## Original article

# A study on occurrence of indoor accidents in field practice area of UHTC in Surendranagar.

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**Abstract :**

**Background:** Indoor accidents are public health problems worldwide. The consequences of the indoor accidents may prove disastrous as it may result in liabilities and loss of productivity.

**Aims and objectives:** To study occurrence of indoor accidents in field practice area of UHTC and its association with various epidemiological factors.

**Material and methods**: *Setting and design:* Community based- Cross sectional study. Complete information from 259 households Consisting of 1360 individuals was collected through semi-structured and pretested questionnaire. Indoor accident was considered when any of these individuals had met with an accident inside the house or the immediate surroundings of the house during the last 6 months from the date of survey. *Data analyzed*: The obtained data was analyzed using simple proportion and $\chi^2$ test.

**Results***:* The incidence of indoor accidents was found to be 3.16%. The most common accident reported was fall. Accidents were reported in significantly higher proportion in extreme age groups and in females. Higher proportion of accidents occurred during morning and evening hours. About 18.60% were treated at home, 60.46% as outdoor patients and 20.94% as indoor patients. The mean duration of hospital stay was found to be 2 weeks. 1(02.32%) death related to indoor accident due to drowning was reported in the present study.

**Conclusion:** Indoor accidents were more common in extreme age group and in females. The reason may be 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, as majority of the accidents occurred during morning and evening hours in our study.

**Keywords:** Indoor accidents, Falls, UHTC area, Child, Female and Extreme age.

## Introduction:

Indoor accidents are accidents that occur in a home or its immediate surroundings and more generally, all accidents which are not connected with traffic, vehicles or sport. Indoor accidents are public health problems worldwide. The consequences of the indoor accidents may prove disastrous as these may result in liabilities and loss of productivity. Children and women are at risk in and around the home. Home injuries including burns, scald, cuts, choking by swallowing small object, poisoning, fall, drowning, animal bites and injuries due to unsafe games being played in home. Overcrowding due to rise in number of people of home and lack of awareness and poor implementation of essential safety precautions result in an increasing number of accidents.[1] It necessitates safe environment in the home and the vicinity of home, safe toys and keeping medicines and harmful substances out of reach from young children.[1]

## Aims and objectives:

To study occurrence of indoor accidents in field practice area of UHTC and

its association with various epidemiological factors.

**Materials & methods:**

The present descriptive study was conducted in field practice area of UHTC in Surendranagar district, Gujarat, from August 2011 to November 2011. Total number of houses registered under UHTC area was found to be 518. Out of this 50% houses (259 houses) were selected by simple random sampling method. Complete information from 259 households consisting of 1360 individuals was collected by interviewing the eldest person belonging to the particular household using a semi-structured, pre-tested questionnaire. If the eldest person could not be interviewed due to illness or could not answer because of old age then the next person was interviewed. Indoor accident was considered when any of these individuals had met with an accident inside the house or the immediate surroundings of the house during the last 6 months from the date of survey. Overcrowding was considered when the number of persons per room exceeded the accepted standards.[2] The collected data was tabulated and analyzed in terms of proportion using SPSS. Chi-squared test was applied to study the relationship between occurrence of accidents and different socio-demographic variables. P-value less than 0.05 was considered significant.

**Results and discussion:**

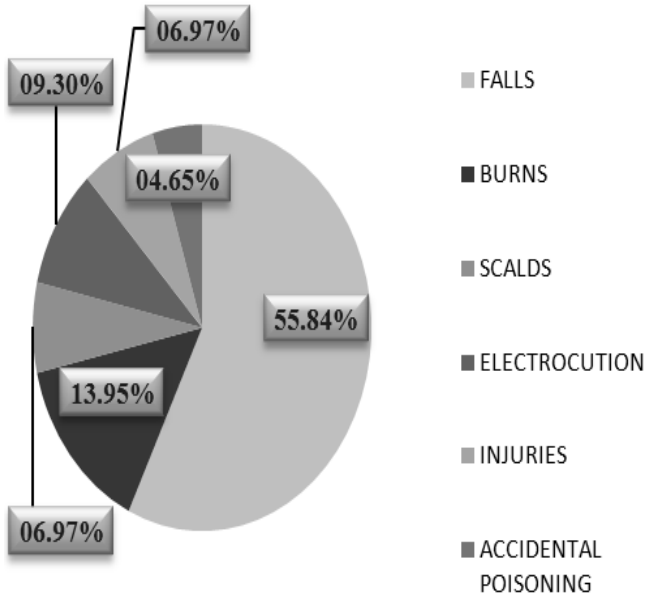
The total number of reported indoor accidents in study was 43, making the incidence 3.16%. Devroey et al. reported an incidence of 2.7% in their study done in Belgium.[3]

**Table-1: Occurrence of indoor accidents according to type. (n=43)**

Table-1 and figure-1 shows that, the most common accident reported was falls i.e. 55.84%. This category included fall on floor slipping in bathroom, fall from height and fall from stairs

| TYPES OF INDOOR ACCIDENTS | FREQUENCY NO. (n=43) | PERCENTAGES (100%) |
|---|---|---|
| Falls | 24 | 55.84% |
| Burns | 06 | 13.95% |
| Scalds | 03 | 06.97% |
| Electrocution | 04 | 09.30% |
| Injuries | 03 | 06.97% |
| Accidental poisoning | 02 | 04.65% |
| Drowning | 01 | 02.32% |
| **Total** | **43** | **100%** |

FIGURE-1: OCCURRENCE OF INDOOR ACCIDENTS ACCORDING TO TYPE (n=43)



.injuries (06.97%), accidental poisoning (04.65%) and drowning (02.32%). In accidental poisoning group one case of cleansing acid consumption and one case of rat poison consumption was reported. Both the cases were reported in age-group 0-15 years.

No case of swallowing or animal bites was reported. Neghab et al. observed higher proportion of burns and sharp objects injuries. [4]

The LARES survey of WHO Regional office for Europe reported cuts as the most frequent type of accident [5], while burn and scald were most common type of indoor accidents in the study of Chaurasia and Shukul.[6]

In our study six out of nine cases of burn and scald were found in females.

Table-2 depicts that the occurrence of indoor accidents was higher in extreme age groups. The association was statistically significant.

Table-3 shows, the occurrence of indoor accidents among the individual in the age group of 0-15 years, it was found to be marginally higher though not significant in the age group of 5-10 years.

Table-4 shows, the occurrence of falls according to age-group, higher proportion was observed in the age group of ≤ 15 years (02.16%), which was statistically significant.

**Table-2: Occurrence of indoor accidents according to age-group (n=1360)**

| AGE GROUPS (YEARS) | INDOOR ACCIDENTS | | | | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|
| | YES | | | NO | | | | | |
| | no. | percentage | | no. | Percentage | | no. | percentage | |
| | | ↓% | →% | | ↓% | →% | | ↓% | →% |
| ≤15 | 16 | 37.23 | 03.84 | 400 | 30.27 | 96.16 | 416 | 30.58 | 100.0 |
| 15-30 | 05 | 11.62 | 01.48 | 332 | 25.23 | 98.52 | 337 | 24.77 | 100.0 |
| 30-45 | 06 | 13.95 | 02.11 | 279 | 21.18 | 97.89 | 285 | 20.96 | 100.0 |
| 45-60 | 06 | 13.95 | 02.84 | 205 | 15.56 | 97.26 | 211 | 15.52 | 100.0 |
| ≥60 | 10 | 23.25 | 09.01 | 101 | 07.66 | 90.99 | 111 | 08.16 | 100.0 |
| Total | 43 | 100.0 | 03.16 | 1317 | 100.0 | 96.84 | 1360 | 100.0 | 100.0 |

Statistically significant ($\chi^2$=17.240, d. f. = 4, p=0.001)

**Table-3: Occurrence of indoor accidents in the age group of ≤ 15 years (n=416)**

| AGE GROUP (YEARS) | INDOOR ACCIDENTS | | | | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|
| | YES | | | NO | | | | | |
| | no. | percentage | | no. | percentage | | no. | percentage | |
| | | ↓% | →% | | ↓% | →% | | ↓% | →% |
| ≤5 | 05 | 31.25 | 02.81 | 173 | 43.25 | 97.19 | 178 | 42.78 | 100.0 |
| 5-10 | 06 | 37.50 | 04.76 | 120 | 30.00 | 95.24 | 126 | 30.28 | 100.0 |
| 10-15 | 05 | 31.25 | 04.46 | 107 | 26.75 | 95.54 | 112 | 26.94 | 100.0 |
| Total | 16 | 100.0 | 03.84 | 400 | 100.0 | 96.16 | 416 | 100.0 | 100.0 |

Statistically not significant ($\chi^2$=0.919, d. f. =2, p=0.6315)

**Table-4: Occurrence of falls according to age group (n=1360)**

| AGE GROUP (YEARS) | FALLS | | | | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|
| | YES | | | NO | | | | | |
| | no. | percentage | | no. | percentage | | no. | percentage | |
| | | ↓% | →% | | ↓% | →% | | ↓% | →% |
| ≤15 | **09** | 37.50 | 02.16 | **407** | 30.96 | 97.84 | **416** | 30.58 | 100.0 |
| 15-30 | **02** | 08.33 | 00.59 | **335** | 25.07 | 99.41 | **337** | 24.77 | 100.0 |
| 30-45 | **03** | 12.50 | 01.06 | **282** | 21.13 | 98.94 | **285** | 20.96 | 100.0 |
| 45-60 | **04** | 16.66 | 01.89 | **207** | 15.49 | 98.11 | **211** | 15.52 | 100.0 |
| ≥60 | **06** | 25.01 | 05.41 | **105** | 07.85 | 94.59 | **111** | 08.16 | 100.0 |
| Total | **24** | 100.0 | 01.76 | **1336** | 100.0 | 98.24 | **1360** | 100.0 | 100.0 |

Statistically significant ($\chi^2$**=12.390, d. f. =4, p=0.0147**)

**Table-5: Occurrence of falls according to presence of overcrowding (n=1360)**

| OVERCROWDING | FALLS | | | | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|
| | YES | | | NO | | | | | |
| | no. | percentage | | no. | percentage | | no. | percentage | |
| | | ↓% | →% | | ↓% | →% | | ↓% | →% |
| PRESENT | **18** | 75.00 | 03.16 | **550** | 41.16 | 96.84 | **568** | 41.76 | 100.0 |
| ABSENT | **06** | 25.00 | 00.76 | **786** | 58.24 | 99.24 | **792** | 58.24 | 100.0 |
| TOTAL | **24** | 100.0 | 01.76 | **1336** | 100.0 | 98.24 | **1360** | 100.0 | 100.0 |

Statistically significant ($\chi^2$**=9.748, d. f. =1, p=0.001**)

In our study, overcrowding was found in 568 individuals. Falls were reported in significantly higher number of individuals who were occupying overcrowded dwelling (table-5).

Female gender was found to be a significant predictor of indoor accidents (table-6). Chaurasia and Shukul also reported higher incidence of indoor accidents in females except in the age group of 50 years.[6] Neghab et al also reported similar gender difference in their study.[4]

The proportion of indoor accidents was marginally higher in families with low social class; it was not statistically significant (table-7), which was in contrast to the findings in a study by Chaurasia and Shukul. [6]

Figure-2, Considering the time of accidents, 15(34.88%) accidents occurred during the morning hours, 12(27.91%) in the afternoon, 13(30.24%) in the evening and 03(06.97%) in the night.

As far as treatment-seeking pattern is concerned, out of 43 subjects, 08(18.60%) were treated at home, 26(60.46%) as outdoor patients and 09(20.94%) as indoor patients. The mean duration of hospital stay was found to be 2 weeks (Figure-3).

FIGURE-2: OCCURRENCE OF INDOOR ACCIDENTS ACCORDING TO TIME(n=43)

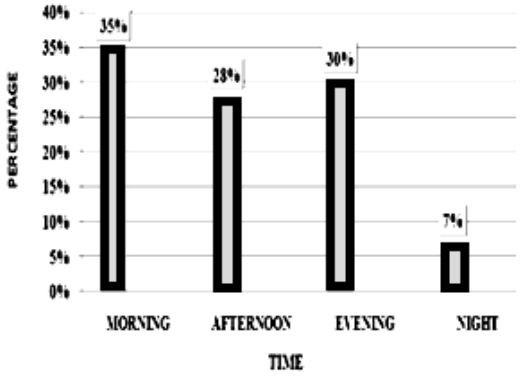


FIGURE-4: POST TREATMENT RESULTS (n=43)

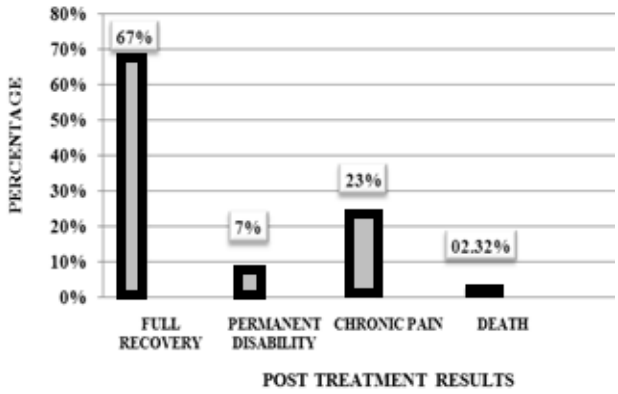



FIGURE-3: TREATMENT-SEEKING PATTERN (n=43)

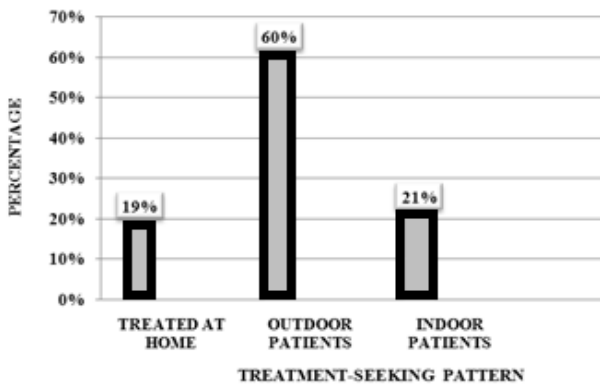



**Table-6: Gender-wise distribution of indoor accidents (n=1360)**

| GENDER | INDOOR ACCIDENTS | | | | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|
| | YES | | | NO | | | | | |
| | no. | percentage | | no. | percentage | | no. | percentage | |
| | | ↓% | →% | | ↓% | →% | | ↓% | →% |
| MALE | **15** | 34.88 | 02.00 | **735** | 55.81 | 98.00 | **750** | 55.14 | 100.0 |
| FEMALE | **28** | 65.12 | 04.59 | **582** | 44.19 | 95.41 | **610** | 44.86 | 100.0 |
| TOTAL | **43** | 100.0 | 03.16 | **1317** | 100.0 | 96.84 | **1360** | 100.0 | 100.0 |

Statistically significant ($\chi^2$**=6.549, d. f. =1, p=0.01**)

**Table-7: Occurrence of indoor accidents according social classification (n=43)**

| SOCIAL CLASS (per capita income in Rs.) | INDOOR ACCIDENTS | | | | | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|
| | YES | | | NO | | | | | |
| | no. | percentage | | no. | percentage | | no. | percentage | |
| | | ↓% | →% | | ↓% | →% | | ↓% | →% |
| I (≤3653) | **05** | 11.63 | 04.46 | **107** | 08.14 | 95.54 | **112** | 08.23 | 100.0 |
| II (1826-3653) | **05** | 11.63 | 03.06 | **158** | 11.99 | 96.94 | **163** | 11.98 | 100.0 |
| III (1096-1825) | **10** | 23.25 | 04.58 | **208** | 15.79 | 95.42 | **218** | 16.03 | 100.0 |
| IV (0548-1095) | **08** | 18.61 | 02.46 | **318** | 24.14 | 97.54 | **326** | 23.97 | 100.0 |
| V (≥547) | **15** | 34.88 | 02.77 | **526** | 39.94 | 97.23 | **541** | 39.79 | 100.0 |
| TOTAL | **43** | 100.0 | 03.16 | **1317** | 100.0 | 96.84 | **1360** | 100.0 | 100.0 |

Statistically not significant ($\chi^2$**=2.873, d. f. =4, p=0.5793**), Modified Prasad's classification (2009)[7]

Figure-4 shows, Full recovery was observed in 29(67.44%) cases of indoor accidents, while permanent disability was found in only 3(06.98%) cases in the form of short limb, while 10(23.26%) reported chronic pain after the accidents.

Thus, in our study, minimal number of indoor accidents was reported in the present study. 01(02.32%) death due was to drowning related to domestic accident was reported in the present study. Though Neghab et al. reported permanent disability rate of only 0.05%, mortality due to

domestic accidents was quite high i.e. 1.3% in their study.[5]

**Conclusions:**

The study concludes that indoor accidents are more common in extreme age groups and in females. The reason may be higher amount of time spent at home and greater participation in home activities.

Falls being the most frequent type of accidents, proper designing of house and adequate illumination may help in reducing their occurrence, as the majority of the accidents occurred during morning and evening hours in our study.

Our study reported minimal disability resulting from minimal accidents. However there was one fatal accident (02.12%).Low rate of accidents may be the result of observation made in the field practice area of UHTC where better health services are available and assessable. The low rate of accidents found in this study could be due to the area studied which was the urban field practice area where a health centre and facilities existed. So better accessibility of health services resulted in less disability.

A broader study involving the rural population may provide a clearer picture of the epidemiology of indoor accidents in our country.

**References:**


(1) K. Park, Accidents and injuries, textbook of preventive and social medicine, 21th edition, Jabalpur: Banarasidas Bhanot publisher; 2011, page-376-377.

(2) K. Park, Environment and health, textbook of preventive and social medicine, 21th edition, Jabalpur: Banarasidas Bhanot publisher; 2011, page-694.

(3) Devroey et al, Van Castern V. The incidence of home accidents is going down in Belgium, International Journal, Inj cont saf promot 2006, 13: 200-2.

(4) Neghab et al, Rajaei. FM, Habibi M Choobireh A. Home accidents in rural and urban areas of shiraz, 2006; 12: 824-33.

(5) Large analysis and review of European housing and health status (LARES): Preliminary overview, WHO Regional office for Europe, 2007.

(6) Chaurasia R, Shukul M. Home-is its safest place? Journal social science 2006; 12: 171-6.

(7) Community Medicine with recent advances by A.H. Suryakanta- 2nd edition social class by Prasad.