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A Study Of Prevalence Of Domestic Accidents In An Urban Community Of Thoothukudi, Tamil Nadu, India.

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ABSTRACT

The danger of accident prevails, not only on roads but also in the home. Among non-infectious causes of ill health one of the main contributors is accidents. Within accidents, domestic accident is gaining more importance. Accidents which takes place in the home or in its immediate surroundings and more generally all accidents not connected with traffic, vehicles or sports are known as domestic accidents. The objectives is to find out the prevalence of domestic accidents in the last one year in an urban community of Thoothukudi. Study setting: Urban field practice area of Therespuram UHTC. Study design: A community based Cross sectional study. Study period: January 2022 to June 2022. Study subjects: All children aged above 1years and adults of all the age groups of both the sexes. Sample size: 255 households consisting of 1115 individuals. Sampling Method: Systematic random sampling Method of data collection: Structured questionnaire Statistical analysis: SPSS version 20.0. Results were expressed in percentages and proportions. Chi –square test was applied. The prevalence of domestic accidents was 4.5%. The most common domestic accident reported was fall (74%) followed by injuries (18%) and burns (8%). Majority (48.6%) of the falls were in the age group of 60-80 years. Among the domestic accidents victims, 73% had completely recovered, 19% were in the recovery phase and 8% had permanent disability. Falls were the commonest type of domestic accidents and were common in the age group of 60-80 years.

Keywords: Domestic accidents, Urban, Thoothukudi, Accidental fall injury

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INTRODUCTION

Domestic accidents are worldwide public health problem. Domestic accident is an accident which takes place in the home or in its immediate surroundings and more generally all accidents that are not connected with traffic, vehicle or sports [1]. Every domestic accident causes detrimental physical and mental health effects to the concern victims and his/her family members. The victim may also experience loss of earning capacity and productivity. Children, especially are more vulnerable to domestic accidents [2].

New patterns of injury attributable to domestic accidents emerge with technical or cultural change. People from lower socio-economic status with underlying medical conditions, living in poor housing conditions and lack of proper safety measures are at higher risk of domestic accidents [3]. Domestic accident cases are a special group in themselves, reflecting the character and way of living of people. Quite a new pattern of injury attributable to domestic accidents emerges with each technical or cultural change [4]. Globally injuries amount for 10% of Disability Adjusted Life Years (DALYs) lost and by 2020, this is expected to increase by 20%. In India, injuries are the second most common cause of death after 5 years [5].

The relationship between domestic accidents and human health is direct and associated with a chain of socio-economic consequences. Every domestic accident brings a varying measure of distress (physical and mental) to the victim as well as the family members. The consequences may be disastrous both for an individual and the society when the accident results in permanent disability, as the victim loses his earning capacity and may not be able to enjoy a normal active life [6].

Only a few cross-sectional studies have been conducted focusing on urban communities showing that domestic accidents possess a potential threat in public health sector. Hence the present study was conducted to estimate the prevalence and various factors associated with domestic accidents in an urban community.

METHODOLOGY

Study area

A community based cross-sectional study was conducted in urban field practice area of Government Thoothukudi Medical College which includes Therespuram Urban Health and Training Centre (UHTC).

Study Duration

From January 2022 to June 2022.

Sample size

Sample size was estimated using n= $4pq/d^2$ formula [7]. After substituting the prevalence (p) = 8.6% [8], q=91.4% and allowable error (d) = 1.72, with relative precision of 20 % at 95% confidence interval (α=0.05) in the formula, a sample size of 1062 was obtained. After adding 5% sample attrition (5% of 942 = 53), final sample size derived was 1115.

Sampling technique

Systematic random sampling was done [9]. By considering the average rural household size as 4 [10], the required number of households were 279 [1115/4]. Sampling interval was 14 [Total number of households (4010) / required number of households (279)]. In every street of the field practice area, first house was selected randomly then every 14th house was selected. Total of 255 households were interviewed to obtain a sample size of 1115.

Study participants

Those domestic accidents which have occurred during the last one year, from the date of survey and which have resulted in such damage so that incapacitated them at least for one day to carry out their routine activities, were considered in the study.

All children aged above 1year and adults who were permanent residents of the family in all the age groups of both the sexes were included in the study. Those accidents which have occurred within the house or within the micro environment were considered. Infants, psychiatric and epileptic patients, chronic debilitating bed ridden patients were excluded from the study.

Data collection tool

A Pre designed, pre- tested and semi-structured questionnaire was used for interviewing the participants.

The Questionnaire consisted of two sections as follows;

- General information (personal data, family composition and socioeconomic status)
- Specific information regarding the domestic accident. The information about the accident like when, where and how it happened. What are all the factors (environmental, human & social) influencing it and their mode of recovery and how it could have been prevented.

Statistical analysis

Data was entered in Microsoft Excel and was analyzed using SPSS version 20.0. Descriptive statistics: Results were expressed in percentages and proportions.

Analytical statistics

Association between domestic accidents and different socio-demographic variables was tested by using Chi-Square test. For the test, P-value < 0.05 was considered as statistically significant.

RESULTS

Majority (35.9%) of the study participants were in the age group of 20-40 years. Males constitute 52.2% and females 47.8%. Most of them (42.9%) belonged to the lower socio- economic class (Class IV – Upper Lower class) according to modified Kuppusamy classification for June 2021. Many (25.1%) of them were Graduates, followed by Post High School educated (18.3%) and only 4.7% were illiterates followed by children (2.8%) . Majority (83.6%) of the study participants were Hindus by religion followed by Christians (10.1%) and Muslims (6.3%). Majority of the study participants were from Nuclear families (85.6%) followed by Joint (8.4%) and three generation families (6%) (Table 1)

The Prevalence of domestic accidents in the current study was 4.5% (95% CI: 2.08-4.32). Among them, 74% were accidental falls followed by 18% accidental injuries and 8% accidental burns. (Table 2) Also in the current study, the time of occurrence of domestic accidents in current study is found to be more in morning hours from 7 am to 7 pm (70.4%).

There was high prevalence (48.6%) of accidental falls was in the age group of 60-80 years, which was statistically significant with p value <0.05. (Table 3) The common place of occurrence of accidental falls was living room (35%) followed by Yard (27%), bath room (19%) and kitchen (13.5%). Majority (73%) of them had grievous injury (restrained from their routine activity or had work loss for more than 3weeks). Among those who had accidental fall, 73% had completely recovered, 19% were in the recovery stage and 8% had permanent disability in the form of altered gait, immobility of limbs etc. (Table 4)

Table 1: Socio Demographic Profile of Study Participants

Socio-Demographic features	Number (%)
A) Age groups in Years	
1-20	272 (24.4)
20-40	400 (35.9)
40-60	382 (34.3)
60-80	57 (5.1)
80-100	4 (0.3)
Total	**1115 (100)**
B) Sex	
Male	582 (52.2)
Female	533 (47.8)
Total	**1115 (100)**
C) Literacy Status	
Illiterates	52 (4.7)
Primary School	126 (11.3)
Middle School	167 (15)
High School	178 (16)
Post High School	204 (18.3)
Graduates and PGs	279 (25)
Professors	77 (6.9)
Children (1 to 7 years)	32 (2.8)
Total	**1115 (100)**
D) Socio Economic Status	
Upper class	97 (8.7)
Upper middle class	264 (23.7)
Lower middle class	119 (10.7)
Upper lower class	478 (42.9)
Lower class	157 (14)
Total	**1115 (100)**
E) Religion	
Hindus	932 (83.6)
Christians	113 (10.1)
Muslims	70 (6.3)
Total	**1115 (100)**
F) Type of Family	
Nuclear Family	954 (85.6)
Joint Family	94 (8.4)
Three Generation Family	67 (6)
Total	**1115 (100)**

Table 2: Distribution of various types of domestic accidents

Domestic Accidents	Number (%)
Accidental Falls	37 (74)
Accidental Injuries (sharp cuts injuries)	9 (18)
Accidental Burns	4 (8)
Total	**50 (100)**

Table 3: Distribution of accidental fall according to age group.

Age groups (in years)	Accidental Fall		Total Frequency (%)
	Yes Frequency	No Frequency	
1-20	3	269	272
20-40	4	396	400
40-60	11	371	282
60-80	18	39	57
80-100	1	3	4
Total	**37**	**1078**	**1115**

$\chi^2 = 158.84, \ df = 4, \ p = 0.000$

Table 4: Distribution of accidental falls according to their place of occurrence, severity and the recovery status.

Accidental Falls	Frequency	Percentage
Place of Occurrence		
Living room	13	35.1
Yard	10	27
Bath Room	7	19
Kitchen	5	13.5
Car Parking	2	5.4
Total	**37**	**100**
Severity Grading		
Grievous injuries	27	73
Minor Injuries	10	27
Total	**37**	**100**
Recovery Status		
Completely Recovered	27	73
Recovering	7	19
Permanent Disability	3	8
Total	**37**	**100**

DISCUSSION

Prevalence of domestic accidents in the current study is 4.5% which is much higher than the prevalence found in a study conducted in a rural community of South India by Vani et al (2%)[3] and also higher than in a study done in semi urban community of Gujarat by Bhanderi et al (1.7%)[5] and Haniff et al (2.5%)[6] in Malaysia.

The prevalence of domestic accidents in the current study is found to be more in the age group of 40 to 59 years (37.9%). It is in contrast with Kommula et al (31.3%) [3] and Netra et al(40%) [8] whose findings were more in the age group of 0 to 15 years. Accidental Fall (31.8%) is found to be the commonest type of domestic accidentsfollowed by sharp cut injuries (23.2%) and burns(14.5%). This is in consistent with the findings of Bhanderi et al (71.0%)5[5], Masthi et al(43.2%) [7] and Netra et al (67.3%) [11].

The time of occurrence of domestic accidents in current study is found to be more in morning hours from 7 am to 7 pm (70.4%). This is in consistent with the findings of Kommula et al (73.6%) [3] and Netra et al (38.5%)[11]. The place of occurrence of domestic falls in the current study is found to be more in the living rooms (35%). This is in contrast with the findings of Netra et al where it was found to be in front yards (39.4%) [11].

In the current study, among the DA victims, 73% had completely recovered, 19% were in the recovery phase and 8% had permanent disability. Current study showed lower recovery rates and higher disability rates than in the studies done by Netra et al (85.6%)[11] Masthi et al [12] where 92% had recovered completely, 6% were in the recovery phase and 2% had permanent disability and Bhanderi et

al [4] where full recovery was observed in 82.6% cases and permanent disability in 2.9% subjects and Neghab et al [13] where permanent disability in only 0.05%. No death related to domestic accident was reported in the present study. Though Neghab et al [13] reported a mortality rate due to domestic accidents as 1.3%

CONCLUSION AND RECOMMENDATIONS

Falls were the commonest type of DAs found in the current study. Most of the accidental falls were in the age group of 60-80 years. This may be due to poor vision because of senile cataract, poor balance, underlying medical conditions like osteoporosis/osteoarthritis and unsafe environment such as inadequate illumination, uneven surface etc.

Prevention of domestic accidents must be based on a comprehensive approach that begins with the epidemiological surveillance of the phenomenon. So some of the measures such as giving health education regarding correction of visual impairment, home assessment and environmental modification may help in reducing the incidence of accidental falls and further studies may be conducted on background factors, initiating factors and immediate factors to find out the actual causes behind these accidents.

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