

“Effectiveness of Structured Teaching Programme on Knowledge Regarding First Aid for Burns and its Prevention in Children Among Mothers of Under-five Children”

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Abstract

Burn injuries are major cause for hospitalization, associated with significant morbidity and mortality, especially in children under the age of four years. A study was conducted to assess the knowledge and effectiveness of structured teaching programme among mothers of under-five children regarding first aid for burns and its prevention in children. Evaluative research approach was adopted, the research design used was pre-experimental (one group pretest, post-test design). The data was collected by structured interview schedule among 60 under five children mothers using structured knowledge questionnaire, the participants were selected by the non-probability purposive sampling technique. The pre-test mean score was 12.67 with the standard deviation of 3.56 and the post-test mean score was 25.33 with the standard deviation of 1.55. The difference in mean score was 12.66. The calculated paired ‘t’ value was 31.37 (in 59 degrees of freedom) which is ($P < 0.001$ level). Hence there was a significant difference between pre and post-test knowledge scores regarding first aid for burns and its prevention in children among mothers of under five children. There was no significant association found between pre-test level knowledge scores with their selected demographic variables. The findings of the study showed that structured teaching programme was effective.

Keywords: Structured Teaching Programme; First Aid; Burns; Prevention; Under Five Children Mothers.

Introduction

The child is the most precious possession of mankind, most loved and perfect in its innocence. Children to be cared and protected from environmental hazards. The suffering of children due to environmental hazards is the unintentional injuries children are at windows of vulnerability for accidents. Among children, toddlers are always at the doorstep of accidents or injuries¹.

Children are naturally curious. As soon as they are mobile, begin to explore their surroundings and play with new objects, at the same time though, they come into contact with objects that can cause severe injuries playing with fire or touching hot objects can result in burns. This is a debilitating condition accompanied by intense pain and long-term illness that creates suffering not only for the child but for the wider family and community².

Children are the future of every country and all societies strive to ensure their health and safety Since India's independence; continuous efforts have been made to improve the status of children. The large burden of communicable, infectious and nutritional disorders is gradually on the decline due to massive efforts and investments by successive Indian government, even though it is an unfinished agenda. Parallel to these changes, it is also becoming apparent that children saved from disease of yesterday are becoming victim of injury on road, at home and in public, recreational places³.

Burns are leading cause of death among toddlers, as children are easily burnt due to thinner skin and more composition of body fluids. Hot water scalds cause majority of burns.

A common reason for the scald of burns is that the parents do not test the temperature of water prior to placing in a bath tub and child plays in kitchen when parent is cooking and preparing food is itself dangerous condition. Spillage of hot liquids, grease and hot food is an unfortunate yet preventable cause of burns. The young child may also be exposed to the risks caused by electrical when introducing an object into electric plug (or) when playing with electric appliances and electric cords.⁴

Need for the study

According to the WHO global burden of disease estimates for 2004, just over 3, 10,000 people died as a result of fire-related burns, of which 30% were under the age of 20 years. Fire related burns are the 11th leading cause of death for children between the ages of less than 5 years. Overall children are at high risk for death from burns, with a global rate of 3.9 deaths per 1, 00,000 populations. Among all people globally, infants have the highest death rates from burns. Globally nearly 96,000 children under the age of 20 years were estimated to have been fatally injured as a result of a fire related burn in 2004³.

A retrospective study was conducted to study the incidence, severity, extent, cause, risk factors and overall mortality. 309 children of burn injuries treated over last 10 years in Kasturba Hospital, Manipal, and Karnataka, India. The study found that the children of less than 5 years were affected 76.1% and more than children age >5 years is 23.9%. Females were affected 74.1% and males are affected 25.9%. Most of the children received burn injuries in the range of 0-20percent. Body surface area 63.1 percent, electric burn 3. % scald 72.5 % followed by flame 22.7 % were most common cause of burn injuries. Overall paediatric burn mortality was 7.4 percent.⁶

In high income countries children under the age of 5 years old at the highest risk of hospitalization from burns. Nearly 75 % of burns in young children are from hot liquid, hot tap water or steam, contact burns from radiators or hot water pipes.

Nearly 75% of the population of India reside in rural areas like elsewhere in these areas also women are primary caregivers of their off spring and are usually the first to react in case of any injuries to their children.¹⁹ Children living in rural areas have significantly higher rates of hospitalization due to injuries than these living in urban areas.²⁰ The World Health Report on Violence & Injury prevention stated that, low socio-economic status is widely acknowledged risk factors for burns in both developing countries. Overcrowded living conditions, lack of proper safety measures & insufficient parental supervision of children are some of the factors can contribute in the occurrence of burns morbidity & mortality due to burn injuries are particularly having bearing on the socioeconomic status.⁷

Statement of the problem

“Effectiveness of Structured Teaching Programme on Knowledge Regarding First Aid for Burns and its Prevention in Children Among Mothers of Under-five Children”

Objectives

- To assess knowledge among mothers of under-five children regarding first aid for burns and its prevention in children before the structured teaching programme.
- To evaluate the effectiveness of the structured teaching programme (STP) regarding first aid for burns and its prevention in children among mothers of under-five children.
- To compare the pre-test and post-test knowledge scores among mothers of under-five children regarding first aid for burns and its prevention in children.
- To determine the association between knowledge among mothers of under-five children with their selected socio demographic variables.

Hypothesis

- H₁: There will be significant difference between the pretest and post-test level knowledge scores among mothers of under-five regarding first aid for burns and its prevention in children.
- H₂: There will be a significant association between pre-test level of knowledge scores of mothers with their selected socio-demographic variables.

Research Methodology

An evaluative research approach was considered appropriate for the study, pre-experimental (one group pretest and post-test) design was used. The tool developed and used for the data collection was structured knowledge questionnaire.

Tool consists of two sections;

Section-A: Demographic data which consists of 9 items.

Section-B: Structured knowledge interview on burns. The tool was validated by 10 experts for content validity, reliability and feasibility. The reliability of the tool was established by Spearman's brown split of method (reliability $r = 0.26$). The pretest was conducted by using structured knowledge questionnaire followed by implementation of structured teaching programme. After 7 days, the post test was conducted by using the same questionnaire for evaluating the effectiveness of structured teaching programme for same samples. The data was gathered, analysed and interpreted according to the objectives and hypothesis by using descriptive and inferential statistics and were presented in tabular form.

1.1 Sample:

The sample for present study comprised of mothers of under five children in rural areas of Kolar.

1.2 Sample size:

In this study the samples consisted of 60 Mothers of under five children between the age group of 20-40 years in a selected rural area.

1.3 Sampling Technique:

The non-probability purposive sampling technique is a strategy in which the researchers' knowledge of the population and its elements are used to select sample which are typical to the population. The non-probability purposive sampling technique, approach was found to be appropriate for the present study.

1.4 Setting of the study:

The investigator selected Arabikothnoor village., Kolar.

1.5 Criteria for Sample Selection

The samples were selected with following predetermined criteria.

Inclusion Criteria:

1. Mothers who are having under-five children [0-5 years].
2. Mothers who can able to understand Kannada & English
3. Mothers who are willing to participate.

Exclusion Criteria

1. Mothers who are not available at the time of data collection.
2. Mothers who are not willing to participate in the study.

1.6 Sample Size Estimation:

The sample size is an important feature of any empirical study in which the goal is to make inferences about a population from a sample. The sample selected Mothers of under-five children from rural area of Kolar.

- The total number of Mothers of under-five children were first selected was 70 .
 - Based on the Slovan's formula in determine the sample size.
 - The sample size of the present study is approximately calculated as 60.
- The calculation done as follows.

Let 'N' be the population size and the margin of error 'e' denotes the allowed probability of committing an error in selecting a sample representative of the population.

The sample size = n can be obtained by the formula The formula is $n = \frac{n}{1 + Ne^2}$

n = Sample size, N = Population, e = Margin of error

$$= 70 / (1 + (70 \times (0.05)^2))$$

At 5% level i.e., 0.05

$$= 70 / (1 + (70 \times 0.0025))$$

$$70 / (1 + 0.175)$$

$$= 70 / 1.175$$

$$59.574 \approx 60 \text{ approximately.}$$

A. Description of Data Collection Instrument:

A socio demographic data, knowledge questionnaire on first aid for burns and its prevention among mothers of under-five children was constructed by the investigator which contains items in the following aspects.

Section – A: Socio- demographic data consist of eight items such as age in year, type of family, religion, educational status, occupation, monthly income, family source of information, number of under-five children.

Section – B: The knowledge questionnaire on first aid for burns and its prevention among mothers of under-five children consists of thirty items which includes basic of burns and its classification, causes and signs and symptoms, factors determining the severity of burns, prevention of burns.

Scoring:

Each right answer contains one mark, and the wrong answer contains zero marks.

The maximum mark is thirty and the minimum mark is zero.

The scores were distributed as follows.

Inadequate = Scores $\leq 50\%$

Moderate = Scores 51% to 75%

Adequate = Scores $> 75\%$.

B. Statistical Analysis:

Section I: Frequency and percentage distribution based on the socio demographic variables.

Section II: Assess the pre-test knowledge regarding first aid for burns and its prevention among mothers of under-five children in selected rural area at Kolar district.

Section III: Assess the post-test knowledge regarding first aid for burns and its prevention among mothers of under-five children in selected rural area at Kolar district.

Section IV: Find the effectiveness of structured teaching program on knowledge regarding first aid for burns and its prevention among mothers of under-five children in selected rural area at Kolar district.

Ethical Consideration:

Ethical consideration was done by taking prior permission from the district health officer, Kolar and from the participants before conducting the pilot study. No ethical issues raised during the study.

Results

The results of the study were as follows.

Table 1: Frequency and percentage distribution of under- five children's mothers according to their sociodemographic variables

(N=60)

S. No.	Demographic Variables	Frequency	Percentage
Age of mother in Years			
1	20-25	29	48.4
	26-30	16	26.6
	31-35	12	20
	36-40	3	5
Age of Child in Years			
2	1-2	2	3.4
	2-3	20	33.3
	3-4	20	33.3
	4-5	18	30
Number of Children in the family			
3	One	34	56.6
	Two	24	40
	Three	2	3.4
	Four	-	-
Religion			
4	Hindu	46	76.7
	Muslim	5	8.3
	Christian	9	15
	Others	-	-
Educational Status			
5	No formal Education	24	40
	Primary Education	12	20
	Higher Secondary Education	17	28.4
	Graduate and above	7	11.6
Occupation			
6	Home maker	38	63.4
	Private employee	13	21.6
	Govt Employee	2	3.4

	Coolie	7	11.6
Family Income per Month			
7	< Rs.5000	7	11.6
	Rs.5001-10000	24	40
	Rs.10001-15000	24	40
	> Rs.15000	5	8.4
Type of Family			
8	Nuclear	43	71.7
	Joint	16	26.7
	Single Parent	-	-
	Extended	1	1.6
Source of Information			
9	Family and Friends	5	8.3
	Health Personal	13	21.7
	Print Media	-	-
	No Source of Information	42	70

Table 2: Categorization of knowledge scores of Under-five children's mothers in terms of frequency and percentage distribution
(N=60)

S. No	Knowledge Levels	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
1	Inadequate	39	65	-	-
2	Moderate	19	31.6	4	7
3	Adequate	2	3.4	56	93

Table 3: Mean, standard deviation and paired 't' value of pre-test and post-test knowledge scores regarding first aid for burns and its prevention among mothers of under five children (N = 60).

S. No	Test	Mean	Mean %	Mean Difference	Standard deviation	Paired 't' value
1	Pre-test	12.67	42.23%	12.66	3.56	31.37
2	Post-test	25.33	84.43%		1.55	

Table 4: Findings related to association between pre-test level of knowledge scores regarding First aid for burns and its prevention among mothers of under five children, with their selected demographic variables. (N = 60)

S. No.	Demographic Variables	Scores			Chi-square value
		Inadequate	Moderate	Adequate	
Age of mother in Years					

1	20-25	28	1	0	$\chi^2=1.087$
	26-30	16	0	0	df=3
	31-35	12	0	0	P > 0.05
	36-40	3	0	0	NS
Age of Child in Years					
2	1-2	2	0	0	$\chi^2=1.207$
	2-3	20	0	0	df=3
	3-4	19	1	0	P > 0.05
	4-5	17	1	0	NS
Number of Children in the family					
3	One	12	3	0	$\chi^2=1.560$
	Two	27	3	0	df=3
	Three	12	3	0	P > 0.05
	Four	2	0	0	NS
Religion					
4	Hindu	38	6	0	$\chi^2=1.401$
	Muslim	9	0	0	df=2
	Christian	6	1	0	P > 0.05
	Others	0	0	0	NS
Educational Status					
5	No formal Education	15	0	0	$\chi^2=7.137$
	Primary Education	25	3	0	df=3
	Higher Secondary Education	9	4	0	P > 0.05
	Graduate and above	4	0	0	NS
Occupation					
6	Home maker	17	1	0	$\chi^2=12.182$
	Private employee	5	3	0	df=3
	Govt Employee	5	1	0	P < 0.05
	Coolie	28	0	0	S
Family Income per Month					
7	< Rs.5000	14	0	0	

	Rs.5001-10000	17	3	0	$\chi^2=10.622$
	Rs.10001-15000	14	1	2	df=6
	> Rs.15000	8	3	0	P > 0.05 NS
Type of Family					
8	Nuclear	7	0	0	$\chi^2=2.252$
	Joint	24	2	0	df=2
	Single Parent	0	0	0	P > 0.05
	Extended	24	5	0	NS
Source of Information					
9	Family and Friends	12	0	0	$\chi^2=5.122$
	Health Personal	16	1	0	df=3
	Print Media	22	6	0	P > 0.05
	No Source of Information	3	0	0	NS

Discussion

The findings of the study have been discussed with the reference of the objectives, hypothesis and with the findings of the supportive studies.

The first objective of the study was to assess knowledge among mothers of under-five children regarding first aid for burns and its prevention in children before the structured teaching programme.

Table 2 reveals, the **pre-test knowledge scores** of under-five children's mothers: majority 39 (65%) had inadequate knowledge, 19 (31.6%) had moderate knowledge and 2(3.4%) of them had adequate knowledge regarding first aid for burns and its prevention.

The second objective of the study was to evaluate the effectiveness of the structured teaching programme regarding first aid for burns and its prevention in children among mothers of under-five children.

Table 2 reveals, the **post-test knowledge scores** of under-five children's mothers: majority 56 (93%) had adequate knowledge, 04 (07%) had moderate knowledge and none of them had inadequate knowledge regarding first aid for burns and its prevention in children. Findings show, structured teaching programme was effective.

The third objective of the study was to compare the pre-test and post-test knowledge scores among mothers of under-five children regarding first aid for burns and its prevention in children.

Table 3 shows, the pre-test mean score was 12.67 with the standard deviation of 3.56 and the post-test mean score was 25.33 with the standard deviation of 1.55. The difference in mean score was 12.66. The calculated paired 't' value was 31.37 (in 59 degrees of freedom) which is (P < 0.001 level). Hence the formulated Hypothesis H₁ was accepted.

The fourth objective of the study was to determine the association between knowledge among mothers of under-five children with their selected socio demographic variables.

Table 4, there was significant association between pre-test level of knowledge scores regarding first aid for burns and its prevention among mothers of under five children, with their selected demographic variables such as occupation. Hence the formulated Hypothesis H₂ is accepted.

It was interpreted from table 4, there was no significant association between pre-test level of knowledge scores regarding first aid for burns and its prevention among mothers of under five children, with their selected demographic variables such as age, religion, educational status, family month income, type of family, number of children and source of information. Hence the formulated Hypothesis H₂ was rejected.

The study findings were supported by following, a study conducted by⁸. to identify the types of burns in children and mother's attitudes towards, and knowledge of burn prevention. The results showed lack of knowledge among mothers regarding burns first aid⁸. Another study conducted by⁹, with an aim to analyse mothers' knowledge regarding prevention of accidents in childhood before and after an educational intervention. It was a quasi-experimental study with 155 mothers in a Basic Health Unit in northeastern of Brazil. The results showed significant increase in knowledge about prevention of accidents in childhood after the educational intervention⁹. Another study conducted by¹⁰. with an aim to assess the level of parental knowledge regarding burn prevention strategies in the home. There were 268 participants; findings showed that need of s to not only target the population's behaviour but most importantly needs to promote better education models¹⁰. Another study conducted by with aim to evaluate the extent and source of this knowledge. Overall, the knowledge of burns first aid among parents is inadequate. There was a significant association between knowledge and previous first aid training¹¹.

Conclusion

The conclusions drawn from the study were as follows

- The study results revealed that all mothers of under five children had inadequate knowledge on first aid for burns and its prevention in children, the pre-test mean score was 12.67 and the post-test mean score was 25.33.
- Comparison between pre and post-test knowledge score was done by using paired 't' test and was found be significant at $P < 0.001$ level $t = 31.37$. Hence it was concluded that structured teaching programme was effective as a method to improve the knowledge among mothers of under five children regarding first aid for burns and its prevention in children.
- There was no association between the pre-test level of knowledge with their selected socio demographic variables like age, religion, educational status, monthly income, type of family, number of children and source of information. Hence the formulated Hypothesis H_2 was rejected.
- The chi-square values explains that there was a significant association between socio demographic variables such as occupation and the knowledge levels as the chi-square value is higher than the tabulated value at 0.05 level of significance ($p < 0.05$). Therefore, the H_2 is accepted for the selected socio demographic variables.

Summary

Education enlightens the darkness of life through the public awareness, increases knowledge and bring change in the people's unhealthy practices. The major goal for nursing practice is to impart the knowledge and encourage the healthy practices. The overall findings of the study clearly showed that the structured teaching programme was significantly effective in improving the knowledge regarding first aid for burns and its prevention in children. Thus, by providing health teaching increases public health awareness and tends to decrease fire injuries, to promote well-being of under five children. Keeping this point in view, a study was undertaken to find out the effectiveness of structured teaching programme.

RECOMMENDATIONS

Based on the findings of the study the following recommendations are made:

1. A similar study can be replicated on a large sample.
2. A similar study can be done in different types of setting like urban area, Hospital, Health care centre.
3. A similar study may be replicated with a control group.
4. A Comparative study can be done between rural and urban community.
5. A comparative study can be done in finding out the effectiveness of structured teaching Programme and self-instructional module regarding the same topic.
6. The teaching and demonstration materials can be videotaped and can be shown to mothers in outpatient department of hospital.
7. To increase awareness health information can be passed out to others by various sources like: Voluntary organization, Government services, Private health camps, Nursing personnel and other health professionals with the help of mass media.

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