https://doi-ds.org/doilink/07.2024-69884821/GIJNR

Glorious International Journal of Nursing Research
(An International Peer-Reviewed Refereed Journal)

ISSN: 2583-9713 www.gloriousjournal.com

A study to evaluate the effectiveness of a planned teaching programme among school children regarding first aid for common accidents and emergencies in a selected school at Mangaluru

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Article Information:

Type of Article: *Original Research Article* **Received On:** *11th July 2024*

Accepted On: 18th *July 2024* **Published On**: *24th July 2024*

Abstract:

Background: First aid is the provision of initial care for an illness or injury by a trained person who is not an expert, until professional medical treatment can be accessed. Aim of the study is to assess the knowledge in first aid for common accidents and emergencies among school children to build a safe and healthier community. **Methods:** A pre-experimental one-group pre-test post-test research design was employed to assess the knowledge of school children in Mangalore regarding first aid for common accidents and emergencies. Simple random convenience sampling technique was used to select fifty 8th grade school children studying in Lady hill English medium school, Mangaluru. A structured knowledge questionnaire was utilized to evaluate their understanding of common accidents and emergencies. **Results:** According to this study, the total mean percentage of the knowledge score in the pre-test assessment was 33.66%, with a mean score of 10.1 and a standard deviation of ±2.36. This increased to 80.33% in the post-test, with a mean score of 24.10 and a standard deviation of ±3.30. The overall effectiveness of the PTP was found to be 46.66%, with a mean score increase of 14 and a standard deviation of ±0.47. **Conclusion:** Health professionals, especially nurses,

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play a pivotal role in training school children in first aid, enabling them to develop the skills and confidence necessary to provide life-saving assistance and prevent complications during emergency situations.

Key words: Effectiveness, Planned Teaching Programme, First Aid, Accidents and Emergency, School Children.

Introduction:

Train up a child in the way he should go and when he is old, he will not depart from it.

(Proverbs-22:6)

In today's dynamic world, accidents and emergencies can occur unexpectedly, posing challenges that require immediate action. Children, despite being resilient, are not immune to accidents both at school and in their daily lives. Therefore, equipping them with basic first aid knowledge and skills is crucial not only for their own safety but also for fostering a culture of preparedness and community responsibility. First aid is the initial assistance or care given to a person who has suddenly fallen ill or sustained an injury before the arrival of professional medical help. Its primary objectives are to preserve life, prevent the condition from worsening, and promote recovery[1]. Injuries are very common these days and can occur at any time in our daily lives. Among them, injuries to school children are particularly prevalent[2].Unintentional injuries are among the ten leading causes of death in children below 15 years of age, accounting for about 20% of deaths worldwide in this age group.[3] Drowning is one of the leading causes of unintentional injury. In India, it is one of the top ten causes of death among children aged 5-14 years.[4]

Providing information and training on the proper management of injuries and illnesses to students is important for two reasons. First, it improves their health knowledge, which can ultimately lead to healthier and safer lives. Second, students can act as agents of change for their families and communities.[5] School health education is one of the components of the comprehensive school health program. It primarily involves the development, delivery, and evaluation of a structured instructional program and other student activities.[6] Children are the treasures of tomorrow’s world. The school health program in India emphasizes health education as a vital component. Children carry back health instructions to their parents from school, and as they grow into adults, they can apply this knowledge to benefit their own

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families. In developing countries like India, every child has the potential to become a health advocate and improve the overall health status of the country.[3]

Materials and methods:

The study utilized a pre-experimental one-group pre-test post-test research design, focusing on a sample of 50 students enrolled in the 8th standard from Ladyhill English medium school Mangaluru. The population under investigation included school children from Ladyhill English medium school Mangaluru.

For sampling, a convenience sampling technique was used to select the school, and a simple random sampling technique was employed to select the samples.

The data collection tool comprised two parts. Section A focused on the sociodemographic profile of the students, including gender, age, parents' education and occupation, family status, residence near a river or sea, type of housing, previous experience with first aid, and prior knowledge of first aid for accidents and emergencies. Section B consisted of a 30-item structured knowledge questionnaire on first aid for selected accidents and emergencies.

Permission to conduct the study was obtained from the Block Education Officer (BEO) of Mangalore and the Headmistress of Ladyhill English medium school Mangaluru. Students from the 8th standard were selected for the study. Following a detailed introduction by the researcher about the study's purpose, consent was obtained from the participants' parents. Data collection involved completing a structured questionnaire, which typically took 20-30 minutes.

Confidentiality of the collected data was ensured, and the data were coded for analysis. A master data sheet was prepared for the analysis process. The study aimed to assess the knowledge level of students regarding first aid.

Result:

Table 1: Frequency and Percentage distribution of sociodemographic data

n=50

Sl no	Sample characteristics	Frequency (f)	Percentage (%)
1	Gender		
a)	Male	41	82

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b)	Female	09	18
2	Age		
a)	13 years	45	90
b)	14 years	05	10
3	Father's educational status		
a)	Schooling		
(i)	Primary school	01	02
(ii)	Higher primary school	03	06
(iii)	High school	12	24
b)	Pe university	14	28
c)	Graduation	11	22
d)	Post graduation	09	18
4	Father's educational status		
a)	Schooling		
(i)	Primary school	02	04
(ii)	Higher primary school	03	06
(iii)	High school	13	26
b)	Pe university	12	24
c)	Graduation	13	26
d)	Post graduation	07	14
5.	Father's occupation		
a)	Daily wager	01	02
b)	Business	34	68
c)	Employee in medical field	00	00
d)	Employee in other fields	15	30
6.	Mother's occupation		
a)	House wife	38	76
b)	Daily wager	00	00
c)	Employee in medical field	03	06
d)	Employee in other fields	09	18
	Family status		
7	Nuclear family		
a)	Joint family	37	74
b)		13	26
8.	Place of residence		
a)	Rural	09	18
b)	Urban	41	82

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9.	Whether residing close to river/sea		
a)	Yes	18	36
b)	No	32	64
10.	Type of housing		
a)	Tiled house	16	32
b)	Molding/cement roof house	34	68
11.	Whether you have given first aid?		
a)	Yes	39	78
b)	No	11	22
12.	Do you have any prior information on first aid?		
a)	No	20	40
b)	Yes	30	60
	*if yes' the source of information is		
i	Television	08	16
ii	Magazines	06	12
iii	Books	20	40
iv	News paper	05	10
v	Internet	03	06
vi	Teacher/health personnel	13	26
vii	Any other	01	02

The data presented in Table 1 shows that, among the school children under study, most of them were males (41 or 82%) and 9 (18%) were females. The distribution of school children according to their age showed that the majority, 45 (90%), were 13 years old, and 5 (10%) were 14 years old. The family status of the school children revealed that 37 (74%) were from nuclear families and 13 (26%) were from joint families.

Among the 50 school children, 9 (18%) resided in rural areas, whereas 41 (82%) resided in urban areas. The majority of the school children under study, 32 (64%), resided away from rivers or seas, whereas 18 (36%) resided near rivers or seas. Additionally, 34 (68%) of the school children resided in cement roof houses, whereas 16 (32%) resided in tiled houses.

Regarding first aid experience, 39 (78%) of the school children had provided first aid before the study, while 11 (22%) had not. Among the 50 school children, 30 (60%) had prior information on first aid, while 20 (40%) did not have any prior information about first aid.

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Part II: Analysis of the pretest knowledge scores of the school children.

In order to find out the level of knowledge of the school children a three-point scale was used for categorizing them. Based on their scores, they were categorized as poor for scores between 0-10, average for scores between 11-20, and good for the schools between 21-30.

Table 2: categorization of school children Based on the level of knowledge regarding first aid for common accidents and emergencies.

n=50

Sl no	Level of knowledge	Number of respondents(f)	Percentage
1	Poor	29	58%
2	Average	21	42%
3	Good	-	-
	Total	50	100%

Maximum possible score =30

Data presented in table 2 shows that, out of 50 school children majority of them 29(58%) had poor knowledge and 21(42%) had average knowledge regarding first aid for common accidents and emergencies.

Table 3: Area wise mean, SD and Mean percentage of pretest and posttest knowledge scores

Sl no	Knowledge area	Max score	Pre test		Post test		Effectiveness	
			Mean± SD	Mean %	Mean ±SD	Mean %	Mean ±SD	Mean%
1	General first aid	6	2.20± 1.21	36.66	4.90± 1.19	81.66	2.7± 0.02	45
2	First aid for fracture	7	2.40± 1.12	34.28	5.50± 1.19	78.57	3.1± 0.07	44.39

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3	First aid for drowning	8	2.72± 1.40	34	6.66± 1.18	83.57	3.94± 0.22	49.57
4	First aid for scald injury	9	2.78±1. 13	30.88	7.04± 1.47	78.22	4.26± 0.16	47.34
	Total	30	10.10± 2.36	33.66	24.10± 3.30	80.33	14± 0.47	46.66

The data presented in table 3 shows that, the mean percentage of the knowledge score of school children with regard to the pretest knowledge assessment was 33.66% with mean and SD of 10.1±2.36, which had increased to 80.33% with mean and SD of 24.10±3.30 in the post test. This explains that there is an increase in the mean percentage of 46.66% with mean and SD 14±0.47 after the post test.

Table 4: Significance in difference between pretest and posttest knowledge scores of school children on first aid for common accidents and emergencies.

n=50

Sl.no	**Knowledge area**	**Mean effectiveness**	**'t' value**	**Table value at 0.5%**	**Level of significance**
1	General first aid	2.7±0.02	10.35	1.995	P<0.005
2	First aid for fracture	3.1±0.07	15.15	1.995	P<0.005
3	First aid for drowning	3.94±0.22	17.05	1.995	P<0.005
4	First aid for scald injury	4.26±0.16	19.44	1.995	P<0.005
Total		14±0.47	37.91*	1.995	P<0.005

=very highly significant

t (49) =1.9995 p<0.005

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finding revealed that, the mean posttest knowledge score of school children was significantly higher than the mean pre-test score. The calculated 't' value was greater than the table value at 0.5%. hence the null hypothesis was rejected and research hypothesis work accepted indicating that the gain in knowledge of school children was not by chance. therefore, it is concluded that the gain in knowledge of school children through planned teaching programme on first aid for common accidents and emergencies was highly significant.

d) Association between pretest knowledge scores of school children regarding first aid for common accidents and emergencies with the demographic variables.

Table 5: Association of demographic variables with pretest knowledge scores

n=50

Sl no	Demographic variables	Chi -square	df	p-value	Significance at 0.05 level
1	Gender	0.04	1	3.841	NS
2	Age	0.15	1	3.841	NS
3	Father's education status	1.29	2	5.991	NS
4	Mother's education status	0.71	2	5.991	NS
5	Father's occupation	1.13	1	3.841	NS
6	Mother's occupation	0	1	3.841	NS
7	Family status	0.09	1	3.841	NS
8	Place of residence	0.04	1	3.841	NS
9	Residence near sea/river	0.87	1	3.841	NS
10	Type of housing	1.12	1	3.841	NS
11	Whether given first aid?	0.07	1	3.841	NS
12	Prior information on first aid	1.97	1	3.841	NS

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NS=not significant

Table 5 shows that, the calculated chi-square value for all variables is less than the table value. Hence there is no significant association between pre test scores and demographic variables.

Discussion:

Analysis of the pretest knowledge scores of the school children revealed that, out of 50 school children majority of them 29(58%) had poor knowledge and 21(42%) had average knowledge regarding first aid for common accidents and emergencies.

This study is supported by a survey conducted in Haryana to ascertain the awareness of high school students about management of common illness and injuries. The data was collected from 76% students using structured knowledge questionnaire regarding the management of common illnesses and injuries. The findings of the study revealed that 80% of students scored more than 50% marks.[7]

According to this study the total mean percentage of the knowledge score with regard to the pretest knowledge assessment was 33.66% with mean and SD of 10.1±2.36, which had increased to 80.33% with mean and SD of 24.10±3.30 in the post test. The total mean percentage of effectiveness of the PTP was found to be 46.66% with mean and SD 14±0.47.

Area wise analysis revealed that the highest mean percentage of 49.57% was scored in the area of knowledge regarding first aid for drowning with mean and SD 3.94 ±0.22. the least mean percentage 30.88% was observed in the area for scald injuries with the mean and SD 2.78±1.31.

After completing PTP, there was a notable increase in the knowledge scores of students about first aid for common illness and accidents. The ‘t’ test showed that there was significant difference between the mean pretest and posttest knowledge scores of school children regarding first aid for common illness and emergencies with t=37.91, t_{49} =1.995 p<0.0005. the calculated t value was greater than the tabled value at 0.5%. hence the null hypothesis was rejected and research hypothesis was accepted.

Conclusion:

Assessment of the level of knowledge of school children regarding first aid for common accidents and emergencies shows that, out of 50 school children majority of them 29(58%) had poor knowledge and 21(42%) had average knowledge. Provision of first aid facilities during

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emergency situations help to sustain life and prevent complications. Training programmes in these areas will help the children to develop the ability and confidence to perform first aid. In this context a health professional especially nurses have a major role in training the school children.

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