Effectiveness Of Structured Teaching Program on Knowledge Regarding First Aid Measures of Common Childhood Emergencies Among Parents of Under-Five Children in Selected Rural Area, Maharashtra: A Pre-Experimental Study

Ms. Gayatri R. Barde[1], Dr. Mahendra Vishwakarma[2]
[1]*Ph.D. Research Scholar, Department of Nursing, Shri Jagdishprasad Jhabarmal Tibrewala University, Vidyanagari, Jhunjhunu, Rajasthan, India*
[2]*Professor cum Research Guide, Department of Nursing, Shri Jagdishprasad Jhabarmal Tibrewala University, Vidyanagari, Jhunjhunu, Rajasthan, India*

***Abstract*—Background: Childhood emergencies such as choking, burns, poisoning, falls, drowning and fever with convulsions occur most often at home, where parents are the first responders. Correct first aid in the first few minutes can prevent death and disability.**

Aim: To assess the effectiveness of a structured teaching program on knowledge regarding first aid measures of common childhood emergencies among parents of under-five children in selected rural area, Maharashtra.

Methodology: The design used for the study was a pre-experimental one group pre-test post-test design. The study was conducted in selected rural area of Maharashtra. The sample size of the study was 64 parents of under-five children. The sampling technique was non-probability convenient sampling technique.

Result: Data was collected by using a self-structured knowledge questionnaire. At the time of pre-test, 4.7% of parents had poor knowledge, 57.8% had average knowledge and 37.5% had good or very good knowledge. The average knowledge score at the time of pre-test was 11.42 with a standard deviation of 2.66. At the time of post-test, 14.1% of parents had good knowledge, 84.4% had very good knowledge and 1.6% had excellent knowledge. The average knowledge score at the time of post-test was 20.47 with a standard deviation of 2.09. The paired t value was 28.84 with p value <0.001.

Conclusion: The structured teaching program was effective in improving knowledge of parents, and the demographic variables source of information was associated with post-test knowledge score.

***Index Terms*—Structured Teaching Program, First Aid, Childhood Emergencies, Parents, Under-five Children**

I. INTRODUCTION

Childhood is a dynamic and formative period of human life characterized by rapid physical growth, neurological maturation, acquisition of new skills, and progressive development of social, emotional, cognitive, and behavioural capacities. During the early years of life, children gradually move from complete dependence on adults toward increasing independence. The first five years are particularly important because children develop mobility, communication, problem-solving abilities, and exploratory behaviours at a rapid rate. First aid refers to the immediate and appropriate assistance provided to a person who has been injured or suddenly becomes ill before definitive medical treatment is available. In the context of childhood emergencies, first aid is not intended to replace professional medical care. Rather, it aims to preserve life, prevent deterioration, reduce further harm, provide basic support, and facilitate timely transfer to an appropriate health facility. Research indicates that early recognition and intervention in childhood emergencies can significantly reduce morbidity and mortality rates. Therefore, it is imperative to educate parents, caregivers, and healthcare professionals about the signs and symptoms of these emergencies, as well as the appropriate responses. This study aims to explore the prevalence, causes, and management strategies of

common childhood emergencies, contributing to the body of knowledge that can enhance emergency preparedness and response in paediatric care.

1.1 Need for the study

The present study is based on the concept that knowledge is an important prerequisite for appropriate health-related action. Parents who have information about common emergencies, first-aid measures, danger signs, and referral requirements may be better prepared to respond than those who have limited knowledge. Education provides an opportunity to modify knowledge by presenting accurate information in an organized manner. The need for the present study arises from the continuing burden of childhood injuries, the particular vulnerability of under-five children, the central role of parents in early response, and evidence of gaps in parental first-aid knowledge. Indian studies show that falls and home-based injuries constitute an important proportion of childhood injuries. National government data demonstrate substantial numbers of fatal unintentional injuries, including a considerable burden in Maharashtra. Studies in Maharashtra have also identified gaps in parental knowledge and demonstrated that structured interventions can improve awareness.

1.2 Statement of the problem

A study to assess the effectiveness of structured teaching program on knowledge regarding first aid measures of common childhood emergencies among parents of under-five children in selected rural area, Maharashtra.

1.3 Objectives

- To assess the pre-test knowledge regarding first aid measures of common childhood emergencies among parents of under-five children in selected rural area.
- To assess the post-test knowledge regarding first aid measures of common childhood emergencies among parents of under-five children in selected rural area.
- To evaluate the effectiveness of structured teaching program on knowledge regarding first aid measures of common childhood emergencies among parents of under-five children in selected rural area, Maharashtra.
- To associate the post-test knowledge score with selected demographic variables

1.4 Hypotheses

- H0: There is no significant difference between pre-test and post-test knowledge scores of parents regarding first aid measures of common childhood emergencies.
- H1: There is a significant difference between pre-test and post-test knowledge scores at 0.05 level of significance.
- H2: There is a significant association between post-test knowledge scores and selected demographic variables.

1.5 Operational Definitions

- Effectiveness: the gain in knowledge score of parents, measured by the difference between pre-test and post-test scores after the structured teaching program.
- Structured teaching program: a systematically planned teaching session on first aid of common childhood emergencies prepared by the investigator.
- Knowledge: the correct responses of parents to the self-structured questionnaire.
- Common childhood emergencies: choking, burns and scalds, poisoning, falls and head injury, drowning, bleeding, animal bites and fever with convulsions.
- Under-five children: children from birth up to five years of age.

II. RESEARCH METHODOLOGY

The present study was accepted by the institutional ethical committee. A quantitative research approach was used. The research design was a pre-experimental one group pre-test post-test design (Table A). The study was conducted in selected rural areas of Maharashtra state, after obtaining permission from the concerned authority.

Table A: Schematic representation of research design

Pre-test (O1)	Intervention (X)	Post-test (O2)
Day 1: knowledge questionnaire on first aid of common childhood emergencies	Day 1: structured teaching program	Day 7: same knowledge questionnaire

Population and sample: The target population was parents of under-five children residing in rural Maharashtra. The accessible population was parents residing in selected rural areas. The sample size consists of 64 parents, selected by non-probability convenient sampling technique.

Variables: The dependent variable was knowledge of parents regarding first aid measures of common childhood emergencies. The independent variable was the structured teaching program. The demographic variables were age of parents (in years), education qualification, occupation, area of residence, religion, family income, type of family, dietary pattern, knowing about first aid measures of common childhood emergencies, and source of information.

Inclusion criteria:

- parents who can read and write Marathi, Hindi or English; parents having children under five years of age
- parents who are present at the time of data collection
- parents who have digital literacy and use a mobile phone
- parents who belong to rural area of Maharashtra state.

Exclusion criteria: parents who have undergone any kind of teaching or awareness program regarding first aid measures of common childhood emergencies.

Research tool description: The tool was divided into two sections. Section A: a semi-structured questionnaire to collect demographic data (10 items). Section B: a self-structured knowledge questionnaire of 30 multiple choice items on first aid of choking, burns and scalds, poisoning, falls and head injury, drowning, bleeding, animal bites, fever with convulsions, and danger signs. Each correct answer carried one mark and the incorrect answer zero. The total score was divided into five groups: poor (0-6), average (7-12), good (13-18), very good (19-24) and excellent (25-30).

Validity and reliability: The tool was given to 7 experts in child health nursing, paediatrics and emergency care for content validity, and suggestions were incorporated. The reliability of the tool was determined by administering the questionnaire to 6 parents who were not part of the main study. The Karl Pearson correlation coefficient formula was used for reliability. The questionnaire was said to be reliable if the correlation coefficient was more than 0.8. The correlation coefficient ‘r’ of the questionnaire was r = 0.87, hence the questionnaire was found to be reliable and valid.

Pilot study: A pilot study was conducted on 6 parents. The collected data was coded, tabulated and analysed by descriptive and inferential statistics. The pilot study was feasible in terms of time, money and resources.

Structured teaching program: The program was prepared after review of literature and expert opinion. It contained the introduction to childhood emergencies and role of first aid; choking and foreign body aspiration; burns and scalds; poisoning; falls and head injury; drowning; bleeding and animal bites; fever with convulsions; danger signs and when to take the child to hospital; and emergency helpline numbers 108 / 112. It was delivered by lecture cum discussion with charts and flip book in 40 minutes.

Data collection procedure: For the main study, permission from the concerned authority was taken before conducting the study. The purpose of the study was explained, informed consent was taken from parents who wanted to take part, and confidentiality of the responses was assured. The pre-test was taken using the knowledge questionnaire, followed by the structured teaching program on the same day. The post-test was taken after 7 days using the same questionnaire. The tool was completed in the presence of the investigator to avoid contamination and bias in the collection of data.

Plan for data analysis: Descriptive statistics (frequency, percentage, mean and standard deviation) were used for demographic data and knowledge scores. The paired t test was used to compare pre-test and post-test scores, and the chi-square test (or Fisher exact test where expected counts were small) was used to find association of post-test knowledge with demographic variables at 5% level of significance.

III. RESULT

Table 1: Frequency & percentage distribution of parents of under-five children at selected rural area in terms of frequency and percentage

Sr. No.	Variable	Groups	Frequency	Percentage
1	Age of parents (in years)	20-25	8	12.50
		26-30	35	54.69
		31-35	15	23.44
		Above 35	6	9.38
2	Education qualification	No formal education	4	6.25
		Primary education	8	12.50
		Secondary education	17	26.56
		Higher secondary	24	37.50
		Graduate and above	11	17.19
3	Occupation	Homemaker	30	46.88
		Farmer / agricultural labourer	17	26.56
		Private service / business	10	15.63
		Government service	7	10.94
4	Area of residence	Rural	64	100.00
5	Religion	Hindu	41	64.06
		Muslim	5	7.81
		Buddhist	14	21.88
		Christian / Other	4	6.25
6	Monthly family income (Rs.)	Less than 10,000	16	25.00
		10,001-20,000	27	42.19
		20,001-30,000	14	21.88
		Above 30,000	7	10.94
7	Type of family	Nuclear	35	54.69
		Joint	24	37.50
		Extended	5	7.81
8	Dietary pattern	Vegetarian	26	40.63
		Non-vegetarian	19	29.69
		Mixed	19	29.69
9	Knows about first aid measures of common childhood emergencies	Yes	20	31.25
		No	44	68.75
10	Source of information	Health personnel	8	12.50
		Mass media / internet	15	23.44
		Family / friends	23	35.94
		No source of information	18	28.13

Deals with analysis of demographic data of parents of under-five children at the selected area in terms of frequency and percentage. (N = 64)

Above table depicts that, according to age of parents, in the study 54.7% were from the age group of 26-30 years. According to education, 26.6% had secondary education, 37.5% had higher secondary education and 17.2% were graduates. According to occupation, 46.9% were homemakers. All parents were from rural area. According to religion, 64.1% were Hindu and 21.9% were Buddhist. According to monthly family income, 42.2% were from the income group of Rs. 10,001-20,000. According to type of family, 54.7% belonged to nuclear family. According to dietary pattern, 29.7% followed mixed diet. According to knowing about first aid measures, 31.3% said yes and 68.8% said no. According to source of information, 23.4% had mass media / internet as the source.

Table 2: General assessment of Knowledge – Pre-Test

Pre-Test	Groups	Frequency	Percentage
	Poor (0-6)	3	4.7
	Average (7-12)	37	57.8
	Good (13-18)	23	35.9
	Very good (19-24)	1	1.6

	Excellent (25-30)	0	0.0
Knowledge	Minimum	6	
	Maximum	19	
	Average (SD)	11.42 (2.66)	

Deals with analysis of data related to assessment of the knowledge of parents regarding first aid measures of common childhood emergencies in terms of frequency and percentage.

For the assessment purpose the total score of knowledge was divided into five groups like poor (0-6 score), average (7-12 score), good (13-18 score), very good (19-24) and excellent (25-30). At the time of pre-test, 4.7% of parents had poor knowledge, 57.8% had average knowledge, 35.9% had good knowledge and 1.6% had very good knowledge regarding first aid measures of common childhood emergencies; no one had excellent knowledge. The average knowledge score at the time of pre-test was 11.42 with standard deviation of 2.66.

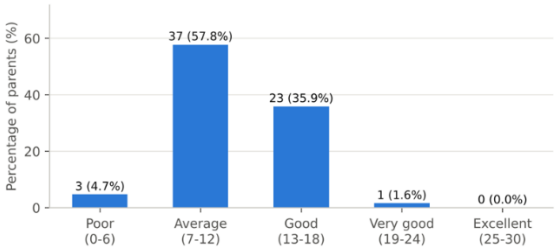


Figure No-1.1: General assessment of pre-test knowledge

Table 3: General assessment of Knowledge – Post-Test

Post-Test	Groups	Frequency	Percentage
	Poor (0-6)	0	0.0
	Average (7-12)	0	0.0
	Good (13-18)	9	14.1
	Very good (19-24)	54	84.4
	Excellent (25-30)	1	1.6
Knowledge	Minimum	13	
	Maximum	26	
	Average (SD)	20.47 (2.09)	

At the time of post-test, 14.1% of parents had good knowledge, 84.4% had very good knowledge and 1.6% had excellent knowledge; no one had poor or average knowledge regarding first aid measures of common childhood emergencies. The average knowledge score at the time of post-test was 20.47 with standard deviation of 2.09.

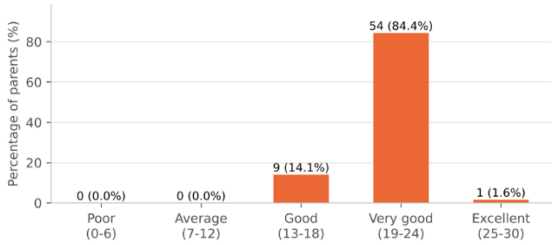


Figure No-1.2: General assessment of post-test knowledge

Table 4: Comparison of Pre-test and Post-Test Knowledge

Groups		Pre-Test		Post-Test	
		Frequency	Percentage	Frequency	Percentage
Poor	0-6	3	4.7	0	0.0
Average	7-12	37	57.8	0	0.0
Good	13-18	23	35.9	9	14.1
Very good	19-24	1	1.6	54	84.4
Excellent	25-30	0	0.0	1	1.6
Minimum		6		13	
Maximum		19		26	
Average (SD)		11.42 (2.66)		20.47 (2.09)	

Deals with comparison of the knowledge of parents regarding first aid measures of common childhood emergencies before and after the structured teaching program.

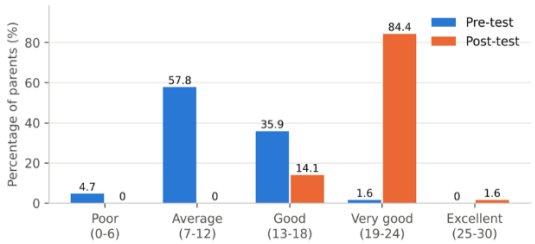


Figure No-1.3: General assessment of pre and post-test knowledge

Table 5: Comparison of pre and post-test Knowledge regarding first aid measures of common childhood emergencies among parents of under-five children

Test	N	Mean	S.D.	Mean difference	t value	P value
Pre-Test	64	11.42	2.66	9.05	28.84	<0.001
Post-Test	64	20.47	2.09			

The comparison of the pre-test and post-test means of the knowledge was done by the paired t test. The pre-test average score was 11.42 with standard deviation of 2.66. The post-test average score was 20.47 with standard deviation of 2.09. The mean gain in knowledge score was 9.05. The test statistic value of the paired t test was 28.84 with p value <0.001. The p value is less than 0.05, hence accept H1. It shows that the structured teaching program on knowledge regarding first aid measures of common childhood emergencies among parents of under-five children was effective.

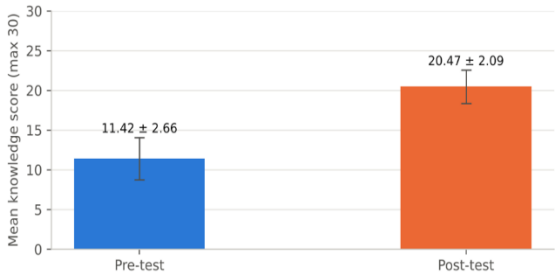


Figure No-1.4: Comparison of the mean pre and post-test Knowledge

Table 6: Association of Knowledge Score in relation to Demographic Variables

Variable	Groups	Post-Test Knowledge		Chi-Square	d.f.	p value	Significance
		≤ Median	> Median				
Age (in years)	20-30	30	13	0.02	1	0.891	Not significant
	Above 30	15	6				
Education qualification	Up to secondary	22	7	0.78	1	0.376	Not significant
	Higher secondary and above	23	12				
Occupation	Homemaker	19	11	1.32	1	0.251	Not significant
	Working	26	8				
Religion	Hindu	30	11	0.45	1	0.504	Not significant
	Others	15	8				
Monthly family income	Up to 20,000	27	16	3.55	1	0.059	Not significant
	Above 20,000	18	3				
Type of family	Nuclear	25	10	0.05	1	0.830	Not significant
	Joint / extended	20	9				
Dietary pattern	Vegetarian	20	6	0.92	1	0.338	Not significant
	Non-vegetarian / mixed	25	13				
Knows about first aid	Yes	12	8	1.48	1	0.223	Not significant
	No	33	11				
Source of information	Health personnel	3	5	†	1	0.044	Significant
	Other / none	42	14				

Deals with analysis of data related to the association of post-test knowledge regarding first aid measures of common childhood emergencies with selected demographic characteristics of parents. (area of residence not tested as all parents were rural; † Fisher exact test used)

The chi-square test was conducted to see the association of post-test knowledge regarding first aid measures of common childhood emergencies with selected demographic characteristics of parents at 5% level of significance (post-test scores were grouped at the median score of 21). † For source of information, some expected cell counts were below 5, hence the Fisher exact test was used. The p value of the association test with knowledge was less than 0.05 for the demographic variable source of information. It concludes that there was significant association of this demographic variable with knowledge. For the

demographic variables age, education, occupation, religion, monthly family income, type of family, dietary pattern and knowing about first aid measures, the p value was more than 0.05. It concludes that there was no significant association of these demographic variables with knowledge regarding first aid measures of common childhood emergencies among parents of under-five children at selected rural area.

IV. CONCLUSION

The structured teaching program was effective on knowledge regarding first aid measures of common childhood emergencies among parents of under-five children in selected rural area, Maharashtra. Parents are the first responders in a childhood emergency, and adequate knowledge of first aid plays an important role in saving the life of the child and preventing complications. In this study, there was a significant improvement in knowledge of parents after providing the structured teaching program, with the mean score rising from 11.42 to 20.47.

V. LIMITATIONS

The study used a one group design without a control group, a non-probability convenient sample from selected rural areas, and knowledge was measured only over a short interval. The findings cannot be generalised to all parents.

RECOMMENDATIONS

Similar teaching may be provided routinely to parents through anganwadis, immunization sessions, primary health centres and community health nursing activities. The study can be replicated with a larger sample, a control group, and with practice and retention of knowledge as outcomes.

REFERENCES

[1]. Peden M, Oyegbite K, Ozanne-Smith J, Hyder AA, Branche C, Rahman AKMF, et al., editors. World Report on Child Injury Prevention. Geneva: World Health Organization; 2008. ISBN: 978-92-4-156357-4.

[2]. World Health Organization. Preventable injuries kill 2000 children every day. News release, December 10, 2008.

[3]. Taskforce on Childhood Injuries, ICMR. Childhood injuries in India: An ICMR taskforce multisite study. Indian Pediatr. 2021; 58:517–524.

[4]. Community-based study of unintentional childhood injuries in villages and urban slums of Ujjain, India. [Publication details to be verified].

[5]. Unintentional injuries among children in Central India: A hospital-based cross-sectional study. Bioinformation. [Publication details to be verified].

[6]. Study of socio-demographic patterns and epidemiological correlates of unintentional injuries among 1–5-year children in Moradabad. Int J Community Med Public Health. [Publication details to be verified].

[7]. Household-level unintentional injuries among under-five children in Faridkot, India: An urban-rural comparison. [Publication details to be verified].

[8]. A study on epidemiology of unintentional childhood injury at one of the districts of Gujarat State: An Indian Council of Medical Research task force study. Indian J Community Med. 2022.

[9]. Parental non-compliance to childhood safety practices: A cross-sectional study. Indian J Med Res. [Publication details to be verified].

[10]. Effectiveness of video assisted teaching module on knowledge regarding first aid for selected home accidents among mothers of under five children in selected anganwadis of Shivrajpur, Kanpur. Zenodo; 2019.

[11]. Effectiveness of structured teaching programme on knowledge regarding first aid management of foreign body aspiration among parents of under five children in selected areas: A study protocol. Glob J Res Anal. doi:10.36106/gjra/5201069.

[12]. A pre-experimental study to assess the effectiveness of structured teaching program regarding knowledge about home management of selected common illnesses in pre-school children among mothers residing in rural area of Panipat. Int J Nurs Educ. [Publication details to be verified].

[13]. Sharma SK. Nursing Research and Statistics. 2nd ed. New Delhi: Elsevier India; 2014.

[14]. Effectiveness of structured teaching programme on knowledge regarding ICDS programme among mothers of under five children in a selected hospital. Inventi Rapid: Nursing Studies. [Publication details to be verified].
[15]. Effectiveness of structured teaching programme on knowledge regarding acute respiratory tract infections among mothers of under five children in selected rural area. Int J Community Med Public Health. [Publication details to be verified].
[16]. Profile of accidental injuries and poisoning in children and analysis of the predisposing factors. Int J Res Med Sci. [Publication details to be verified].