



## 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 purposive sampling technique. The pre test mean score was 9.4 with the standard deviation of 4.5 and the post test mean score was 26.7 with the standard deviation of 2.8. The difference in mean score was 17.3. The calculated paired 't' value was 24 (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

Children are naturally curious. As soon as they are mobile, they 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 [1]. A burn is defined as an injury to the skin or other organic tissue caused by thermal trauma, it occurs when some or all of the cells in the skin or other tissues are destroyed by hot liquids (scalds), hot solids (contact burns), or flames (flame

burns). Injuries to the skin or other organic tissue due to radiation, radioactivity, electricity, friction or contact with chemicals are also considered as burns [2].

Infants under the age of one year are in a particular category, as their mobility starts to develop and they reach out to touch objects. Scald burns are the most frequent type of burns among children under the age of six years on observation that appears to come across geographic and economic groups. Toddlers suffer more scald injuries than any other age group. Scald injuries are

frequently the results in the performance of everyday tasks such as bathing, cooking, overturned coffeepots, overheated foods, liquids cooked in micro wave ovens and hot tap water have been identified as specific causes [3]. In children under the age of four years, the level of motor development does not match the child's cognitive and intellectual development and injuries can thus occur more easily [4].

Many times, death results because of delay in reaching the casualty to appropriate medical care and low lack of knowledge regarding first aid and treatment. The first aider should also have adequate knowledge and skills about what he/she is doing and be encouraging and reassuring to the victims. This helps to lower mortality and morbidity rates, complications due to injury or delay in the treatment and a lesser monetary burden on the casualty [5]. Burns in children result in the loss of precious life, or if the child survives, in much suffering from physical, emotional, social and economic problems [6]. It is very important to look into safety and security of children by providing clean, safe and comfortable physical environment. This will promote sound psycho-social development of children [7].

#### Need for the study

Burns in children result in the loss of precious life, or if the child survives, in much suffering from physical, emotional, social, and economic problems. These burn accidents to children happen in the bustle of family life and frequently without any warning [8]. Globally, the precise number of children suffering from burn injuries annually is unknown. Published data indicates that Africa has the highest incidence of hospitalized pediatric burns while the Americas the lowest [9]. Childhood burns place enormous socio-economic burden on individuals, their families and health services [10].

Children under the age of two years had the highest risk for burns, with the majority occurring between the age of 7-12 months [11]. Older children were more likely to receive burns from flame injuries. This is supported by an Australian study, which identified that 95% of flammable liquid burns occurred in young adolescent males. The majority of pediatric scalds occurred within the home from food preparation, food consumption (hot water, tea, coffee, soup, oil and milk) or bathing activities, and was deemed largely preventable [12].

The incidence of burn commonly occurred when parents, in an attempt to find work, left children unattended, unsupervised or in the care of other children. Other factors implicated with burn injuries included the usage and storage of traditional cooking appliances and lighting, and using the same area for both cooking and sleeping [13]. The incidence of childhood burn tended to be higher in rural children than urban children. These burn injuries commonly occurred through the traditional habit of: preparing tea with two pots (one placed on top of the other); cooking over low stoves; cooking in large pots (cheese making); consuming foods while sitting on the floor; transporting hot liquids in buckets and pots; or falling into a hot container. Sterilization of milk by boiling rather than pasteurizing resulted in burns in many rural areas [10].

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 11<sup>th</sup> 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 2004 [1]. A study conducted in Kasturba Hospital, Manipal (India) retrospectively and were analyzed for incidence, severity, extent, causes, risk factors and overall mortality. Children of age < 5 years were affected more than children of age > 5 years (76.1 vs. 23.9%). Females were affected more than males (74.1 vs. 25.9%). Most of the children received burn injuries in the range of 0 to 20% BSA (63.1%). Scald (72.5%) followed by flame (22.7%) and electrical burn (3.2%) were most common cause of burn injuries. Overall paediatric burn mortality was 7.4% [14].

Childhood burns are largely environmentally conditioned and preventable. Parental education and product safety, special attention needs to be paid to the kitchen. There must be much greater awareness everywhere about the dangers of storing flammable substances in the home. With the aim creating awareness regarding burns researcher conducted study among under five mothers.

**Statement of the problem**

Effectiveness of Structured Teaching Programme on Knowledge regarding First Aid for Burns and It’s 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**

- **H<sub>0</sub>1:** There will be no significant difference between the pre-test and post-test level knowledge scores among mothers of under-five regarding first aid for burns and its prevention in children.
- **H<sub>0</sub>2:** There will be no significant association between pre test level of knowledge scores of mothers with their selected socio- demographic variables.

**Methodology**

An evaluative research approach was considered appropriate for the study, pre-experimental (one group pretest and posttest) design was used. The population for the present study was under-five children mothers who are residing at Bangalore. The sample size consists of 60 under-five children mothers selected by using non probability purposive sampling technique. Sample selection was by choice and not by chance. The independent variable was structured teaching programme and dependent variable was knowledge of the subject. 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 8 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, analyzed and interpreted according to the objectives and hypothesis by using descriptive and inferential statistics and were presented in tabular and graphical form.

**Results**

The results of the study were as follows.

S. No.	Demographic Variables	Frequency	Percentage
1	Age in Years		
	18-24 years	32	53%
	25-29 years	25	42%
	30-34 years	3	5%
2	Religion		
	Hindu	44	73%
	Muslim	9	15%
	Christian	7	12%
	Others	0	0%
3	Educational Status		
	Primary school	15	25%
	Higher primary school	28	47%
	Under graduate	13	22%
	Post graduate	4	6%
4	Occupation		
	Labor	28	47%
	Employee	8	13%
	Day workers	6	10%
	House wife	18	30%
5	Family Monthly Income (In Rupees)		
	<5000	14	23.30%
	5000-8000	20	33.30%
	8000-11000	15	25%
	>11000	11	18.33%

6	Type of Family		
	Joint family	26	43.30%
	Nuclear family	7	11.60%
	Extended family	27	45%
7	Number of Children		
	One	15	25%
	Two	29	48.30%
	Three	14	23.30%
	More than 3	2	3.30%
8	Source of Information		
	Mass media	28	47%
	Health care personnel	17	28%
	Family members	12	20%
	No source of information	3	5%

**Table 1:** Frequency and percentage distribution of under- five children mothers according to their socio demographic variables (N = 60).

S. No.	Knowledge Levels	Pre-test		Post Test	
		Frequency	Percentage	Fre- quency	Per- cent- age
1.	Adequate	0	0	55	92
2.	Moderate	7	12	5	8
3.	Inadequate	53	88	0	0

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

S. No.	Test	Mean	Mean %	Standard deviation	Paired 't' value
1.	Pre test	9.4	17.3	4.5	t <sub>cal</sub> : 24 df = 59 P < 0.001 Significant
2.	Post test	26.7		2.8	

**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	Demographic Variables	Scores			Chi-square value
		Inadequate	Moderate	Adequate	
1	Age in Years				X <sup>2</sup> = 0.4 df = 2 P > 0.05 NS
	18-24yrs	28	4	0	
	25-29yrs	22	3	0	
	30-34yrs	3	0	0	
2	Religion				X <sup>2</sup> = 1.4 df = 2 P > 0.05 NS
	Hindu	38	6	0	
	Muslim	9	0	0	
	Christian	6	1	0	
	Others	0	0	0	
3	Educational Status				X <sup>2</sup> = 7.1 df = 3 P > 0.05 NS
	Primary school	15	0	0	
	Higher Primary School	25	3	0	
	Under graduate	9	4	0	
	Post graduate	4	0	0	
4	Occupation of the Mother				X <sup>2</sup> = 6.5 df = 3 P > 0.05 NS
	Labor	26	2	0	
	Employee	5	3	2	
	Day workers	5	1	0	
	House wife	17	1	0	

5	Family Monthly Income				$X^2 = 5.0$ $df = 3$ $P > 0.05$ NS
	<5000	14	0	0	
	5001- 8000	17	3	0	
	8001- 11000	14	1	2	
	> 11000	8	3	0	
6	Type of Family				$X^2 = 2.5$ $df = 3$ $P > 0.05$ NS
	Joint family	24	2	0	
	Nuclear family	7	0	0	
	Extended family	22	5	0	
7	Number of Children				$X^2 = 2$ $df = 3$ $P > 0.05$ NS
	One	12	3	0	
	Two	27	2	0	
	Three	12	2	0	
	More than three	2	0	0	
8	Source of Information				$X^2 = 5.1$ $df = 3$ $P > 0.05$ NS
	Mass media	22	6	0	
	Health care personnel	16	1	0	
	Family members	12	0	0	
	No source of information	3	0	0	

**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).

## 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 scores of under five children mothers: majority 53 (88%) had inadequate knowledge, 07 (12%) had moderate knowledge and none 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 mothers: majority 55 (92%) had adequate knowledge, 05 (08%) had moderate knowledge and none of them had inadequate knowledge regarding first aid for burns and its prevention in children. Findings shows, 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 9.4 with the standard deviation of 4.5 and the post test mean score was 26.7 with the

standard deviation of 2.8. The difference in mean score was 17.3. The calculated paired 't' value was 24 (in 59 degrees of freedom) which is ( $P < 0.001$  level). Hence the formulated Hypothesis  $H_01$  was rejected.

**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.**

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, occupation, type of family, number of children and source of information. Hence the formulated Hypothesis  $H_02$  was accepted.

The study findings were supported by following, a study conducted by [8], 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 aid [8]. Another study conducted by [15], with an aim to analyze 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 intervention [15]. Another study conducted by [16], 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 behavior but most importantly needs to promote better education models [16]. Another study conducted by [18] 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 training [17].

**Conclusion**

The nursing science is the discovery of new knowledge to improve nursing practice. Nurse scientist seeking to develop evidence based practice in clinical area.

**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

it's prevention in children, the pre test mean score was 9.46 and the post-test mean score was 26.7.

- 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  $t = 24.9$ . 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 it's 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, occupation, monthly income, type of family, number of children, and source of information.

**Summary**

Education enlightens the darkness of life through the public awareness, increases knowledge and bring change in the peoples 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:**

- A descriptive study can be conducted to assess the knowledge of mothers regarding first aid for burns and its prevention with large sample size.
- A comparative study can be under taken among mothers of under-five children in rural area.
- A similar study can be replicated with a control group.

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