

Research Article

A Study to Assess the Impact of Self-instructional Module on Knowledge among Adolescent Students regarding First Aid Measures for Selected Emergencies in a Selected Higher Secondary School, Devsar, Kulgam

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A B S T R A C T

Introduction: First aid is an important life-saving skill that everybody should know. As young people move towards independence and take on responsibilities in their own lives, they should know how to help others, whether it is a family member, friend or fellow citizen. While there are moves underway to introduce first aid training into the secondary school curriculum, there are other ways to give our kids and ourselves at least an elementary knowledge of the first aid basics. This study intended to assess the impact of a self-instructional module on knowledge among adolescent students regarding first aid measures for selected emergencies in a selected higher secondary school of Devsar, Kulgam.

Method: A quantitative methodology was used with a pre-experimental one group pre-test and post-test design on a convenient sample of 50 adolescent students. A self-structured questionnaire was used to collect the data.

Result: Data were analysed using descriptive and inferential statistics. Data analysis through SPSS-16 version by using t-test exposed significant difference (21.18) and $p < 0.001$ amongst pre-test and post-test knowledge scores of respondents.

Conclusion: Thus the study revealed a substantial increase in knowledge scores amongst adolescent students regarding first aid measures for selected emergencies after administration of the self-instructional module.

Keywords: Impact, Self-instructional Module, Knowledge, Pre-test, Post-test

Introduction

Taking responsibility of peoples' health ought to begin with themselves. The battle for health cannot be fought by medical practitioners alone. It is a process in which the entire population must be mobilized permanently to struggle in the war against diseases and injuries.^{1,2}

Human beings are susceptible to injuries and trauma. The unpredictability of an adverse event leading to an injury makes it beneficial for us to have some basic knowledge of how to manage such a critical situation till the medical help arrives.³

First aid is the provision of initial care for an illness or injury. It is usually provided by trained or untrained personnel to a sick or injured person until appropriate medical treatment can be accessed. Certain self-limiting illnesses or minor injuries may not require further medical care after the first aid management. It generally consists of a series of simple, in some cases, potentially life-saving techniques that a trained person can provide with minimal equipment.⁴

Adolescence is the most adventurous phase, characterized by increased proximity to various types of accidents and emergencies as the adolescents try to explore the environment. All adolescent students should receive first aid measure training initially. It is the need of the hour to facilitate the adolescent students with scientific knowledge. Adolescent students are a significant and important segment of the population. They need maximum attention in terms of their education, health, social and emotional development. In India, school health services exist primarily to preserve and promote the health of adolescents.⁵ Accidents represent a major epidemic of non-communicable disease in the present century. Emergencies and injuries commonly occur at home and in a school setting. Accidents are the fourth leading cause of death. Injuries are the leading cause of death among adolescents. Accidents are epidemic among the active and productive age group. In India, 5000-10,000 fatal injuries occur every year.⁶

Shrestha S, Gurung P⁷ (2018), conducted a descriptive exploratory study to assess the awareness on prevention and first aid management of burn injury among adolescent students in Shree Prithvi Narayan secondary school, Tarkeshwor, Kathmandu by using a self-administered questionnaire. Data were collected from 101 students. The data were analysed using descriptive statistics. An awareness of < 50% was categorised as inadequate awareness, awareness of 50% to 75% was categorised as moderate awareness and awareness of > 75% was categorised as an adequate level of awareness. The selected respondents belonged to 12-16 years of age. Among them 54.5% were female and 45.5% were male. On analysing their knowledge of burn injury prevention, it

was found that 15.8% of the respondents had inadequate knowledge, 40.6% had moderate knowledge and 43.6% had adequate knowledge. Similarly, the awareness on first aid management of burn injuries, 4.9% of the respondents had inadequate awareness, 71.3% had moderate awareness, and 23.8% had adequate awareness.

It is important to know about first aid measures so that you can help yourself or others who are injured. The chances of someone recovering more easily, even surviving after an accident or injury can be greatly improved if someone immediately uses first aid knowledge to help them. There are many programs to teach basic first aid measures to adolescent students in schools, colleges and community settings.⁵

First aid is the immediate care given to the victims of accidents before trained medical personnel arrives. Its goal is to stop, if possible, reverse the harm. It involves rapid and simple measures such as clearing the airway, applying pressure to bleeding wounds, washing chemical burns to eyes or skin.⁸

Thus from the above findings of the studies and while working as a healthcare vocational trainer in Govt. Higher Secondary School, Malwan Kulgam, the researcher found that the students were having a lack of knowledge regarding first aid measures during emergencies which motivated the researcher to take this topic under study.

Literature Review

A review of literature serves as evidence and essential background for any research.

Alshehri KA, Alqulayti WM, Saggaf OM, Enani MZ, Bahatheq AK, et al.⁹, conducted a cross-sectional study in Jeddah Saudi Arabia among adolescent students to assess the awareness regarding first aid measures of epistaxis among adolescent students. The data were collected from 706 adolescent students by using a convenient sampling technique. Data were collected by distributing a paper-based questionnaire. 53.4% of the adolescent students were male and 46.6% of the adolescent students were female. Based on the correlation between our variables, 57.5% of the students had a good knowledge score and 3.5% had an excellent knowledge score. Male students were significantly more knowledgeable than female students. The study concluded that awareness regarding first aid measures of epistaxis was fair. However more integrated educational resources should be made available for adolescent students and teachers. Ramsha R, Ramsha R, Lubna R, Jehanzeb K¹⁰ (2020), conducted a cross-sectional study in various universities of Karachi, Pakistan among undergraduate medical and non-medical adolescent students to assess the knowledge regarding first aid measures of burn. The sample size was 400 adolescent students and was selected by using convenience

sampling technique. A structured questionnaire were used to collect the data. The analysis was conducted by using the SPSS software and the association was calculated by t-test. A mean knowledge score was calculated to assess the participant's adequacy of knowledge regarding first aid measures of burn. The findings of the study revealed that medical adolescent students had a better knowledge score than their non-medical counterparts (5.8 ± 1.6 versus 3.6 ± 1.5 , ($p < 0.01$)). Majority of the students had inadequate knowledge regarding first aid measures of burn and recommended that there is a need for integrating this topic into the curriculum. In addition, education of the masses via multimedia and conducting formal training courses, are both imperative in raising awareness. Venkatesan M, Dongre M¹¹ (2017), conducted a cross-sectional study in a rural district of Tamil Nadu among 5841 adolescent students to study the prevalence of dog bite, its risk factors, and treatment-seeking behaviour. The prevalence of dog bite episodes in the last one year was 17.9 per 1000 children. Most of the dog bites happened in male children (51.5%), less than 10 years of age (56%) and children below poverty line (80%). Almost 78% of dog bites were unprovoked and the majority of the dog bites took place in and around the house (70%). The most common site of bites was the lower limb (53.5%), followed by the upper limb (27.6%). It was concluded in the study that the prevalence of dog bite was high and common in children belonging to poor socio-economic status. Goktas S, Yildirim G, Selmin KO, Yildirim S, Ozhan F¹² (2014), conducted a cohort research study at the University of Istanbul among adolescent students to evaluate the first aid knowledge for poisoning. 936 adolescent students were selected for the study. The data were collected by using a questionnaire form, which had 21 questions prepared by researchers. Analysis of the data was carried out with a percentage evaluation method and chi-square tests in a computer environment. The findings of the study revealed that 92.6% of the students ($n = 867$) knew the phone number of the ambulance in case of emergency. In addition, 57.3% of the students ($n = 536$) knew the phone number of the poison hotline and it was seen that they answered the questions regarding the relationship between body system and indications of poisoning correctly. It was determined that the students who received education in medical departments gave more correct answers than the students who had education in other departments ($p \leq 0.001$, $p \leq 0.01$). The study thus concluded that the university students in medical departments had more first aid knowledge on poisoning cases compared to the students in other departments who did not have sufficient information regarding these issues. It was thought that first aid education, related to both poisoning and other first aid issues, should be provided to all the students in all departments of universities. Moutlaq Alsayali R,

Althubaiti AQ, Altowairqi RM, Alsulimani FA, Alnefaie BM¹³ (2019), conducted a cross-sectional study at Taif University among medical and non-medical adolescent students to examine the knowledge and attitude of the subjects with respect to first aid skills. 500 male and female adolescent students were selected by using convenience sampling technique. The data were collected by a questionnaire. The questionnaire included two parts, part 1 included socio-demographic variables and part 2 included items related to knowledge, awareness, attitude and practice regarding first aid skills. The mean age of the participants was 21 ± 1.5 years. 56.6% of the participants were found to have good awareness regarding first aid management and Basic Life Support (BLS). The attitude towards first aid management was very poor and only 8% had a good attitude towards it. There was a statistically significant relationship observed between the attendance registered in first aid course and its awareness, knowledge and practice. Thus the study concluded that the attitude and skill of study participants were not satisfactory, the university needed to organize an effective committee to monitor and conduct first aid courses and activities. The students need to realize the public importance of such activities and ensure their effective involvement in these life-saving procedures. Das K, Pal A, Dasgupta A, Bandyopadhyay L, Paul B, Mandal S, et al.,¹⁴ conducted a quasi-experimental study at a school in Kolkata among adolescent students to assess the effectiveness of educational intervention regarding first aid management of selected medical emergencies. 201 adolescent students were selected for the study. A pre-designed, pre-tested questionnaire was used to collect the data. Educational intervention was administered in the form of lectures and demonstrations. A post-interventional evaluation was done using the same questionnaire, after two weeks of intervention. Data were analysed by SPSS version 16.0. The findings of the study revealed that health professionals (29.2%) and teachers (26.1%) were the primary sources of knowledge. Wilcoxon Signed-Rank test was carried out to determine the effect of an intervention on the knowledge and attitude scores of the adolescent students. There was a statistically significant increase in knowledge ($Z = 10.982$, $p = 0.005$) with a large effect size ($r = 0.54$) and an increase in attitude, though not statistically significant ($Z = -1.949$, $p = 0.05$) with a small effect size. The study thus concluded that there was a need for a uniform, interactive module including hands-on activities and periodic mock drills to be incorporated as a separate entity to encourage participation.

Material and Method

A major contribution to this present research was a pre-experimental design which included pre-test and post-test design, where only the experimental group was designated as the study subject. The study was conducted for a period of 10 days from 15th September 2020 to 25th September

2020. Data collection was done in selected Govt. Higher Secondary School Devsar Kulgam. Formal permission to conduct the study was obtained from the principal. Based on the selection criteria, adolescent students studying in 9th and 10th standards were selected by using convenient sampling technique. The subjects were approached and rapport was established by self-introduction followed by information about the purpose of the study. Confidentiality, anonymity and autonomy of their responses were assured. Informed written consent was obtained from the subjects. A pre-test assessment of the study variables was made prior to the application of treatment to the selected group. The treatment was administered and a post-test assessment of variables was done to measure the outcome of treatment on the group.

Adolescent students were assessed for their pre-test knowledge scores by giving a structured questionnaire containing 60 items. A self-instructional module on knowledge regarding first aid measures for selected emergencies was administered following pre-test after 15 minutes and the post-test was taken on the 7th day after implementation of the self-instructional module to assess the gain in knowledge.

The study was carried on a sample of 50 adolescent students in the age group of 13 to 19 years studying in selected Higher Secondary School Devsar, Kulgam. The sample was selected through a non-probability convenient sampling technique. Proper approval was sought from the higher secondary officials and ethical board before data were collected. The conditions for inclusion in the study were determined by interviewing and reviewing the records. The inclusion standard included adolescent students who were in the age group of 13 to 19 years in a selected higher secondary school Devsar, Kulgam, willing to participate in the study, available at the time of data collection. The exclusion standard included adolescent students who were not willing to participate, were not available at the time of data collection or belonged to any standard other than 9th and 10th. The data collection was made through responses to a structured knowledge questionnaire obtained from the adolescent students studying in selected Higher Secondary School Devsar, Kulgam. The questionnaire was divided into two sections:

Section 1: Related to demographic data.

Section 2: Related to knowledge among adolescent students regarding first aid measures for selected emergencies and was sub-divided into five parts which included:

- **Part I:** Introduction related to first aid
- **Part II:** Epistaxis and its first aid measures
- **Part III:** Burn and its first aid measures
- **Part IV:** Dog bite and its first aid measures
- **Part V:** Poisoning and its first aid measures

The data collected through the questionnaire was exposed to tests of reliability (Karl Pearson's correlation reliability coefficient test) thereby ensuring internal consistency among the items of the questionnaire. Value of alpha larger than 0.97 proved a high degree of internal correlations among items, hence it was taken for the final study. Additionally, the validity of the questionnaire was established on the basis of an expert's opinion. Changes if any were incorporated and the final study was conducted.

Data analysis was done by SPSS-16 using frequency and percentage to analyse the background information, knowledge and selected outcome. Mean percentage and standard deviation were used to describe the knowledge and selected outcome. Further t-test was used to compare means of the knowledge scores and the possible selected outcomes and accordingly inferences were made.

Result and Discussion

The findings of the study are discussed under these sub headings.

Demographic Findings of the Study Group

Most of the study subjects (36 (72%)) were males and (14 (28%)) were females. (25 (50%)) study subjects were studying in the 9th standard and (25 (50%)) were studying in the 10th standard. 27 (54%) study subjects had illiterate mothers. The level of education of the mothers of 16 (32%) study subjects was between primary and middle school, for 7 (14%) study subjects, it was between 9th and 12th standard. None of the mothers was graduate and above. 7 (14%) study subjects had illiterate fathers. The level of education of the fathers of 10 (20%) study subjects was between primary and middle school, for 16 (32%) study subjects, it was between 9th and 12th standard, for 17 (34%) study subjects, it was graduation and above.

Table I. Socio-demographic Profile of Study Group

Demographic Variables	Categories	Respondents	
		Frequency	Percentage (%)
Gender	Male	36	72.0
	Female	14	28.0
Class	9 th	25	50.0
	10 th	25	50.0
Educational status of mother	Illiterate	27	54.0
	Primary to middle	16	32.0
	9 th to 12 th	7	14.0
	Graduation and above	0	0.0
Educational	Illiterate	7	14.0

status of father	Primary to middle	10	20.0
	9th to 12th	16	32.0
	Graduation and above	17	34.0
Source of information regarding first aid measures	Parent	20	40.0
	Teacher	17	34.0
	Radio/ TV	9	18.0
	Newspaper	0	0.0
	Internet	4	8.0
	Friend	0	0.0

Maximum study subjects (20 (40%)) had received information about first aid measures from parents, 17 (34%) had received it from teachers, 9 (18%) had received it from radio/ TV, 4 (8%) had received it from the internet. None of the study subjects had received information from newspapers and friends (Table 1).

Knowledge Score of Adolescent Students regarding First Aid Measures for Selected Emergencies in Pre-test and Post-test

Frequency and percentage distribution of knowledge scores of adolescent students according to their pre-test and post-test scores showed that majority of the study subjects (39 (78%)) had moderate knowledge, 11 (22%) had inadequate knowledge and none of the study subjects had adequate

knowledge in the pre-test. Majority of the study subjects (38 (76%)) had adequate knowledge, 12 (24%) had moderately adequate knowledge and none had inadequate knowledge in the post-test (Table 2).

Comparison of Pre-test and Post-test Knowledge Scores

The test results showed the pre-test and post-test knowledge scores of adolescent students regarding first aid measures for selected emergencies. The t-test values showed significance (at the level of $\alpha = 0.05$). It was evident that compared to the pre-test knowledge score, there was a noteworthy increase in the post-test knowledge score. Therefore it was interpreted that the self-instructional module was operational in improving the knowledge among adolescent students regarding first aid measures for selected emergencies (Table 3).

Association of Pre-test Knowledge Scores of Study Subjects with Selected Demographic Variables

The study results presented a significant association between the mean pre-test knowledge score and Educational status of father ($p = 0.043$), whereas no significant association was found with other demographic variables i.e., class ($p = 0.544$), gender ($p = 0.951$), educational status of mother ($p = 0.907$), and source of information regarding first aid ($p = 0.957$). Therefore it was inferred that the self-instructional module was effective in improving the knowledge among adolescent students regarding first aid measures for selected emergencies (Table 4).

Table 2. Knowledge Scores of Adolescent Students regarding First Aid Measures for selected Emergencies in Pre-test and Post-test

Level of Knowledge	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Inadequate	11	22	0	0
Moderately adequate	39	78	12	24
Adequate	0	0	38	76

Table 3. Comparison of Pre-test and Post-test Knowledge Scores

Knowledge Assessment	Mean	Median	SD	Min	Max	Mean difference	Paired 't' test	P-value
Pre-test	32.94	34	7.12	13	34	16.54	21.18	< 0.001*
Post-test	49.48	49	6.27	44	60			

Table 4. Association of Pre-test Knowledge Scores of Study Subjects with selected Demographic Variables

Variables Inadequate		Level of Knowledge			Chi-square	P-value	Df	Result
		Moderately Adequate	Adequate					
Gender	Male	8	28	0	0.004	0.951	1	NS
	Female	3	11	0				
Class	9th	8	17	0	0.368	0.544	1	NS
	10th	3	22	0				

Education of mother	Illiterate	6	21	0	0.327	0.907	2	NS
	Primary to middle	4	12	0				
	9th to 12th	1	5	0				
	Graduation and above	0	0	0				
Education of father	Illiterate	4	3	0	8.083	0.043	3	S
	Primary to middle	3	7	0				
	9th to 12th	3	13	0				
	Graduation and above	1	16	0				
Source of information regarding first aid	Parent	5	15	0	0.314	0.957	3	NS
	Teacher	3	14	0				
	Radio/ TV	2	7	0				
	Newspaper	0	0	0				
	Internet	1	3	0				
	Friend	0	0	0				

Conclusion

The findings of the study assessed that the effectiveness of the self-instructional module in improving the knowledge of adolescent students regarding first aid measures for selected emergencies. The results of the study showed that there was a significant improvement in knowledge among adolescent students example from only 0 (0%) students having adequate knowledge in the pre-test to 38 (76%) students having adequate knowledge in post-test and from 11 (22%) students having inadequate knowledge in pre-test to 0 (0%) students having inadequate knowledge in post-test. The findings of the study also showed that most of the students example 20 (40%) had got information regarding first aid measures from parents. The study also showed that pre-test knowledge of adolescent students had a significant association with the educational status of fathers of the study subjects ($p = 0.043$).

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