce a larger part of the community to the topic of first aid. In the same line Conolly M., et al. (2007) <sup>23</sup> determined that in their study, conducted in Northern Ireland, that children instructed in CPR showed a highly significant increase in level of knowledge following the training session. Also Alanazi A., et al. (2013)<sup>24</sup> reported that in their study which was carried out in high school students at Riyadh Saudi Arabia indicates that school students lacked CPR knowledge pre-program & only 45.5% of the students were aware about the right technique of foreign body removal from victim and the role of the recovery position during procedure. In our study only 7.66% of students were aware about correct technique of foreign body removal from wound & only 21.33% had knowledge about recovery position pre-training but after training there was extremely statistically significant difference in level of knowledge. Concerning management of fractures, bleeding nose and application of splint, the study results revealed that there were highly statistically significant improvement in level of knowledge throughout the study at  $p=0.0001$  following training, suggesting an increase in knowledge among the participants after training program. As regard to cardiopulmonary resuscitation among adults & in children, the study results reported that, there were highly statistically significant improvement in the total practice post training program at  $p = 0.001$ . Also, study conducted by Abbas A., et al.<sup>25</sup> showed an increase in knowledge among the intervention group after training program. The management of nose bleeding was also poor with only (38%) giving correct response pre- program while in study conducted by Das Gupta et al. only 12 % of the students could manage bleeding nose correctly before training program.<sup>20</sup>

### Limitation of the Study

Since it was a school based study, the major limitation was the time constraint. The time allotted for

the training of the necessary first aid skills had to be completed within 2 hours only. Due to time constraint, only few first aid skills could be demonstrated. Since both pre & post evaluation was done on same day only the students who were present were included in the study, the rest who were absent remained deprived of the training process. Further assessment of the skills could not be carried out due to the same reasons.

### CONCLUSION

Therefore, there is a definite need for strengthening the knowledge among students by regular quality training programmes on first-aid in schools. Training of first aid regarding the management of common illnesses and injuries should be incorporated as a part of school curriculum. Also, school teachers should be trained on basics of first aid so that they can handle any emergency situation during school hours. Besides, they can also act as first aid trainers for the students.

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