



ORIGINAL RESEARCH PAPER

Ayurveda

AN ANALYTICAL STUDY OF DEATHS DUE TO DOMESTIC ACCIDENTS

**KEY WORDS:** Domestic accidents, autopsy, FSL analysis, medico legal nature and FIR.

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ABSTRACT

**Background:** In view of the rising incidents of domestic fatalities, a detailed study was undertaken focusing on different causes and manners of injuries and deaths occurring within the house and its surroundings. During this study, thorough medical and technical investigations were considered. Ultimately public education and their awareness are important for its prevention.

**Objectives:** The present study is made to analyze pattern of different domestic accident deaths in regard to Age and Sex distribution, Residence, Place of Occurrence in the Home Method of inflicting injuries

**Methods:** The materials considered in the study are the police reports like FIR, crime Scene, Panchayatdar statement, Hospital deaths summary, Inquest report, and doctors' reports, in addition to engineering technical reports. The postmortem study of 100 dead bodies of domestic accidents was carried with analytical data during January 2004 to May 2007 at Gandhi Hospital Mortuary Secunderabad. Common variables were spot deaths against Hospital deaths, deaths in different age groups, literacy status of the victims, socioeconomic status, and marital status with urban slum and rural variation in addition to sex criterion as basic parameter.

**Result:** The results of the study showed that, the victims were more in categories of male, old aged, illiterates, low socio economic, unmarried laborers and living in urban slums. The major causes of deaths were due to injuries commonly occurring in the kitchen. Spot deaths were more than Hospital deaths.

**Conclusion:** The results obtained in the present study regarding various observations in the domestic accidents were consistent with the other studies reported at national and international levels.

INTRODUCTION:

Domestic accidents are common all over the world. In the rural areas of developing countries, domestic accidents are a serious problem. [2] Quite a new pattern of injury attributable to domestic accidents emerges with technical or cultural change. 131 Among non infectious causes of ill health, one of the main contributors is accidents. The public health experts have coined the name Modern Day Epidemic to accidents [4]. Within the accidents, domestic accident is gaining more importance among the researchers. In developing country like India knowledge about domestic accidents is less. Domestic accidents are an important public health problem and the problem is graver in rural India. Domestic accidents are one of the five leading causes of death in industrialized and developing countries. 161 Accidents can take place in wide varieties of environment; however the home too can be a most likely location. In the context of home accidents "a home" is categorized as any type of house, flat, villa, but and hostel and old age homes in rural and urban areas. The major causes of domestic accidents are Fire accidents, stove bursts, fire crackers mishaps, Lightning injuries electrical hazards, consumption of stored chemicals like insecticides, disinfectants, detergents, consumption of medicines which are of expired dates, and injuries due to scalds and dry burns. Hence, this topic of deaths due to domestic accidents at Gandhi Hospital mortuary Secunderabad, Telangana, India was conducted.

MATERIALS & METHODS:

The inquest, the First Information Report, statement recorded by police, relatives, hospital records, panchanauma, and the postmortem examination report from the FM Department were obtained. The study is made on one hundred dead bodies of the victims who died due to domestic accidents and were subjected to postmortem examination in the mortuary of the department of Forensic Medicine in Gandhi Medical College, Secunderabad between January-2004 to May-2007. From the postmortem report, data having the particulars of the family, its dwelling, and its surrounding was completed. The details about the accidents occurring in the house were included.

After collecting the above information, a data sheet is prepared and analyzed. The data is then processed to get various breakups of the information then observations are made which are compared with the available standard information in the literature previous studies in India and other countries. Ultimately the conclusions are derived based on comparison of different data obtained. The data so collected was tabulated and analyzed. Simple descriptive and frequencies were used.

RESULTS:

The number of deaths due to domestic accidents was 100, out of that 59% were male and 41% were females. Majority 34% of the deaths were of the age groups of above 60 years. The type of injury was due to inanimate mechanical force.

Table 1: Age and sex wise distribution Domestic accidents

Age	Male	Female	Total
Neonate (less than 28 days)	0	0	0
Infant (less than one year)	1	0	1
Toddler (one to three years)	9	5	14
Child (three to twelve years)	15	12	27
Adolescent (thirteen to nineteen years)	8	6	14
Adult (twenty to fifty nine years)	6	4	10
Old age (above sixty years)	20	14	34
Total	59	41	100

Majority of the victims are constituted by old age groups (34%) followed by children group (27%).

Table 2: Education status of victims of Domestic accidents

Education status	Male	Female	Total
Illiterate	22	14	36
Primary education	17	16	33
Secondary education	10	10	20
Graduation	9	1	10
Post-graduation	1	0	1
Total	59	41	100

Majority of the victims are constituted by illiterate group of person (36%) followed by people with primary education (33%).

**Table 3: Marital status of victims of Domestic accidents**

Marital status	Male	Female	Total
Unmarried	33	23	56
Married	20	14	34
Widowed	6	3	9
Divorced	0	1	1
Total	59	41	100

Majority victims were unmarried (56%) comparatively.

**Table 4: Occupation of victims**

Occupation	Male	Female	Total
Non working	12	8	20
Students	10	6	16
Laborer	25	10	35
House hold	4	14	18
Skilled laborer	7	2	9
Professional	1	1	2
Total	59	41	100

Majority of the total victims are laborers (35%) .

**Table 5: Residence of victims**

Residence	Male	Female	Total
Rural	19	8	27
Urban slum	26	25	51
Urban	14	8	22
Total	59	41	100

The incidents of domestic accidents are more in urban slums 51% followed by urban areas 22%.

**Table 6: Time of occurrence**

Type of injury	Sex	Time of injury		Total
		Day time	Night time	
Burns	Male	11	3	14
	Female	12	2	14
injuries	Male	19	6	25
	Female	7	5	12
Poisoning	Male	7	0	7
	Female	10	0	10
Electrocution	Male	2	4	6
	Female	0	0	0
Animal bites	Male	0	2	2
	Female	0	1	1
Drowning	Male	3	1	4
	Female	3	0	3
Asphyxia	Male	1	0	1
	Female	1	0	1
Total		76	24	100

Incidence of time of death is more in day time (76%) compared to night time.

**Table 7: Place of occurrence (in relation to age distribution**

Place of occurrence	Sex	Children	Adolescent	Adult	Old age	Tot al
Living room	Male	4	2	0	5	11
	Female	3	2	0	4	9
Bed room	Male	2	1	2	1	6
	Female	3	1	1	1	6
Bath room	Male	4	0	1	4	9
	Female	2	0	0	7	9
Kitchen	Male	10	3	0	1	14

	Female	7	2	3	1	13
Stairway	Male	1	0	1	5	7
	Female	1	0	0	1	2
Terrace/garden	Male	1	0	1	5	7
	Female	1	1	0	0	2
Out house	Male	0	0	0	1	1
	Female	0	0	0	0	0

The incidences of domestic accident deaths were more due to injuries (37%) followed by burns (28%) and poisoning (17%). In this total the males outnumbered the females by 13%.

**DISCUSSION:**

At present, accidents are the leading causes of death. In This study was conducted to find out the pattern of domestic accidents and deaths 34% of the individuals of age group above 60 years were injured and died. Home accidents in this age group can be explained as they are more susceptible due to decline in physical and mental functions, chronic disease and slower reflexes. Community based studies carried out at Ghana (1999), [8] Driscoll et al in Australia and Macleod et al [9] reported higher injury incidence in older people. It was observed that in the age group 5-15 years, 25.3% suffered from domestic accidents in Agarwal et al [10] study and in the present study it was 27% it can be explained on the basis of their exploratory habits. The Children are at high-risk because of their mode of reaction and impulsiveness and their lack of experience in the calculation of risk. As per the Agarwal study, Do] the percentages of deaths due to domestic accidents in age group of 15-45 years were 34.3% compared to the present. As per the EHO meeting at Bonn [11] in May 2008 the accidental domestic deaths in the age group of 0-14years was 50% which is high compared to the present study which is 6%.

In the present study, males suffered more domestic accidents compared to females the ratio was 59:41 it could because males spend quality time at home in actively repairing household items. As the per Birute Lithuania study, [12] the percentage of deaths of boys who died due to domestic accidents were 64.6% and girls were 35.4%. As per the study of Mackeskeand fetch Banbury [13] UK, deaths due to domestic accidents injuries in age group of 65 years were 18% in females and 32% in males compared to the present study which was 62% in females and 38% in males.

In the present study the deaths due to injuries were 37% followed by burns 28%, poison 17%, drowning 7%, Electrocution 6% Animal bites 3%, and Asphyxia 2% As per R. Agarwal et al study [14] it was observed that from height was a major mode of injury of 44.3%. Then followed by Mechanical injury 34.6% which is similar to the present study. As per the R. Agarwal et al [10] accidents due to burns was 13% which is lesser then the present study. The risk factors associated with burns include cooking on open fires, the practice of low-level cooking, leakage, and explosion of pressure stoves, use of unprotected open fires to deep warm during winter and unsafe storage of inflammable substances. According to the study of Dr. Nathalie Robbel in analysis of the LARES E141 date the domestic accident deaths in kitchen were 30% and in bathroom are 25% compared to the present study where the domestic accidents in the kitchen are 27% and in bathroom are 18%. As per the study of AgarwalM, Percentage of injuries deaths in kitchen it were 16.3%, in the stair case 7.3% and bathroom 2.3% compared to the present study where the percentage of deaths due to domestic injuries are 27% in the kitchen, 9% in the stair case and 18% in the bathrooms. As per study of Dr. Gbrielle Ellasabar of Germany, [15] the domestic accident deaths at staircase were 9.2% of total compared to the present study which is 9% of the total. As per the study of R. Agarwal, G Singh and K Aditya, [103 the percentage of domestic injuries in the rural areas of India, in the age group of 15-45 years were 45.7% compared to the present study which is 48.6%.

**RECOMMENDATIONS**

1. Environment — improve planning and design methods in architecture and civil masonry resulting in safer homes.

2. Improvement - the government, then non-government organizations like Indian Medical Association, rotary, lions clubs can generate a strong sense of commitment to educate the people in large scale in prevention of domestic accidents.

3. Health education-supported by safety regulation, choosing the vulnerable groups of people during vaccinations, well baby clinic and antenatal checkups, where mothers and children come to clinics.

4. Community level: sanitary inspectors can help by showing videos/audios programs, posters, pamphlets and educational ads regarding domestic accidents.

5. National level awareness: By Ministry of Health by training paramedical workers to educate people in prevention of domestic accidents. The Ministry of communication and broadcasting giving messages via mass media. The Ministry of education can prescribe two lessons in moral science study syllabus in prevention of domestic accidents.

6. Regulation and legislation: Safe house building by municipal administration to demolish unsafe houses and give mandatory instructions for safe design plans during new house constructions thus preventing domestic accidents.

**Age wise Prevention of Domestic Accidents**

- Age 0-6 months: Do not leave the child on a raised surface, as it may roll over, choke to a pillow, tumbling from cradle or asphyxiate while improper breast feeding.
- Age 1-2 years- since the child moves, walks and crawls, never leave the child alone, don't allow them in kitchen place, don't give milk when it is too hot.
- Age 2-3 years- It is a child adventurous state like climbing the steps and imitating the adult's activities. Use stair guards while climbing the steps.
- Age 3-5 years- Understands instructions, want to be independent and adventurous, so don't allow them on terrace or balcony, don't give hot milk or tea, don't burn open fires, fire crackers, electrical iron to be switched off and put in top shelf. Match boxes, candles and fire crackers are stored away safely.
- Elderly people 70-90 years- Correction of geriatric debility disorders with the treatment and physiotherapy like in osteoarthritis, overweight, over use of alcohol, poly drug therapy and regular exercise. Impaired vision is to be corrected with glasses and cataract operation done, hearing aids should be given, use of skid resistant flooring in toilets, use of stair case railings, use of lights on stair case on both sides, handle bars in toilets, timings of drugs, chairs with arms and wearing of anti-skid shoes.

**Cause wise Prevention of domestic accidents:**

Prevention of falls: Fitting of safety gates and stair guards so that the kids don't fall. Window locks used. Do not put chairs or stools below the window.

Prevention of fires and scalds: Avoid open fires, avoid cigarette smoking in bed rooms and dispose the cigarette buds properly and put the match box away from the kids. Children should not be allowed in the kitchen near the cooking place. Adjust geyser thermostat 45-50 degrees. Sudden opening of hot water is prevented.

In prevention of poisoning: Keeping medicines and insecticides out of reach of kids in a locked cupboard

**CONCLUSION**

In the present study, majority of the victims were constituted by old age groups (34%) majority of the victims were constituted by illiterate (36%) majority of the victims were unmarried (56%)

majority of the victims were laborers (35%). The incidence of domestic accidents was more in urban slum (51%) The incidence of time of death is more in day time (76%) compared to night time. The incidences of deaths due to domestic accidents were more due to injuries 37%.

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