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Assessment of the effectiveness of self- instructional module on knowledge regarding first aid management of selected minor injuries among students of Govt. senior secondary school: A pre-experimental study

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Abstract

Background: First aid is the immediate care given to a person who has been injured or suddenly fallen ill. First aid education is important to aware teenagers and young people as they are most likely to push boundaries and take risks when things go wrong, hence it is vital that they are equipped with the knowledge and confidence to help others and themselves.

Objective: The objective of this study conducted in 2019, was to evaluate the effectiveness of self-Instructional module on first aid management of selected minor injuries (falls, nose bleeding, insect bite, minor burns and fits) by comparing the pretest and post-test knowledge scores of school students.

Methodology: A quantitative approach with pre experimental, one group pretest post test design was used.

Sample and sampling technique: This study included 60 samples of senior secondary school students. Samples were selected using convenient sampling technique.

Setting: The research setting was Govt. Senior secondary school, Bhattakuffar, Shimla.

Tools: The Socio Demographic Performa and structured knowledge questionnaires was used to collect the data. After assessing the preexisting knowledge of the samples, (SIM) on first aid management of selected minor injuries was administered to the students. At the end post test was conducted.

Results: In analysis both descriptive and inferential statistical methods were used. The pre-test mean score was 14.82. The post test mean score was 21.77. The difference in mean% was 6.95. The results of the post test depicted that, (30%) students had moderate knowledge, and (70%) had adequate knowledge and none of the students had inadequate knowledge. The conclusion of the study revealed that there was significant improvement in the knowledge on first aid management of selected minor injuries among students after administration of SIM.

Keywords: First Aid, Minor Injuries, Effectiveness, SIM (Self-Instructional Module)

1. Introduction

Unpleasant though it may be, the fact remains that accidents happen. Even experiencing it as a bystander, an accident is not a pleasant scene. If an accident happens in the workplace, we cannot be a helpless witness, since simply standing by can potentially worsen the situation. First aid training is of particular importance in case of catastrophe, when medical and hospital services are limited or delayed. Parker, (n.d.)

First aid is the temporary and immediate treatment given to a person who is injured or suddenly becomes ill, with the facilities or materials available at that time before regular medical help is arrived. The person giving first aid, the first-aider, deals with the whole situation, the injured person, and the injury or illness. Many accidents occur in schools ranging from minor scrapes, falls and wounds to fractures and other minor injuries such as nose bleed, insect bite, minor burns, and fits that require a swift initial medical response. Santhikrishna & Rekha, (2018) ^[1].

Reflecting light on nose bleeding the nose contains many blood vessels, which are located close to the surface in the front and back of the nose. They are very fragile and bleed easily hence nose bleeding is the most common minor injury seen and requires prompt action. It can be managed by positioning the patient with the head forward to allow blood to drain from the nose and not down the throat. Higuera, (2018) ^[2]

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Nearly everyone has been bitten or stung by an insect or bee at one time or another. The body reacts to sting and other proteins that bee inject into body through their saliva. This can result in symptoms at the site of the bite or sting, such as: redness, swelling, pain, itching. So immediate measures are required during such incidents. These symptoms can be managed if immediately the bee sting is removed from the site of bite. Hepler, (2016) [3]

Further a minor burn is a tissue damage that results from scalding and overexposure to the sun or other radiation, contact with flames, chemicals or electricity. Burns can be very painful and may results in red or peeling skin, white or charred skin or blisters. If not taken care of timely it may not heal. So rinsing the burn area with running water and covering the portion with non-stick dressing can help reduce pain and other complications. Mayo clinic, (2018) [4]

Focusing on neurological system, fits can take on many different forms, and affect different people in different ways. The symptoms of fits can be falling and having uncontrollable muscle spasms in victims, drooling or frothing in the mouth. Fits can be managed by adequate knowledge of placing the victim in safe environment in order to reduce the risk of injury by removing the sharp objects from surroundings. Schachter, (2014) [5]

In schools accidents happen in school premises, near by the roads of the school and while coming and returning from

schools. Therefore safety awareness must be inculcated among students. Providing students with first aid training helps to reduce risk and empower them with the ability to assess and manage the situation in the event of a medical emergency. Santhikrishna & Rekha, (2018) [1]

The Study reveals that the Implementation of the Good Samaritan Law is a major challenge. Low levels of awareness related to this law must be overcome by providing more interventions and raising awareness about the Law amongst citizens and key stakeholders. The other way to improve implementation is for States to enact legislation protecting Good Samaritans. Good Samaritan. (n.d.)

As first aid is a temporary treatment, it still plays a great role in preventing the situation from getting serious or worse. Although there are many ways of creating awareness and improving the knowledge of students regarding first aid management of minor injuries but Self-instructional module has also been found effective, for this reason the researcher has chosen this intervention for improving the knowledge of school students. Well-trained first aiders apply the right methods to keep the situation under control. They put every effort to help victim cope with the illness or pain until professional help arrives.



Fig 1: Good Samaritan law

2. Methodology

Research methodology is the significant part of any research study, which enables the researcher to project a blue print of the research understanding. It includes the strategy to collect and analyze the data to accomplish the research objectives. It includes research approach, research design, the setting, the population, and sample and sample technique, development and description of tool, procedure for data collection and plan for data analysis. The research approach adopted in the study was Quantitative research approach. A pre-experimental, one group pre-test post test design was selected for the present study. This study was conducted at Govt. Senior Secondary School, Bhattakuffar, Shimla, Himachal Pradesh, 2019. Population included school students of class (11th and 12th) standard. A sample of 60 students for assessment of knowledge and evaluation of self-instructional module on first aid management of selected

minor injuries was taken and convenient sampling technique a type of non-probability sampling technique was found appropriate for this study. An inclusion criterion for sampling was students who were willing to participate and both male and female. The exclusion criterion for sampling was students who were sick or absent at the time of study. With the extensive review of literature and discussion with the experts structured questionnaires were developed to assess the knowledge of students regarding first aid management of selected minor injuries. The tool of data collection consisted of two sections. Section-1: Demographic Variables to collect data about certain characteristics of sample population. Section -2: Structured Questionnaires were developed to assess the knowledge of students regarding first aid management of selected minor injuries. Validity of tool was established by experts of from nursing field for content. The reliability of tool was determined by

using split half method and the tool was found to be reliable. The “r” value calculated was $r = 0.85$ hence the tool was considered reliable for proceeding the main study. In relation to Ethical approval, written permission was taken from Principal of Govt. Senior Secondary school, Bhattakuffar, Shimla. Informed consent was taken from the students of Govt. Senior Secondary school. Pilot study was done at Govt. Senior Secondary School, Sanjauli, Shimla. The data collection for final study was done in May, 2019. Data collection was carried out by using structured questionnaires. The purpose and details of the study was explained to the students. Assurance was given to the

subjects regarding the confidentiality of the data collected. The tool was administered in the form of structured questionnaire and on the same day a well-designed self-instructional module on first aid management of selected minor injuries was distributed to the students. After 7 days a mean post-test was conducted by using a same questionnaire.

3. Results

Section A: Description of demographic variables among school students

Table 1: Frequency and percentage distribution of school students based on demographic variables Such as Age, Gender, Class of studying, Exposure to any incident, Source of information. N=60

S.N	Demographic Variables	Frequency (n)	Percentage (%)
1.	AGE		
	15 Years	9	15.0%
	16 Years	30	50.0%
	17 Years	21	35.0%
2.	Gender		
	Male	30	50.0%
	Female	30	50.0%
3.	Class Of Studying		
	Class11	30	50.0%
	Class12	30	50.0%
4.	Exposure To Any Incident		
	Yes	15	25.0%
	NO	45	75.0%
5.	Source of Information		
	Books or subject of health care	33	55.0%
	Mass media or internet	18	30.0%
	Family or friends	9	15.0%

Table 1 shows the frequency and percentage distribution of demographic variables with respect to age, gender, class of studying, exposure to any incident, source of information.

1. Percentage distribution of study subject as per age

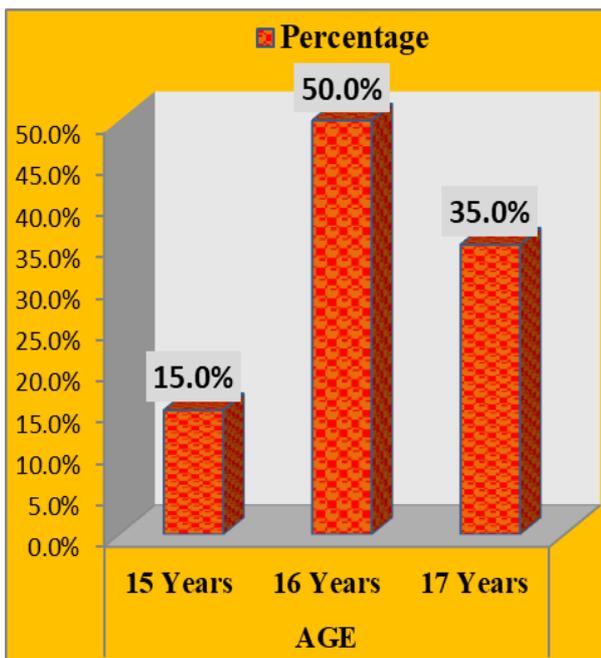


Fig 2: reveals, 15% students were in the age group of 15 years, 50% were in the age 16years, and 35% were in the age of 17 years.

2. Percentage distribution of study subject as per gender

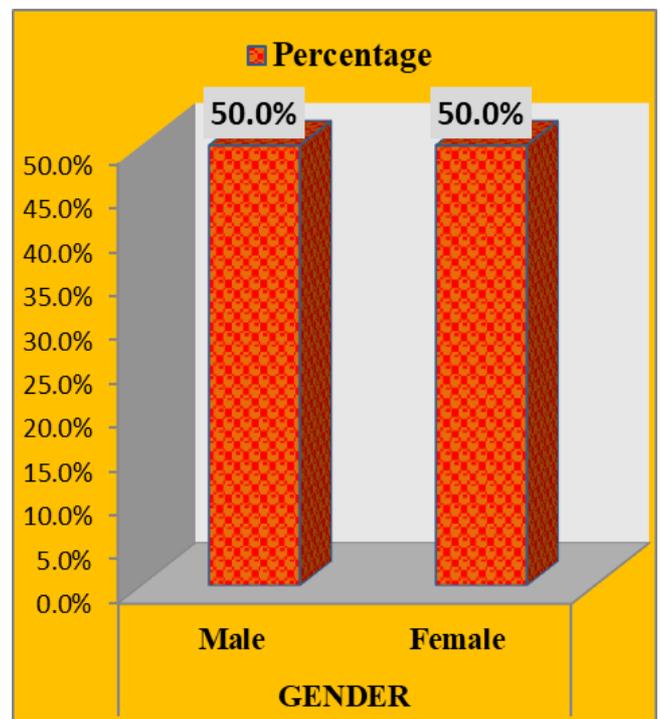


Fig 3: depicts 50% students were Male, 50% were female.

3. Percentage distribution of study subject as per class of studying.

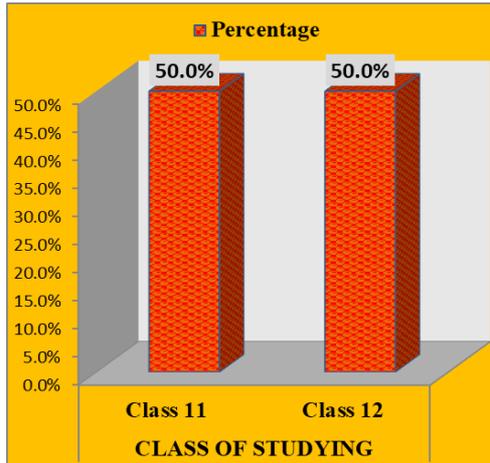


Fig 4: reveals 50% students were in class 11 and 50% were in class 12.

4. Percentage distributions of school students as per exposure to any incident.

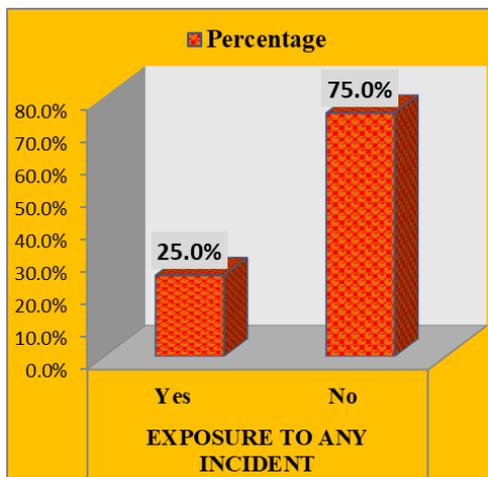


Fig 5: reveals exposure to any incident, 25.0% students had previous exposure to first aid incidents around them, whereas 45 students (75.0%) had no previous exposure to any incident.

5. Percentage distributions of school students as per source of information.

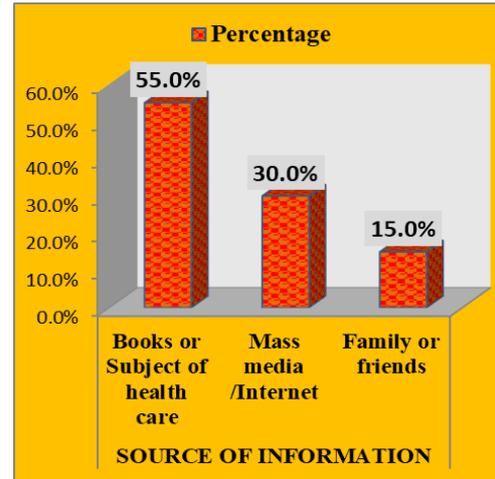


Fig 6: reveals source of information, 55.0% students had source of information on first aid management from books or subject of health care, 30.0% students had information on first aid management from mass media or internet, and 15.0% students had information from family or friends.

Section B: Assessment of pre-test and post-test knowledge score among school students.

Table 2: Depicts the Frequency and percentage distribution of Pretest level of knowledge regarding first aid management of selected minor injuries among school students.

Level Of Knowledge		Pre-Test	
Frequency (n)		Percentage (%)	
Inadequate (0-10)	9	15%	
Moderate (11-20)	49	81.7%	
Adequate (21-30)	2	3.3%	

(N=60)

Table 2 reveals that 9 school students (15%) had inadequate knowledge, 49 school students (81.7%) had moderate knowledge, 2 school students (3.3%) have adequate knowledge.

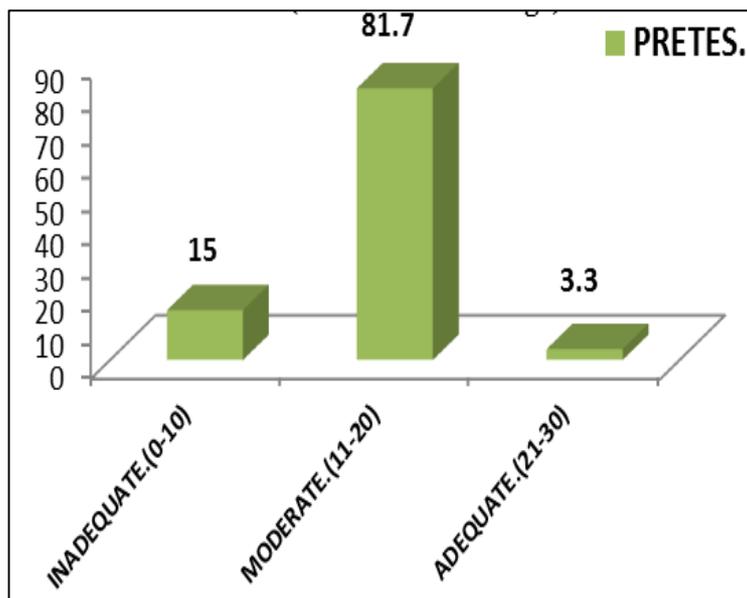


Fig 7: Measure of (Pre-test knowledge) score 81.7

Pre-Test Knowledge Score

The figure 6 depicts that 9 school students (15%) had inadequate knowledge, 49 school students (81.7%) had moderate knowledge, and 2 school students (3.3%) had adequate knowledge.

Table 3: Depicts the Frequency and percentage distribution of post-test level of knowledge among school students.

(N=60)

Level of Knowledge	Post-Test Frequency Percentage	
	(%)	(n)
Inadequate (0-10)	0	0%
Moderate (11-20)	18	30%
Adequate (21-30)	42	70%

Table 3 reveals that none of the students had inadequate knowledge, 18 school students (30%) had moderate knowledge, and 42 school students (70%) had adequate knowledge.

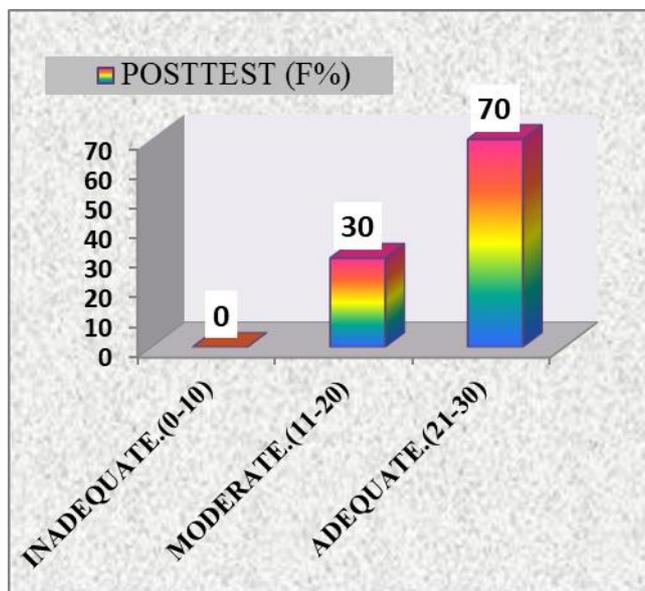


Fig 8. Measure of (Post-test Knowledge) Score

Post Test Knowledge Score

Figure 7 reveals that none of the students had inadequate knowledge, 18 school students (30%) had moderate knowledge, 42 school students (70%) had adequate knowledge have good knowledge regarding first aid management of selected minor injuries.

Section C: Comparison of the pre-test and post-test knowledge score to test hypothesis and assess the effectiveness of SIM.

Table 4: Depicts Comparison of Pre-test and Post test Scores to test hypothesis and assess the effectiveness of SIM.

N=60

Paired t Test	Mean ±S. D	Mean %	Paired t Test	P value	Table Value At 0.05
Pre- Test Score	14.82±3.16	49.3	22.59*	<0.001	2.00
Post- Test Score	21.77±3.23	72.5			

** Significance Level 0.05

Table 4 shows that, the mean pre-test knowledge score was 14.82, standard deviation was 3.16, and the mean post-test knowledge score was 21.77, standard deviation was 3.23. The mean% of pre-test score was 49.3, and of post test score it was 72.5. The obtained mean difference (6.950) between the pre-test and post test knowledge scores of experimental group was found to be statistically significant as evident from the “t” value 22.598* Sig at 0.05 level. Therefore, the obtained mean difference was true difference and not by chance. Hence, the null hypothesis (H0) was rejected and the research hypothesis (H1) was accepted. This shows that the self-instructional module on first aid management of selected minor injuries was effective in enhancing the knowledge of school students regarding first aid management of selected minor injuries.

Discussion

This chapter concentrates on the findings derived from the statistical analysis. First aid begins with action, which in itself has a calming effect. If there are multiple injuries or if several persons are hurt, priorities must be set. The first-aid in charge should enlist the help of bystanders to make telephone calls, to direct traffic, to keep others at a distance if necessary, to position safety flares in case of highway accidents, and so on. First aid training is of particular importance in case of catastrophe, when medical and hospital services are limited or delayed. So to increase the knowledge of the school students this study was carried out. The objectives of the study were: The first objective was to assess the knowledge regarding first aid management of selected minor injuries among Govt. senior secondary school students. In relation to knowledge scores, in pre-test knowledge score 9 school students (15%) had inadequate knowledge, 49 school students (81.7%) had moderate knowledge, 2 school students (3.3%) had adequate knowledge. The second objective was to develop and administer SIM (self-instructional module) on first aid management of selected minor injuries among Govt. senior secondary school students. After administration of SIM, the analysis of overall knowledge of subjects during post test reveals that in post-test knowledge score none of student had inadequate knowledge, 18 school students (30%) had moderate knowledge, 42 school students (70%) had adequate knowledge regarding first aid management of selected minor injuries. Third objective was to compare pre-test and post- test knowledge scores on first aid management of selected minor injuries among Govt. senior secondary school students. The present study shows that mean post test knowledge scores (21.77) of the school students was higher than their mean pre test scores (14.82). The obtained mean difference (6.950) between the pre-test and post test knowledge scores of experimental group was found to be statistically significant as evident from the “t” value 22.598 *Sig at 0.05 level. Therefore, the obtained mean difference was true difference and not by chance. Stating the null hypothesis (H₀) was rejected and the research hypothesis (H₁) was accepted. The fourth objective was to find out the association between post- test knowledge score on first aid management of selected minor injuries with their socio demographic variables. In analysis the Chi-square value shows that there is significance association between the score level and demographic variables (source of information) as the calculated chi-square value was more i.e.

(9.110) and the tabulated value was (5.991). The findings of the study was supported by Sofiya Mohan and Chandrakala (2015) who conducted a quasi-experimental study on effectiveness of video assisted teaching on first aid for minor injuries among national cadet corps students in a selected school, Secunderabad, Telangana. The sample for the study comprised of 50 NCC students selected using simple random sampling. The data was collected in, 2015, by using structured knowledge questionnaire. The data was analyzed using descriptive and inferential statistics. The study findings revealed that the difference between pre-test and post-test level of knowledge was found through paired 't' test, it revealed that calculated value 15.76 was higher than tabulated 't' value 2.02, it shows that VAT (video assisted teaching) was found to be effective at 0.05 level as there was significant increase in the level of knowledge on post-test. The association between knowledge and religion, education of mother, education of father, occupation of mother, were significantly associated at $p < 0.05$ level, however variables such as age, gender, occupation of father, monthly income, were not found to be significant. In this present study also SIM (Self-instructional module) was found to be effective in increasing the knowledge of the school students on first aid management of selected minor injuries.

Conclusion

This study assessed the level knowledge of school students regarding first aid management of selected injuries. The school students had inadequate knowledge regarding first aid management of selected minor injuries prior to administration of self-instructional module. After reading Self-Instructional Module, there was a significant improvement in school student's level of knowledge regarding first aid management of selected minor injuries. The study concluded that the Self -instructional module was effective in improving the knowledge regarding first aid management of selected injuries among Govt. senior secondary school students, Bhattakuffar, Shimla Himachal Pradesh.

Limitations

1. Assessment of knowledge on first aid management of selected minor injuries was limited to written response as elicited by structured questionnaire.
2. The students were selected from Govt. Sen. Sec. School, Bhattakuffar, Shimla, Himachal Pradesh, only

Recommendations

On the basis of the study findings, the following recommendations were made;

1. A Quasi experimental study can be conducted between students of different schools to evaluate the effectiveness of self- instructional module on knowledge regarding first aid management of selected minor injuries.
2. A similar study can be conducted among community population regarding first aid management of selected injuries.
3. Comparative study can be done on urban and rural school children regarding knowledge, attitude and practice on first aid management of selected injuries.
4. A similar study can also be conducted among school teachers to assess their level of knowledge on first aid

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