Original Research Article

Prevalence of domestic accidents in a rural area of Kerala: a cross sectional study

Sobha George*, Nimitha Paul, Paul T. Francis, K. Leelamoni

Department of Community Medicine, Amrita School Of Medicine, Amrita Vishwa Vidyapeetham, Kochi, Kerala, India

*Correspondence:
Dr. Sobha George,
E-mail: sobhageorge@aims.amrita.edu

ABSTRACT

Background: Domestic accidents are important worldwide public health problems which require increased attention. A domestic accident means an accident that takes place at home or its immediate surroundings. Domestic accidents can result in disability and loss of productivity. The aim of the study was to find the prevalence of domestic accidents in a rural area and the various epidemiological factors associated with it.

Methods: A community based cross sectional study was done in a rural area of Kerala. The study period was April-May 2016. Face to face interview with a responsible adult informant was done to collect information from 403 households consisting of 1826 individuals using a semi-structured questionnaire after getting consent. Data was tabulated using MS Excel and analysed using SPSS version 20. Qualitative variables expressed as percentages and association found out using Chi square test.

Results: The prevalence of domestic accidents in the community was found to be 10.5% (9.14 – 11.95, 95% CI). Majority of the victims were females (66%). Falls were the most prevalent type of domestic accident (33.5%) and it was found to be significantly associated with age, educational status, place of occurrence and activity during accident. First aid kits were available only in 38.2% of houses.

Conclusions: Increased awareness, specially among female population is needed to reduce domestic accidents. Take extra care of the extreme ages as they are more vulnerable to falls. It is essential that every house has a first aid kit.

Keywords: Accidents, Domestic, Prevalence, Rural

INTRODUCTION

Home is a place where we feel safe. However, home is also a place where dangers exist. An accident is an undesirable and unplanned event that could have been prevented had circumstances leading up to the accident been recognized, and acted upon, prior to its occurrence. Domestic accident means an accident that takes place at home or its immediate surrounding and more generally, not all accidents concerned with traffic, vehicle or sports.[1] Domestic accidents are important worldwide public health problems which require increased attention.

They are one of the five leading causes of death in industrialized and developing countries.[2] In developing and industrialized countries 10-30% of all hospital admissions are due to accidental injuries.[3]

Every domestic accident brings distress not only to the victim but also to the family members. Domestic accidents can result in disability and loss of productivity. The causes of these accidents are many. In a developing country like India knowledge about domestic accidents is less. In this context, the present study was carried out to study the occurrence of domestic accidents in a rural community.

The objective of the study was to find the prevalence of domestic accidents in a rural area and to study the various epidemiological factors associated with domestic accidents in a rural area.

METHODS

A community based cross sectional study was done in Njarackal panchayath, a rural area of Kerala. The study period was April-May 2016. The study population included permanent residents of Njarackal panchayath for the past one year. Those who did not give consent were excluded. The minimum calculated sample size was 950, based on a study done in Bangalore, Karnataka where the prevalence of domestic accidents in a rural community was reported to be 9.6%.[6]

A simple random sampling was done among the 6523 households in Njarackal panchayath and information from 403 households consisting of 1826 individuals was collected. The study tool was a semi-structured questionnaire used to collect details on sociodemographic factors and details of accidents. Data collection was done after obtaining consent by face to face interview with a responsible adult informant in each household about accidents which occurred inside the house or in the immediate surroundings in past one year among family members. Data was tabulated using MS Excel and analysed using SPSS version 20. Qualitative variables expressed as percentages and association found out using Chi square test. The study was done after institutional ethical clearance.

RESULTS

Majority were nuclear families (58.4%). 94.5% belonged to APL category and 86.5% lived in pucca houses (Table 1).

The prevalence of domestic accidents in the community was found to be 10.5% (9.14 – 11.95, 95% CI).

Falls were the most prevalent type of domestic accident which occurred (33.5%) followed by burns or scalds (20.4%) and injury by sharp instruments (18.8%) (Table 2).

Majority of the victims were females (66%). 30.4% of the victims had comorbidities, of which the common comorbidities reported were hypertension and diabetes mellitus (Table 3).

Most common place of occurrence was courtyard and kitchen (37.7%). 69.1% required treatment following accident, of which only 6.06% required in-patient treatment. No deaths were reported. First aid kits were available only in 38.2% of houses. The main preventive measures suggested by respondents were to be careful, to increase awareness, to take better care of old people and to be careful while dealing with pets (Table 4).

Table 1: Demographic characteristics of the study population.

Character	Frequency	Percentage
Type of family		
Nuclear	1066	58.4
Joint	669	36.6
Joint extended	91	5
No. of members in the house		
≤ 4	973	53.5
> 4	853	46.7
Gender		
Male	893	48.9
Female	933	51.1
Age in years		
≤ 5	85	4.7
6 - 18	311	17
19 - 45	746	40.9
46 - 59	373	20.4
≥ 60	311	17
Type of house		
Kutcha	164	9
Pucca	1580	86.5
Mixed	82	4.5
Point Poverty Index		
APL	1725	94.5
BPL	101	5.5

Table 2: Distribution of domestic accidents according to type of accident.

Type	Frequency	Percentage
Falls	64	33.5
Burns or scalds	39	20.4
Injury by sharp instruments	36	18.8
Animal / insect bites	23	12
Blunt injury	12	6.3
Electrocution	8	4.2
Suffocation	5	2.6
Accidental Poisoning	2	1
Drowning	1	0.5
Total	191	100

On looking at the association between sociodemographic factors and domestic accidents, gender showed a significant association with females having more of domestic accidents (Table 5).

In this study falls were found to be significantly associated with age, educational status, place of occurrence and activity during accident .Association between burns and gender, age, educational status, place of occurrence, activity during accident and time was found to be statistically significant (Table 6).

Table 3: Characteristics of victims of domestic accidents.

Character	Frequency	Percentage
Gender		
Male	65	34
Female	126	66
Age in years		
0 - 3	6	3.1
4 - 6	8	4.2
7 – 18	27	14.1
19 - 45	67	35.1
46 - 59	40	20.9
≥ 60	43	22.5
Educational status		
Illiterate	6	3.1
Literate	14	7.3
Primary/Middle/ High school	111	58.1
Higher secondary /University	54	28.3
NA [*]	6	3.1
Presence of comorbidities at time of accident		
Yes	58	30.4
No	133	69.6

*children less than 6 years.

Table 4: Characteristics of the domestic accidents.

Character	Frequency	Percentage
Place of occurrence		
Courtyard	72	37.7
Kitchen	72	37.7
Bedroom	26	13.6
Bathroom	11	5.8
Terrace	2	1
Others	8	4.2
Activity during accident		
Playing	38	19.9
Domestic work	55	28.8
Cooking	60	31.4
Bathing	11	5.8
Others	27	14.4
Time of occurrence		
Morning	89	46.6
Afternoon	46	24.1
Evening	35	18.3
Night	21	11
Site of injuries *		
Upper limb	111	58.1
Lower limb	48	25.1
Head and neck	19	9.9
Thorax and abdomen	6	3.1
Back	11	5.7
Necessity of treatment following accident		
Yes	132	69.1

	Frequency	Percentage
No	59	30.9
Place of treatment following accident		
At home	44	33.3
OP	80	60.6
IP	8	6.06
Recovery status following accident		
In recovery phase	35	18.6
Recovered completely	141	73.8
Recovered with disability	15	7.9
Death	0	0
Availability of first aid kit at home		
Yes	73	38.2
No	113	59.2
Don't know	5	2.6

* multiple response (n -195).

DISCUSSION

Out of 1826 study subjects, 191 had domestic accidents with a prevalence of 10.5% (9.14 – 11.95, 95% CI). According to literature reviews, the prevalence of domestic accidents range from 3.2%[4] to 13%.[5]

Females (66%) were more involved in accidents than males (34%). This is similar to studies done in Karnataka, Punjab and Andhra Pradesh.[6-8] The reason may be the longer duration of time spent at home and greater participation in daily home activities by female population.

Falls were the most common domestic accident in this study (33.5%) followed by burns/scalds(20.4%) and injury by sharp instruments(18.8%). Falls were the most commonly reported domestic accident in studies done in in Karnataka and Salem. [6,5]

In this study there was no significant difference in number of accidents among nuclear and joint families, while a study done in Karnataka showed more accidents in joint families.

According to the place of accidents, courtyard and kitchen had equal prevalence of 37.7% in this study while kitchen was the most frequent place in a study in Karnataka.[6]

46% of accidents occurred in the mornings according to this study while majority occurred in afternoon in a study done by Sudhir in rural India.[9] This may be because of the increased domestic activities in the houses in mornings. 30.4% of victims were suffering from comorbidities at the time of accidents.

No fatal accidents were reported in this study which was similar to study in rural Punjab.[7] A study done in a semiurban community also reported no mortality due to domestic accidents.[10] Only 38% of the victims had first aid kit at home.

Table 5: Association between sociodemographic factors and domestic accidents.

Sociodemographic variable	Domestic accidents		p-value
	Yes	No	
Type of family			
Nuclear	114(10.7%)	952(89.3%)	0.7
Joint	77(10.1%)	683(89.9%)	
No. of family members			
≤ 4	114(11.7%)	859(88.3%)	0.06
>4	77(9%)	776(91%)	
Gender			
Female	126(13.5%)	807(86.5%)	<0.001
Male	65(7.3%)	828(92.7%)	
Age			
≤18	42(10.6%)	354(89.4%)	
19 – 60	106(9.5%)	1013(90.5%)	0.09
>60	43(13.8%)	268(86.2%)	
Point Poverty Index			
APL	178(10.3%)	1547(89.7%)	0.42
BPL	13(12.9%)	88(87.1%)	

p value <0.05, significant

Table 6: Association of falls and burns with sociodemographic factors.

Sociodemographic variable	Falls		p-value	Burns		p-value
	Yes	No		Yes	No	
Gender						
Female	40(31.7%)	86(68.3%)	0.61	5(7.7%)	60(92.3%)	0.002
Male	24(36.9%)	41(63.1%)		34(27%)	92(73%)	
Age						
≤18	23(56.1%)	18(43.9%)		5(12.2%)	36(87.8%)	
19 – 60	17(15.9%)	90(84.1%)	<0.001	30(28%)	77(72%)	0.01
>60	24(55.8%)	19(44.2%)		4(9.3%)	39(90.7%)	
Educational status						
Low	52(38%)	85(62%)	0.04	21(15.3%)	116(84.7%)	0.01
High	12(22.2%)	42(77.8%)		18(33.3%)	36(66.7%)	
Occupation						
Spending more time at home	33(35.9%)	59(64.1)	0.51	15(16.3%)	77(83.7%)	0.17
Spending less time at home	31(31.3%)	68(68.7%)		24(24.2%)	75(75.8%)	
Place of occurrence						
Inside	23(21.1%)	86(78.9%)	<0.001	35(32.1%)	74(67.9%)	<0.001
Outside	41(50%)	41(50)		4(4.9%)	78(95.1%)	
Activity during accident						
Domestic work and cooking	20(17.4%)	95(82.6%)		36(31.3%)	79(68.7%)	
Playing	36(54.4%)	29(44.6%)	<0.001	2(3.1%)	63(96.9%)	<0.001
Bathing	8(72.7%)	3(27.3%)		1(9.1%)	10(90.9%)	
Time of occurrence						
Day time	58(34.1%)	112(65.9%)	0.61	36(21.2%)	134(78.8%)	0.46
Night time	6(28.6%)	15(71.4%)		3(14.3%)	18(85.5%)	

p value <0.05, significant

In this study falls had significant association with extremes of age, low educational status, during bathing and place of occurrence.

There was significant association between burns and female gender, age group, high educational status, cooking and domestic work and place of occurrence inside home. This may be because females are more involved with cooking and fire.

Limitation of the study is that data was collected about the whole family from one member which may have resulted in a recall bias.

CONCLUSION

Study indicates a 10.5% prevalence of domestic accidents. Females (66%) were more involved in accidents. Increase the awareness, specially among female population to reduce domestic accidents. Take extra care of the extreme ages as they are more vulnerable to falls. It is essential that every house has a first aid kit. As the prevalence of falls and burns are high, education should be given about the first aid of these events. Falls being the most frequent type of accident occurring, proper designing of house and surroundings is important.

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