



# Prevalence of Domestic Accidents in Kitchen among Housewives in an Urban Area: A Cross Sectional Study

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## ABSTRACT

**Background:** Domestic accident is an accident which takes place in the home or in its immediate surroundings. Domestic accidents are worldwide public health problems. The study was conducted to know the prevalence of domestic accidents among housewives in the kitchen and to assess the preventive measures practiced against domestic accidents by housewives in the kitchen.

**Methods:** Data was collected from housewives residing at the urban field practice area of Department of Community Medicine, BIMS, Belagavi. By using pre tested structured questionnaire, information like, socio-demographic factors, kitchen environment, domestic accident occurred in kitchen in last six months and safety measures practiced by the housewives was collected.

**Results:** The study found that more than half (51.7%) of the housewives met with one or more types of domestic accidents in past 6 months. Majority of the participants followed safety measures like turning gas cylinder off after cooking (74.2%) & using machineries of the kitchen after reading the instruction manual given along with them (54.5%).

**Conclusion:** Practice regarding safety measures in kitchen was low among the housewives. The problem of domestic accidents can be taken care by effective information, education and communication (IEC) interventions regarding the use of safety measures by housewives.

**Key words:** Domestic accident, Housewives, Kitchen, safety measures.

## INTRODUCTION

Domestic accidents is meant an accident which takes place in the home or in its immediate surroundings.<sup>1</sup> A married woman whose main occupation is caring for the family, managing household affairs and doing housework is a housewife.<sup>2</sup> Accidents can take place in a wide variety of environments and there is a possibility of accidents in every sphere of human life: at home, at play, and at work.<sup>3</sup> The public health experts have coined the name 'Modern Day Epidemic' for accidents.<sup>1</sup> Home injuries are leading causes of death and disability worldwide and are globally recognized as

an important public health issue.<sup>4</sup> It is one of the five leading causes of death in industrialized and developing countries.<sup>5</sup> Every domestic accident brings deleterious physical and mental health effects to the concerned victim and mental stress, loss of earning capacity and productivity.<sup>6</sup> The prevalence of domestic accidents was found to be more in females and in kitchen.<sup>7</sup> There are gaps in understanding the safety measures followed by the housewife to prevent domestic accidents in kitchen. The present study was conducted to know the prevalence of domestic accidents among housewives in the kitchen and to understand the preventive measures practiced by them in the kitchen.

**METHODS**

The present study was conducted among the housewives from the urban field practice area of Department of Community Medicine, BIMS, Belagavi from December 2015 to March 2016. Systematic random sampling technique was considered and every 10<sup>th</sup> house was selected for data collection from this urban area having 10166 houses with a population of 54330, till the required sample size was reached. All married women of above 18 years of age and women involved in kitchen work daily for minimum 2 to 4 hrs were included. After taking written consent, the housewives were interviewed by using pre tested structured questionnaire. The basic information like name, age, education & socioeconomic status, occupation, kitchen environment, domestic accidents occurred in kitchen in last six months and safety measures practiced by the house wives was collected and IEC was given to the participants on the safety measures to be followed in kitchen. A formal permission to conduct the study was obtained from the institutional authorities after obtaining ethical clearance from Institutional Ethical Committee. For convenience, socio-economic status of the study subjects was classified into class I ( $\geq 6100$ rs), class II (3050 - 6099), class III (1830 - 3049), class IV (915 - 1829) and class V (< 915) by using B.G. Prasad classification based on All India Consumer Price Index of September 2015 i.e. 266 (correction factor = 22.82).<sup>8</sup> General building requirement manual was considered for kitchen space, ventilation and lighting.<sup>9</sup>

**Statistics**

The sample size required for this study was estimated by assuming confidence interval of 95% and 5% margin of error and a prevalence of 15.8% for the domestic accident in kitchen as per a study done in Mysore by Sudhir et al.<sup>5</sup> Accordingly, the sample size required for the study was 213. However, the present study included 255 housewives. The collected data was compiled, tabulated and analyzed by MS Excel and SPSS version 22, it was analyzed by using descriptive statistics, viz. percentages and the inferential statistics using chi square to test the difference between proportions. The difference in proportion is considered statistically significant whenever  $P \leq 0.05$ .

**RESULTS**

As shown in Table 1, out of 255 housewives, one third of the study subject were in the age group of 31- 40 years, majority of them were educated up to secondary level (29.4%) and belonged to Class V socioeconomic status (38 %). More than half of

them were from nuclear family. Most of the domestic accidents (62.2%, 65.1% and 60.6%) occurred due to adequate floor area, adequate ventilation and adequate lighting in the kitchen respectively. This association between domestic accidents and kitchen environmental condition was significantly associated as given in table 2.

**Table 1: General information of the study subjects N = 255**

Variable	Participants (%)
<b>Age (years)</b>	
< 20	12(04.7)
21 - 30	81(31.7)
31 - 40	85(33.3)
> 41	77(30.1)
<b>Education</b>	
Illiterate	77(30.1)
Primary	67(26.2)
Secondary	75(29.4)
> Higher secondary	36(14.1)
<b>Type of family</b>	
Joint	119(46.6)
Nuclear	136(53.4)
<b>Socio- economic status</b>	
Class I	09(03.5)
Class II	15(05.8)
Class III	57(22.3)
Class IV	77(30.1)
Class V	97(38.0)

**Table 2: Information about kitchen area**

Variables	Domestic accidents		Total (n = 255)	P value
	Present (n = 132)	Absent (n = 123)		
<b>Space</b>				
Adequate	82 (62.2)	113 (91.8)	195 (76.4)	<0.001
Inadequate	50 (37.8)	10 (08.2)	60 (23.5)	
<b>Ventilation</b>				
Adequate	86 (65.1)	95 (77.2)	181 (70.9)	<0.05
Inadequate	46 (34.9)	28 (22.8)	74 (29.1)	
<b>Light source</b>				
Adequate	80 (60.6)	95 (77.2)	175 (68.6)	<0.005
Inadequate	52 (39.4)	28 (22.7)	80 (31.4)	
<b>Hygiene</b>				
Adequate	114 (86.3)	110 (89.4)	224 (87.8)	>0.05
Inadequate	18 (13.6)	13 (10.5)	31 (12.1)	
<b>Source of fuel</b>				
L P gas	98 (74.2)	91 (73.9)	189 (74.3)	<0.05
Kerosene	08 (06.2)	18 (14.8)	26 (10.2)	
Electricity	02 (01.5)	04 (03.2)	06 (02.3)	
Firewood	11 (08.3)	04 (03.3)	15 (05.8)	
Multiple	13 (09.8)	06 (04.8)	19 (07.4)	

Figure in parenthesis indicates percentage.

**Table 3: Distribution of place of treatment for domestic accidents by housewives**

Type of injuries	Frequency (n=132) (%)	Manage at home (n = 63) (%)	OPD consultation (n= 60) (%)	Hospitalization (n=09) (%)
Cut / Laceration	44 (33.3)	34 (77.3)	10 (22.7)	00
Burns	22 (16.7)	08 (36.4)	14 (63.6)	00
Falls / slips	11 (8.3)	01 (09.1)	06 (54.5)	04 (36.4)
Electrical injury	10 (7.6)	04 (40.0)	06 (60.0)	00
Skin rashes / allergy	10 (7.6)	00	08 (80.0)	02 (20.0)
Multiple accidents	27 (20.5)	13 (48.1)	12 (44.4)	02 (07.4)
Others*	08 (6.1)	03 (37.5)	04 (50.0)	01 (12.5)

\* Machine injuries and cooker blast; Figure in parenthesis indicates percentage.

**Table 4: association between domestic accidents and safety measures followed by the housewives**

	Domestic accidents			p value
	Safety measures (n = 132)	Present (n = 123)	absent (n = 255)	
<b>Cooking apron used</b>				
Yes	04 (03.1)	02 (01.6)	06 (02.3)	>0.5
No	128 (96.9)	121 (98.3)	249 (97.7)	
<b>Gas cylinder regulator turned off</b>				
Yes	98 (74.2)	91 (73.9)	189 (74.2)	<0.005
No	34 (25.7)	32 (26.1)	66 (25.8)	
<b>Machine handled as per the instruction</b>				
Yes	60 (45.4)	79 (64.2)	139 (54.5)	<0.005
No	72 (54.6)	44 (35.8)	116 (45.4)	
<b>Frequency of cooker gasket changed*</b>				
1- 6 months	22 (16.6)	37 (30.1)	59 (23.1)	<0.05
7- 12 months	73 (55.3)	66 (53.6)	139 (54.5)	
> 12 months	26 (19.6)	13 (10.5)	39 (15.2)	

\* 18 study subjects were not using pressure cooker; Figure in parenthesis indicates percentage.

We found in the present study 132 (51.76%) housewives had met with one or more types of domestic accidents in past 6 months. Injury by sharp/ pointing instruments 33.3% (44) was the most common type of domestic accident followed by multiple accidents 20.5% (27), burns 16.7% (22), fall/ slip 8.3% (11), skin allergy 7.6% (10), electrical injury 7.6% (10) and others (cooker blast, machine injury, fire accidents) 6.1% (8). The place of treatment received for domestic accidents by housewives were home, consultation of doctor on OPD basis and hospitalization which were 47.7%, 45.5% and 6.8% respectively, Majority of them (47.7%) managed the injuries at home as depicted in table 3.

Table 4 shows the association between domestic accidents and safety measures followed by the housewives in kitchen. 25.7% and 45.4% of the domestic accidents occurred due to not turning off of gas cylinder regulator while not in use and among those who did not read the user manual before handling the machine respectively and this association was statistically significant. 96.9% of domestic accidents occurred among those who did not use cooking apron while cooking, however there was no significant association found.

**DISCUSSION**

In the present study we found prevalence of domestic accidents among housewives to be 51.76%. A study by Shawon et al<sup>10</sup> reported that 25.7% of domestic accidents was found among the housewives. Other studies by Masthi et al<sup>3</sup>, Shawon et al<sup>10</sup> and Mannocci et al<sup>4</sup> reported 9.4%, 10.6% and 18% prevalence of domestic accidents respectively. Studies in other countries found 2% and 2.7% by Devroey et al<sup>11</sup> and Haniff et al<sup>12</sup> respectively. High prevalence was found in the present study and majority of the domestic accidents occurred among the study subjects who resided in adequate floor area, adequate ventilation and adequate lighting in the kitchen. This association between domestic accidents and kitchen environmental condition was significantly associated. This may be due to lack of awareness of safety measures or negligence to take precautions inspite of knowing them. Most common type of domestic accidents was injuries from sharp or pointed instrument, Hmingthenzuala et al<sup>7</sup>, Kommula VM et al<sup>13</sup> and Majori et al<sup>14</sup> found similar finding in their studies. However few other studies by Banderi et al<sup>15</sup> and masthi et al<sup>3</sup> found that fall was most common injuries.

Majority of the study participants received treatment at home followed by OPD consultation of a doctor for the injuries occurred due to domestic accidents, similar finding in other studies by Sudhir et al<sup>5</sup> and Shawon et al.<sup>10</sup> Most of the injuries were minor so majority received treatment at home. Hardly there were any studies on domestic accidents in relation with kitchen environmental factors and safety measures practiced by the housewives, this study bridges the knowledge gap. Limitations of our study were small sample size and recall bias by the study subjects. Future study can be undertaken with large sample size.

**CONCLUSION**

The present study concludes that the most commonly encountered domestic accidents are injuries by sharps / pointing instruments. The prevalence of domestic accidents among housewives was found to be 51.76%. Practices regarding safety

measures in kitchen were low among the housewives. There is an urgent need to be undertaken at local level like interventions on adequate practice of safety and prevention of domestic accidents. The problem of domestic accidents can be taken care by promoting safety measures and creating awareness among the housewives through IEC interventions.

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