

## Knowledge and assessed practice regarding first aid among mothers of under 15 years children – A community based study in a rural area of south India

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**Abstract:** *Background:* Children less than 15 years of age are especially vulnerable to the morbidity and mortality resulting from injury. As caregivers of children, women play a critical role in the care of children immediately following injury. The first hour after an accident is very crucial and if the correct first aid measures are taken, lives could be saved and disabilities limited. *Objectives:* To assess first aid knowledge in *selected* circumstances among mothers of children less than 15 years of age in a rural area. To assess the current treatment practices in specific situation. *Methods:* A cross sectional study conducted among 140 mothers of under 15 children in a village of South India. A pretested interview schedule was administered which included socio-demographic details and thirteen questions covering knowledge regarding first aid in various circumstances. A correct response for each question was awarded '1' mark. A partially correct response was awarded '0.5' marks. A wrong response was awarded '0' marks. The subjects were grouped into one of 4 categories based on the total score obtained - Low=  $\leq 3.25$ , Medium= 3.26 - 6.5, High= 6.6 - 9.75, Very High= 9.76–13. *Results:* only 48 (34.3%) of all the mothers stated that they had heard about first aid and most of them had heard from their teachers. Correct knowledge on first aid in various situations was less than 30% in most of the situations. There were several misconceptions regarding the management of various emergencies and injuries which could potentially lead to adverse outcomes following injury. The mean overall baseline knowledge score was  $2.34 \pm 1.98$  among mothers. *Conclusion:* The Knowledge regarding First Aid for management of injuries among women with children <15 years in the study area was poor.

**Keywords:** First aid, knowledge, rural, domestic injuries, under 15 children.

### Introduction

First aid is defined as the assessments and interventions that can be performed by a bystander (or by the victim) immediately with minimal or no medical equipments [1]. The main objective of providing first aid is to reduce suffering, promote healing process and prevent damage. Most of the times the first aid given decides the future course of illness, severity and its outcome [2]. Often, the knowledge regarding first aid reported is poor and disintegrated [3]. Incorrect practices and myths associated with illnesses and injuries have also been reported among people living in community.

In any community, mother and children comprise a priority group, with children under 15 years comprising nearly 40 % of the total population [4]. Injuries in childhood are very common and

comprise the base of the injury pyramid for all ages [5]. Globally, more than 39,000 children per day or 14 million children per year require medical attention for accidental injuries [3]. Children living in rural areas has significantly higher rates of hospitalization due to injuries than those living in urban areas [6-7].

In terms of facilities, rural areas have been found lacking, putting the burden of immediate care following injury onto the caregiver of the child. Studies done in both developed and developing countries have demonstrated a lack in the knowledge of caregivers towards common problems occurring in childhood including the occurrence of injuries [7]. A priority group among women is those with school going children since their knowledge has the potential to influence the health of their child.

Therefore the study population comprised all women residing in Mugalur village and having children aged 0-15 years. Hence this study was conducted with the objective of assessing first aid knowledge & practice in select circumstances among mothers of children less than 15 years of age in the study area.

### Material and Methods

This was a descriptive study, done among mothers of children aged below 15 years between September 2006 and August 2007 at Mugalur village, Anekal Taluk, Bangalore District, Karnataka State. Mugalur village is part of the rural field practice area of the Department of Community Health, St John's Medical College Bangalore and is located approximately 37 kilometers from Bangalore city. The Rural Community Health and Training Centre of the Department are situated at this village and cater to a population of 12000 within a radius of five kilometers in the surrounding 16 villages. An interview schedule to assess knowledge of first aid was developed and validated for face and judgmental validity by circulation among experts and peers in the field. It was pre-tested by administration to a group of women in a non-study area, but similar setting and required modifications were made. The interview schedule used in the study of knowledge had two parts: Part 1 comprised of the demographic details collected at the household. It comprised details of age, number of children and gender distribution, socio economic status using the Standard of Living Index and identification of the head of the family. Part 2 comprised questions on awareness regarding First Aid.

For the purpose of assessing the knowledge of subjects regarding First Aid, thirteen questions covering knowledge regarding first aid for minor cuts, burns, convulsions, foreign body in the eyes, ears, and nose, choking, snake bite/scorpion sting, animal bites, poisoning, bleeding were administered. A correct response for each question was awarded '1' mark. A partially correct response was awarded '0.5' marks. A wrong response was awarded '0' marks. The subjects were grouped into one of 4 categories based on the total score obtained - Low=  $\leq 3.25$ , Medium= 3.26 - 6.5, High= 6.6 - 9.75, Very High= 9.76 - 13. A population listing of households in the village was obtained, and those houses which had

a mother with youngest child < 15 years of age were identified. Following finalization of the schedule, consent was obtained at the community and individual levels and the schedule administered to women who had their youngest child <15 years of age by means of a survey of all identified houses. Houses found locked even after 3 visits were considered non responders. There were a total of 140 women thus identified and included in the study.

The data was compiled in a MS excel worksheet and analyzed using Epi Info ver 6. Percentages and Chi-square test were the statistical tests used to study the associations between selected demographic variables and levels of knowledge.

### Results

A total of 140 women with their youngest child below 15 years of age participated in the study. Table 1 shows the socio demographic distribution of the study subjects. The age distribution of mothers in the study ranged from 16 to 45 years. Of the 140 women, majority (54.3%) were in the age group of 25 to 34 years. Most mothers (72.9%) were housewives. As assessed by the Standard of Living Index, 65.7% of the study population belonged to the middle socio-economic class.

<b>Table-1: Socio-demographic characteristics of study population</b>		
<b>Characteristic</b>	<b>Frequency N=140</b>	<b>% age</b>
<b>Age in years</b>		
< 25	54	38.6
25-34	76	54.3
> 35	10	7.1
<b>Occupation</b>		
House wife	102	72.9
Coolie	11	7.9
Agriculture	10	7.1
Power loom	4	2.9
Tailor	7	5.0
Health worker	3	2.1
Shopkeeper	3	2.1
<b>Socio-economic Class</b>		
Upper class	21	15.0
Middle class	92	65.7
Lower class	27	19.3

Table 2 shows age and gender distribution of children of mothers in the study population. The total number of children belonging to the study subjects was 251. They were grouped into 2 age groups based on their ages. Most of the children (72.1%) were in the age group of 6-15 years. There was no significant difference in the distribution of male and female children in both age-groups.

**Table-2: Age and gender distribution of children of the mothers**

Age-group	Male (%)	Female (%)	Total (%)
≤ 5yrs	34 (13.5)	36 (14.3)	70 (27.9)
6-15yrs	91 (36.3)	90 (35.9)	181 (72.1)
<b>Total</b>	<b>125 (49.8)</b>	<b>126 (50.2)</b>	<b>251 (100)</b>

*Knowledge of subjects regarding First Aid:* Table 3 shows the knowledge of first aid as reported by the study population. The study subjects were asked if they had heard of the term "First Aid" only 48 (34.3%) of all the mothers stated that they had heard about first aid.

**Table-3: Knowledge of first aid as reported by the study population**

Awareness of First Aid reported	Frequency N=140	% age
Aware	48	34.3
Not aware	92	65.7
<b>Total</b>	<b>140</b>	<b>100.0</b>

Out of 140 study population only 48 mothers were aware of first aid. (N=140)

**Table-4: Source of information & knowledge regarding persons qualified to administer First aid**

Source	Frequency (N = 48)	% age
Text book	23	47.9
School teacher	27	56.3
Health worker/ Anganwadi worker	14	29.2
Doctors/Nurses	23	47.9
Television/Radio/News paper	22	45.8
Others*	3	6.3

Source	Frequency (N = 48)	% age
<b>Qualified Person</b>		
School teacher	2	4.2
Health worker/ Anganwadi worker	4	8.3
Doctors/Nurses	20	41.6
Anybody trained in first aid	31	64.6
Self	3	6.3
Don't know	2	4.2
<b>Total</b>	<b>48</b>	<b>100</b>

Note - Multiple responses given.  
\*Garment factory and street play

When the source of information regarding first aid was enquired (Table 4), of the 48 subjects who were aware of first aid, 27 (56.3%) had heard about First Aid through school teachers when they were children. Other major sources of information were text books and media like TV/Radio/News paper. 6.3% had heard about First Aid at garment factories and through street play. When opinion regarding persons qualifies to administer first aid was asked of the 48 who were aware of First Aid, 31 (64.6%) stated that anybody trained in first aid could administer the same. The rest reported that first aid could only be administered by personnel such as doctors/nurses, school teachers and health workers

**Table-5: Knowledge of First Aid practice in specific situations among all study population (N=140 (48+92) with or without awareness of First Aid**

Specific situation	Number stating correct response N=140 (48+92) with or without awareness of First Aid	% age
Foreign body in ear	103	73.6
Foreign body in nose	89	63.6
Foreign body in eye	65	46.4
Ingestion of Poisonous substance	53	37.9
Choking	41	29.3
Burns	37	26.4
Clothes on fire	37	26.4
Cuts and wounds	36	25.7
Drowning	28	20.0
Animal bite	20	14.3
Snake bite	10	7.1
Seizure	9	6.4

Table 5 shows the distribution of correct knowledge of the study population regarding First Aid and the proportion of subjects knowing correct First Aid practice in specific situations less than half of the women stated the appropriate First Aid practice in most specific hypothetical situations.

<b>Table-6: Knowledge regarding nature of First aid to be given for specific conditions</b>		
<b>Specific situation requiring first aid</b>	<b>Frequency N=140</b>	<b>% age</b>
<b>Minor cuts and wounds</b>		
Coffee powder	64	45.7
Do nothing go to doctor	56	40
Washing the wound and applying pressure	36	25.7
Herbal extract	12	8.6
Other practices	51	36.4
<b>Burns</b>		
Apply cut potato/Castor oil/egg white	80	57.1
Keep burned part under cold water	37	26.4
Other practices	28	20
Do nothing go to a doctor	4	2.8
Apply herbal extract	4	2.9
<b>Seizures</b>		
Metal keys given in hand	72	51.4
Branding	20	14.3
Keep person under control, and remove objects that may cause injury without applying force to stop convulsions	9	6.4
Do nothing go to a doctor	30	21.4
Other practices	7	5
No knowledge regarding ability to give first aid	52	37.1
<b>Foreign Body eye</b>		
Blink eyelids in a cup of water	65	46.4
Make a pointer with handkerchief/any cloth and try to remove foreign body	31	22.1
Rub eye with hands	14	10
Go immediately to a doctor	69	49.3
Other practices	51	36.4

<b>Specific situation requiring first aid</b>	<b>Frequency N=140</b>	<b>% age</b>
<b>Foreign body nose</b>		
Make the person sneeze	47	33.6
Try to take out by any means	29	20.7
Ask the person to breath by mouth instead of nose	4	2.8
Other practices	3	2.1
Go immediately to a doctor	89	63.6
<b>Foreign body ear</b>		
Pour coconut oil in the ear	60	42.9
Try to take out by any means	35	25
Other practices	8	5.6
Go immediately to a doctor	103	73.6
<b>Choking due to foreign body</b>		
Give water to drink	72	51.4
Gently tap on back with head down and chest up	41	29.3
Other practices	14	10
Go immediately to a doctor	65	46.4
<b>Poisoning ingestion</b>		
Induce vomiting with salt water	53	37.9
Check for ABC	3	2.1
Other practices	16	11.4
Go immediately to a doctor	17	12.2
Don't know	69	49.2
Note - Multiple responses given		

Table 6 shows the *knowledge regarding nature of first aid* to be given in various hypothetical situations.

Of the 140 subjects, 64 (45.7%) suggested use of coffee powder as First Aid for minor cut or wound. Fifty one mothers mentioned application of various substances like turmeric powder, talcum powder, kum kum, Nebasul powder, expired tablets powder, eye ointment, any ointment, plaster, bandage, coconut oil, dettol to the cut wound.

For burns majority of the subjects stated application of cut potato, castor oil and egg white as the treatment. Twenty eight mothers mentioned application of salt, burnol ointment, coconut oil, expired drugs powder,

eye ointment, ragi flour, plaster, pumpkin pulp, tamarind to the burn wound. 72 (51.4%) stated that metal keys should be given in the hands of the victim at the time of seizure. Some mothers opined that branding the children, piercing the ears, taking the child to temple will control the seizures.

65 (46.4%) of the subjects stated blinking the eye in a cup of water as a first aid measure. One third of the mothers said they would apply jaggery water, breast milk, tulsi extract, salt water, castor oil, any eye drops to the eye to remove foreign body. The most common response for a foreign body in the nose was the victim should be taken to a doctor. Next common response was make the person sneeze is 33.6%. For foreign body in the ear 103 (73.6%) subjects stated to take the person to doctor. The next common response was to pour coconut oil into the ear (42.9%).

Most (51.4%) of the study population stated that water should be given to drink to a person who was choking. Twenty nine percent of mothers said that they have to gently tap on back of the child with head down and chest up. Some mothers said that they give banana to eat or just pat on head and chest. 37.9% of the women stated that vomiting was to be induced with salt water, for any case of poisoning, irrespective its nature. Some mothers said that they would give soap water, egg white, neem leaf juice or mustard powder to induce vomiting.

Score	Number	Percentage
Low ( $\leq 3.25$ )	108	77.1
Medium (3.26 - 6.5)	26	18.6
High (6.6 - 9.75)	5	3.6
Very high (9.76 – 13)	1	0.7
<b>Total</b>	140	100
Range 0-10, Mean score = 2.34, SD = 1.98		

Table 7 shows Overall Baseline Knowledge of First Aid in the study population. 77.1% and 18.6% of women studied had knowledge scores in the "low" and "medium" category respectively. The mean knowledge score out of a possible score of 13 was 2.34, indicating a poor level of knowledge among the study population.

## Discussion

The study population chosen was 140 women having children aged below 15 years comprising 12.4% of the total population. The reason for selecting women was because they are considered to be primary caregivers of the sick in the family and the most common to respond to any situation needing first Aid (Dr. Ruth). Women having less than 15 year children were selected because of the fact that domestic accidents are a common occurrence among children, usually needing first aid [8]. Childhood injuries, mainly accidental injuries are a leading cause of death among children between 5-14 years of age [9-10].

Death and injury among these children could be largely prevented if their parents, particularly mothers regarded as primary caregivers have knowledge of first aid. Of the 140 women, 102 (72.9%) women were housewives and the rest were working women employed in a variety of professions. This is important since it demonstrates that such women may be the most accessible individuals to impart first aid in case of domestic injury. Women are however considered to be the best teachers and have potential influence on the family members, particularly the children [6] and this constituted one more reason for selecting women as the subjects for this study.

*Source of information of First Aid:* Of the 48 subjects who were aware of first aid, the major sources of information regarding the same were through school teachers (when they were children), Text books and media like TV/Radio/News paper. Only 6.3% had heard about First Aid through Garment factories, and street play. This information is very useful in planning intervention strategies for creating awareness among the masses regarding first aid and the methods that that could be used to deliver the same. Health education of children has been seen as a major factor to inculcate practices later on in adulthood [11]. The increasing role of the mass media in health education is also highlighted through this finding. Very few of the women reported having heard of health education at their occupational settings, this could probably be attributed to the fact that

majority of the subjects were housewives and among those working, majority were employed in the unorganized industry.

It has been seen that among the causes of injury, domestic accidents occupies a prominent position. Road traffic accidents are a rarity in rural areas and thus domestic and occupational related accidents are the commonest cause of injury in rural areas [12]. It was found that several studies documented falls causing cuts and abrasions as a common cause of injury in the paediatric age group. These studies further go on to mention that though these injuries are relatively trivial, improper wound management by application of certain topical substances would cause secondary infection, delayed wound healing and even sepsis [13-15].

The commonest practice followed for first aid of a cut with bleeding was the application of turmeric powder. In a study done in Chandigarh among high school children regarding minor injuries, 84.6% of the rural children reported application of turmeric powder as a first Aid on a wound with bleeding [14]. Though this is reported to have wound healing properties, studies also document the application of other topical substances which have the ability to retard healing [14, 16].

One of the practices followed for first aid of burns was application of coconut oil. The rest reported immersing the wound in cold water and then applying burnol ointment or calamine. Other studies have reported the application of a variety of other substances such as tooth paste, butter on

burn wounds as a First aid measure. This could result in wound infection and should be avoided [17].

The practice followed for first aid of a foreign body in the nose was to induce sneezing by using chilli powder or snuff. This is a harmful practice and may lead to further and deeper impaction of the foreign body in the nasal cavity as the person has to inhale deep in while sniffing the chilli powder/ snuff and before sneezing [18].

Of the women interviewed, only 9 (6.4%) stated the appropriate first aid for a person having a seizure attack. 30 (21.4%) of them stated that the victim should be taken to a doctor without any intervention. 72 (51.4%) stated that metal keys should be given in the hands of the victim at the time of seizure. 20 (14.3%) of them were of the opinion that branding should be performed. This highlights the misconceptions present among rural populations regarding seizure episodes and their management [19].

### Conclusion

The knowledge regarding First Aid in the study population was low, with 77.1 % of subjects scoring less than 3.25 out of 13 points in the baseline assessment. And also the knowledge of first aid practices among mothers about the management of those specific situations are harmful and may interfere with the recovery of the child from injury.

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