Research Article

Prevalence and factors influencing domestic accidents in a rural area in Salem district

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Abstract

Background: Domestic accidents are global health issues. Most of the accident-related researches are focused on road traffic accidents and urban populations. Domestic accidents have not been identified till date to the similar manner as traffic and work-related injuries, mostly because they have not been efficiently calculated. Few studies are available regarding domestic accidents in India, and there are very few studies done in rural India.

Objective: To assess the prevalence of domestic accidents and the factors influencing it in a rural community in Salem district.

Materials and Methods: A cross-sectional study was done on 960 subjects by using simple random sampling technique. The study was conducted at Attayampatti, the rural field practice area of our medical college, from January to December 2014. Information regarding domestic accidents was gathered by interviewing using a structured questionnaire.

Result: A total of 125 domestic accidents were found in our study, with the prevalence of 13%. About 50.4% of domestic accidents were owing to falls, 82 accidents were seen in female subjects, 41% of accidents were seen in children younger than 5 years and adults older than 60 years. A total of 217 subjects with accidents were illiterates. About 49.7% of accidents took place in the courtyard, 56.8% of accidents took place while playing or doing domestic work, and 39.2% of accidents took place in the afternoon. Domestic accidents are more common in extreme age groups and in female subjects. The reasons may be the higher amount of time spent at home and greater participation in daily home activities. Falls being the most frequent type of accidents, proper designing of house and adequate illumination may help in reducing their occurrence.

Conclusion: To prevent and control the domestic accidents, promotion of household safety measures and creation of awareness among the community using information, education and communication (IEC) interventions have to be undertaken.

Key Words: Prevalence, domestic accidents, rural area

Introduction

The public health experts have created the term "Modern Day Epidemic" for accidents.[1] Although majority of the accidents and associated morbidity and mortality occur in the developing and underdeveloped counties,[2] information about their distribution, pattern, and predisposing factors are hardly known to the epidemiologists.[3] Most of the accident-related researches are focused on road traffic accidents and urban populations.[4] Very few cross-sectional studies have been done focusing on rural communities including Pakistan, India, and Ghana showing that domestic accidents hold a probable damage in public health sector.[5,6]

Domestic accident is an accident that happens at home or its near surrounding, and, more commonly, all accidents not associated with traffic, vehicles, and sports. Every domestic accident causes detrimental physical and mental health effects to the concerned victims and his/her family members. The victim

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experiences physical and mental stress, loss of earning capacity, and productivity. Children, especially, are more vulnerable to domestic accidents.[7] In different age groups, the type of the accidents is different. For example, elderly people are liable to accidents because of their poor vision, slow movements, osteoporosis, and osteoarthritis.[8] Women with gestation, rage, worry, or stress often experience burn, suffocation, electrocution, and cut injury. Domestic accidents are a global public health problem. In the US, household accidents constitute almost 20% of all unintentional injuries, which is the fifth leading cause of death.[9] Most importantly, with the progress of technology, the occurrence of domestic accidents is elevating even in the developing countries. People belonging to lower socioeconomic status, with underlying medical conditions, residing in poor housing conditions, and absence of proper safety measures are at greater risk of domestic accidents. Owing to domestic accidents, people may end up into economic loss, disability, deformity, and premature death.[10] Therefore, this study was done to know the burden, types, and factors contributing toward domestic accidents as there are very few studies done with respect to this.

Objective

To assess the prevalence, types, and factors influencing domestic accidents in a rural area in Tamil Nadu.

Materials and Methods

A cross-sectional study was done in the rural field practice area of our medical college in Salem district, South India. The study was conducted from January to December 2014. In order to calculate the sample size, a pilot study was done in 50 households comprising 220 subjects. The prevalence of domestic accidents was found to be 12%, with relative precision of 20% at 95% confidence interval. Sample size came out to be 956, which was rounded up to 960. Simple random sampling technique was used. Information about domestic accidents among the family members in the last 1 year from the date of survey was obtained by interviewing the head of the family or responsible adult informant using a pretested and prestructured pro forma in local language. The data were entered in Microsoft Excel sheet and analyzed using SPSS software, version 17. Tests of significance to derive statistical inference and χ^2-test were used. *P* value less than 0.05 was considered as significant.

Result

Table 1 shows the demographic characteristics of the study population. A total of 960 households were interviewed regarding the incidence of domestic accidents in the last 1 year. Among the study population, female subjects were more, and majority of them were in the age group of 19–64 years. Most of the study subjects were educated up to higher secondary level. Powerloom work seems to be the most common occupation among them.

Table 2 shows the demographic characteristics of the people met with domestic accidents in the last 1 year. Of the 960 households that were interviewed, 125 of them had met with a domestic accident in the last 1 year, which means the prevalence is almost 13%. Among the victims, majority of them were female subjects. The most common age group affected was children younger than 5 years and the geriatric people who are considered to be the vulnerable group of population. The literacy status among the victims was primary schooling, and the most common occupation among them was either student or housewife. Female gender, age group of younger than 5 years and older than 65 years, literacy status of primary schooling, students, and housewife were the demographic factors that had shown a statistical significant association with the incidence of domestic accidents.

Table 3 shows the various types of domestic accidents among the study population. It is inferred from Table 3 that the majority of accidents were falls, followed by cut injuries owing to sharp instruments. Only two cases of drowning and four cases of poisoning were reported in the entire study population, because majority of the population were children aged younger than 5 years. The geriatric age group falls seem to be the major type of domestic accidents.

Table 4 shows the various factors that influenced the domestic accidents among the study population. It is inferred from the Table 4 that majority of the accidents were taken place in the courtyard, and the activity involved was playing; both these factors showed a statistical significant association

Table 1: Demographic characteristics of the study population (*N* = 960)

Demographic variable	Number	Percentage
Gender		
Male	360	37.5
Female	600	62.5
Age (years)		
1–5	144	15
8–18	249	26
19–64	491	51.2
≥65	76	8
Literacy status		
Primary schooling	174	18.3
Middle school	219	23
Higher secondary	471	49.2
Graduate	96	10
Occupation		
Housewife	221	23.1
Student	181	19
Powerloom worker	252	26.4
Day laborer	191	20
Business	115	12

Table 2: Demographic characteristics of people met with domestic accidents (*N* = 125)

Demographic variable	Number	Percentage	*P*
Gender			
Male (*N* = 360)	43	11.9	<0.005
Female (*N* = 600)	82	13.6	
Age (years)			
1–5 (*N* = 144)	29	20.1	0.024
8–18 (*N* = 249)	22	8.8	
19–64 (*N* = 491)	58	11.8	
≥65 (*N* = 76)	16	21.0	
Literacy status			
Primary schooling (*N* = 174)	38	21.8	<0.001
Middle school (*N* = 219)	28	12.7	
Higher secondary (*N* = 471)	49	10.4	
Graduate (*N* = 96)	10	10.4	
Occupation			
Housewife (*N* = 221)	43	19.4	<0.031
Student (*N* = 181)	44	24.3	
Powerloom workers (*N* = 252)	22	8.7	
Day laborer (*N* = 191)	11	5.7	
Business (*N* = 115)	5	4.3	

Table 3: Types of domestic accidents among the study population (*N* = 125)

Types of accidents	Frequency	Percentage	*P*
Falls	63	50.4	<.0001
Burns	16	12.8	
Cut injuries owing to sharp instruments	26	20.8	
Poisoning	4	3.2	
Animal bites	14	11.2	
Drowning	2	1.6	

with the incidence of domestic accident. The other common areas were kitchen and bathroom, and the activities involved were cooking and bathing. The time factor had not shown any significant association with the incidence of domestic accident. Majority (82.4%) of the accidents required hospital treatment rather than the home remedy.

Discussion

Of 960 study subjects, 125 experienced domestic accidents in the last 1 year. In our study, the overall prevalence of domestic accident was 13%. Female gender, among the age group, the children, and the geriatric population had more commonly met with domestic accidents. Housewife, female subjects, and people who had completed only primary schooling were more prone to domestic accidents in our study. Among the various types of domestic accidents, accidental fall was the most common type in this study. Of the various other factors that had influenced the domestic accidents in our study were the place of occurrence (at the courtyard) and the activity during occurrence (playing). Majority of the accident victims required hospital-based treatment rather than the home remedy.

A study done by Ramesh Masthi et al.,[11] reported a prevalence of 9.6% in. In the study done by Sudhir et al.,[12] the prevalence of domestic accidents among the rural population was 9.7%, whereas in our study, it was 13%. Bhanderi and Choudhary[13] conducted a study on domestic accidents in a semiurban area of Gujarat; however, the prevalence was very less in their study (1.7%). This difference in the prevalence may be because the study was done in semiurban area, and duration of study was 6 months; whereas, our study was done in rural area and for a period of 1 year. In our study, falls were the most common domestic accidents, and similar results were found in the studies done by Ramesh Masthi et al.,[11] Bhanderi and Choudhary,[13] and Sudhir et al.[12] However, in the studies conducted by Avsarogullari et al.,[14] Marsh et al.,[15] and Neghab et al.,[16] burns were the most common domestic

Table 4: Factors that influenced domestic accidents (*N* = 125)

Factors	Frequency	Percentage	*P*
Place			
Courtyards	53	42.4	<0.0001
Kitchen	29	23.2	
Bathrooms	19	15.2	
Bedrooms	11	8.8	
Cattle sheds	9	7.2	
Others	4	3.2	
Activity involved during occurrence			
Playing	62	49.6	<0.005
Domestic works	12	9.6	
Cooking	29	23.2	
Bathing	19	15.2	
Others	3	2.4	
Time of occurrence			
Morning	42	33.6	0.542
Afternoon	44	35.2	
Evening	31	24.8	
Night	8	6.4	
Type of treatment given			
Home remedy	22	17.6	<0.0001
Hospital treatment	103	82.4	

accidents. This variation may be owing to difference in sociocultural practices and level of awareness. Female subjects were prone to domestic accidents more common than male subjects, which was similar to the findings of Bhanderi and Choudhary,[13] Ramesh Masthi et al.,[11] and Sudhir et al.[12] In our study, courtyard and kitchen were the common places for domestic accidents, which was similar to the findings of Shawon et al.[17] and Sudhir et al.[12] Time of occurrence of accident did not show any statistical association with the domestic injuries, which was similar to the results of the study done by Bhanderi and Choudhary.[13]

The major strength of this study was that it was a large sample and community-based study involving almost all age groups, and the limitation of the study was that it was a cross-sectional design in which the study subjects were not followed up; if so, the major bias in the study (the recall bias) would have not been occurred.

Conclusion

Domestic accident is nowadays becoming more common among rural population. Falls were the most common domestic accident seen in the study. Some important risk groups for domestic accidents were children, female, and elderly persons. Because of domestic accidents, there is economical loss to the people and in turn to the country. Therefore, in order to prevent and control the domestic accidents, promotion of household safety measures and creation of awareness among the community using information, education, and communication (IEC) interventions have to be undertaken.

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