

Effect of Training Program Regarding First-Aid Management among the High-School Students

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Abstract

Introduction	For life time exposure the average person in a developed country have 1 percent risk of death and 30 percent risk of injury. In world's road daily 1,40,000 people injured, 3,000 die and some 15,000 disabled for life. The cost of treatment and the complications after trauma can be decreased, if first-aid support is given and patient is transferred for the treatment in proper place as early as possible.
Objectives	The objectives of this study was to train the high school students regarding first-aid management of common problems requiring first-aid and evaluate the effectiveness of the programme.
Methods	It was quasi-experimental single group, pre-test post-test research design, conducted among all the students studying in class 9 and 10 in the selected high schools i.e. Harinagra, Kaptangunj and Amahibelha of Sunsari district. It was census study and 696 students were selected. Maintaining validity and reliability of the tool, pre-test survey was conducted. After pre-test training program, first-aid training was conducted for two days and post-test was taken after two weeks. An information booklet was distributed to all. The collected data were analyzed.
Results	Out of 696 subjects 60.5 percent were male and 39.5 percent were female. The mean age of students was 15.51 yrs. (range 12-20 yrs). It was found that the training program conducted was very effective. The application of Mc Nemar's chi square test (P=0.0001) is highly significant in all the situations except the management of unconscious patient (P=0.2148). Majority of the subjects (87.2%) reported that the training programme conducted was very useful and 12.8 percent reported useful.
Conclusions	Finally, it was concluded that training program was highly effective and it could be implemented for all high school students. It will be beneficial if some important topics of first-aid included in curriculum of high school course.
Key words	First-aid, Training, High school, Students

Introduction

Every day as many as 1,40,000 people are injured on the world's roads. More than 3,000 die and some 15,000 are disabled for life. Each of those people has a network of family, friends, neighbors, colleagues or classmates; they are also affected, emotionally and otherwise. Families struggle with poverty when they lose a breadwinner, or have the added expense of caring for disabled family members¹.

The victims of trauma and injury are increasing day by day. The cost of treatment and the complications after trauma can be decreased, if first-aid support is given and patient is transferred of the treatment in proper

place as early as possible. This can reduce the rate of disability also to a great extent. In Nepal the victims are left alone for themselves and their family members. In order to reduce the problem, the public needs to be aware and helpful in such conditions. The students are the basic forces of the county. If the students are equipped with the knowledge and skill they can help victims, motivate family members and educate other peer groups.

This training programme, was beneficial because: trauma and accidents increasing day by day as vehicle and modernization increasing. The area selected is far

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away from the city, town or hospital, hence aid in life saving and preventing complications. As they are high school students, they will act as trainer at their own home and at their own villages. The students can manage first aid of common problems at their own setting and equip them with first aid materials in-group so that it will increase more concern and interest. It also trains the concerned teacher, as these all school is government and most of the students are from villages.

The objectives of this study was to train the high school students regarding first-aid management of common problems requiring first-aid and evaluate the effectiveness of the training programme.

Methods

It was education intervention single group, pre-test post-test research design. All the students studying in class-IX and X in the selected high-schools constituted the population of the study. It was census study. Total 696 students were included using census method in the study.

The content validity of the tool was maintained by checking the tool from the experts in the field of emergency, family medicine, forensic medicine and nursing. The tool prepared was tested among the 75 high school students of Dharan. The reliability of the tool was established by split half method and found reliable, and then the tool was finalized.

The information booklet on first-aid was prepared, in Nepali, on selected topics of common health problems/situations requiring first-aid at local community level. The booklet was prepared consulting various available first-aid books, consulting the experts of emergency and trauma management and the available booklet or materials of American society of preventive medicine. The content validity of the booklet was checked from the concerned doctors and nurses.

Using pre- tested questionnaire the baseline knowledge of the students was assessed before execution of first aid training program. After the pre - test the concerned trainer introduced the first - aid training program, using

prepared module (information booklet) in their own class-room. A continuous two days training program was provided to the students in their own classroom. A booklet was given to each student for his or her reference and future use.

A first - aid kit box was also given in each school with required supplies after the demonstration in the training. After two weeks of pre-test the post - test was taken using the same questionnaire. The collected data was analyzed. Excel software program was used to entry the data, SPSS-4 programs were used for statistical analysis. Descriptive statistics like mean, percentages, SD etc are used to describe the variables.

The entire study was conducted under the guidance and supervision of principle investigator and co-Investigators. First-aid training provided by a group of trained doctors and nurses under the direct supervision of investigators in co-ordination with the physical-health teacher, student representatives from each class of 9 & 10. A co-ordination team was formed of five members i.e. two students, headmaster, health/science teacher, and Programme co-coordinator to coordinate the activities. Follow up and supervision was provided periodically till eight weeks and necessary guidance help was provided.

Besides the schedule programme, a lot of resource materials were prepared and collected from various reliable sources especially in pictorial along with the description. This material were pasted in the walls and notice board in library room, science laboratory room, class-rooms and other common places, so that every students and teachers can read and get benefited easily. Common public attending these places can be also benefited. A lot of pictorial on human anatomy and first aid management were also pasted on the same places.

Results

The total number of the students participants were 696, in which 236 were from Harinagra MV, 284 from Kaptangunj MV, and 176 from Amahibelha MV of Sunsari district. The mean age of students were 15.51 yrs (Range: 12-20 yrs.), and 60.5 percent were male and 39.5 percent female.

Table 1: School-wise distribution of the participants

N=696

S.N.	Item/Particular	No	(%)
1.	School wise distribution of the Subjects:		
	Harinagra MV	236	(33.91)
	Kaptangunj MV	284	(40.81)
	Amahibelha MV	176	(25.28)
	Age group (In years)		
	12-14 yrs	185	(26.6)
	14-16 yrs	342	(49.1)
	16-18 yrs	155	(22.3)
	18-20 yrs	14	(2.0)
2.	Mean	15.51	
	SD	1.41	
	Range	12-20	
3.	Gender-wise distribution		
	Male	421	(60.5)
	Female	275	(39.5)

Effectiveness of the training programme

In the pre-test 30.4 percent reported that they were fully capable of performing first aid, where as in post-test 55.2 percent were fully capable i.e. knowledge incensement is 24.8 percent.

Table 2: Differences in capabilities of students regarding first-aid management, before and after education intervention (In average)

SN	Capabilities	Pre-test (Percentage)	Post-test (Percentage)	Differences (Percentage)
1	Fully Capable	30.4	55.2	+24.8
2	All right (OK)	43.0	37.8	-5.2
3	Only few (Some extent)	25.9	6.8	-19.1
4	Not capable at all	0.6	0.3	-0.3

Differences in knowledge regarding first-aid management of various problems/situations after education intervention

There is markedly increase in the knowledge regarding first-aid management of individual problems 8.8 percent to 55 percent after education intervention. The least Knowledge incensement is on the management of

diarrhea i.e. 8.8 percent, where maximum incensement in knowledge is in the cut injury i.e. 55 percent. There is also incensement in knowledge in each school and in each class also.

Table 3: Differences in capabilities of performing first-aid in various accidents/conditions among the students before and after educational intervention as per their responses (In aggregate)

Situations/ Conditions	Fully Capable			All Right (Average)			Not Capable at all		
	Pre- test	Post- test	Differences	Pre- test	Post- -test	Differences	Pre- test	Post- test	Diffe rences
	%	%	%	%	%	%	%	%	%
Fracture	15.4	62.8	+47.4	58.7	35.6	-37.8	25.9	1.6	-24.3
Burn	23.0	63.4	+40.4	56.1	35.9	-20.2	20.9	0.7	-20.2
Poisoning	18.3	58.3	+40.0	53.6	39.7	-13.9	28.1	2.0	-26.1
Cut injury /bleeding	25.1	63.2	+38.1	54.6	36.6	-18.0	20.3	0.1	-20.2
Epistaxis	21.2	62.4	+41.2	54.9	36.8	-18.1	23.9	0.9	-23.0
Drowning	21.3	61.9	+40.6	52.9	36.6	-16.3	25.8	1.4	-24.4
Diarrhea/ Vomiting	20.1	63.2	+43.1	55.2	35.9	-19.3	24.6	0.9	-23.7
Fever	16.4	61.8	+45.4	56.7	36.9	-19.8	27.0	1.3	-25.7
F.B. in Eye /ENT	11.6	60.8	+49.2	59.4	38.2	-21.2	29.0	1.0	-28.0
Chocking	8.4	58.6	+50.2	59.7	40.7	-19.0	31.9	0.7	-31.2
Snake bite	9.4	59.2	+49.8	62.5	40.2	-22.3	28.1	0.6	-27.5
Shock	9.4	59.5	+50.1	60.3	39.9	-20.4	30.3	0.6	-29.7

Table 4: Differences in the knowledge among the students regarding first-aid management

Conditions	YY	YN	NY	NN	Mc Nemar's Chi square	P. Value
Fracture	245	40	336	69	233.02	0.0001
Burn	216	27	405	48	330.75	0.0001
Poisoning	204	50	355	87	229.69	0.0001
Cut Injury	161	31	410	94	325.72	0.0001
Epistaxis	221	51	345	79	218.27	0.0001
Drowning	475	56	152	13	44.31	0.0001
Diarrhoea	526	52	112	6	21.95	0.0001
F.B. Eye	73	187	105	331	23.03	0.0001
F.B. Stomach	74	193	107	322	24.65	0.0001
Snake bite	85	42	396	173	286.11	0.0001
Shock	41	140	120	395	1.54	0.2148
Dog bite	106	106	234	250	48.19	0.0001
CPR	316	65	264	51	120.37	0.0001

P < 0.001

YY = before correct, after correct.

YN = before correct, after wrong.

NY = before wrong, after correct.

NN = before wrong, after wrong.

Exposed = correct.

Unexposed = in correct.

Case = before.

Control = after.

Usefulness of the training program

As 87.2 percent students reported that the training program is very useful, 12.8 percent useful and none of them reported not useful. This finding clearly illustrates the effectiveness of the training programme.

Evaluation of the training program

The students replied that the heading / topics covered were adequate (64.2%), contents taught is adequate (75.1%), teaching learning methods were good (73.7%), time allotted was adequate (69.1%) and overall management is good (78.2%). These findings clearly show that the training program conducted was well planned and effective.

Discussion

Differences in the knowledge among the students regarding first-aid management

It was seen that regarding the first-aid management of fracture, 245 students given the correct response both before and after training interventions, where as 40 students given correct response before and incorrect response in post test, similarly, 336 students given the incorrect (wrong) response in pre-test but correct response in post-test; and 69 students given incorrect response in both pretest and post-test. The application of MC Nemar's chi square test, value is 233.02 (P=0.0001), which is highly significant. It signifies that

the training programme conducted was highly effective. Similar findings were reported by Frederick⁴, Peterson⁵, Gagliardi⁷, Singh⁶, and Aly⁸.

Similarly, in the first-aid management of burn, poisoning, cut injury, epistaxis, drowning, diarrhoea/vomiting, F.B. in eye, coins in stomach, snake bite, dog bite, and CPR, there is significant enhancement in the knowledge (P= 0.0001). These findings clearly imply that the training program conducted was very effective. But in the first-aid management of unconscious patient in the road there is significant increase in the knowledge (P= 0.2148), but less in compare to the other situations.

Majority of the respondents i.e. 87.2 percent reported that the training programme is very useful, whereas 12.2 percent reported it useful and none of them reported not useful. Hence it clearly illustrates the effectiveness and usefulness of the programme. Regarding the contents covered, teaching learning methods used, time allocation, arrangement of the training. The majority of subjects mentioned in adequate or good (64.2-78.2) and negligible percentage (0.3-0.6) mentioned it inadequate or poor. These facts clearly demonstrate that the training was useful and applicable in daily life as well as in course learning process. The positive impact of the training was verbalized by the students along with the participated teachers and demand for continuity in future.

Conclusion

Hence, it concludes that the training programme conducted was highly effective and it must be continued in future in all high schools of Nepal.

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