

Statistical evaluation of Accidental burns in rural India

[¹]Dr. Zopate Pravin R, [²]Dr. Waghmare CM, [³]Dr. Tirpude Bipin H.
 [¹][²][³] Department of Forensic Medicine and Toxicology. MGIMS, Sevagram, Wardha.

Abstract:

Background: In India, Burns are second most common cause of accidental injuries. Only limited studies have evaluated the scenario of accidental burn in rural India.

Aim: To evaluate prospectively accidental burns in a hospital situated in a rural part of central India.

Study design: The consecutive 300 cases of accidental burns admitted in our hospital were analyzed prospectively to review the scenario of accidental burn over a period of 3 years.

Results: The study revealed female (68.81%) predominance with female to male ratio of 2.2:1. Most of the victims of burn were between the ages of 21 to 30 years. Married (69%) outnumbered unmarried. Accidental burns were predominantly in young adult females. The accidents due to domestic burns were common among both domestic & non domestic burns. Most of accident due to burns sustained inside kitchen or usually occurred at the time of working in the kitchen.

Conclusion: considering the increase in incidence of accidental burns in rural areas, government and other social organizations need to put an effort for running the prevention and education programs against burn injuries.

Keywords: Burn, rural, Medicolegal, domestic.

I. INTRODUCTION

Burn injury is one of the common medical emergencies admitted to any hospital and is an important public health problem throughout the world. In India, the burn injuries are only exceeded by motor vehicular accidents as a cause of trauma related deaths. They also destroy the physique & psyche of the injured individually.

The objective of this study was to record & evaluate accidental burn injuries as they vary widely in urban & rural population & also in different region & countries. so, therefore there is need of time to have successful preventive program for their preventions.

MATERIALS AND METHOD:

The consecutive 300 cases of accidental burns, either admitted or brought for postmortem examination, over the period of 3 years were studied. Each case was followed from the time of admission to casualty or ward till its discharge or death. statistical record was prepared to record important points. It included a detailed history (age, sex, address, occupation, marital and socioeconomic status, time, place, type, manner of clothing and manner of burn)

OBSERVATIONS AND RESULTS:

A total of 300 cases of burn injury were studied over 3Yrs.

A. General information

The detailed history was obtained from the patients close relatives or friends available and the person who was present at the time of incidence or the one accompanying the victim. Information was also collected from the relatives, maternal as well as in laws, neighbors and police investigation reports. In doubtful cases, the dying declaration given by the patient in presence of the magistrate was compared with the statement given by the patient at the time of admission.

1. Sex and age

Considering the sex the males were 87 and females were 213 with a sex ratio of 2.2:1. The age group most commonly affected was 21-30 years followed by 31 -40 years.

Table 1: Distribution of accidental burns according to age group.

Age Group (in years)	Total	Male	Female
0-10	40	15	25
11-20	25	05	20
21-30	100	20	80
31-40	85	30	55
41-50	30	11	19
51-60	10	03	07
More than 60	10	03	07
Total cases	300	87	213

2. Marital status and time since marriage

Considering the marital status, it was observed that 210(70%) were married, 73(25.5%) were unmarried including the children of unmarriageable age and 07 (4.5%) were widower or widow.

3. Educational status

Most of the burn victims were literate compared to illiterate. Maximum number of victims was educated only up to primary school level.

4. Rural/urban incidence

The incidence of burn was more in rural area, both in males and females. This can be because of the main catchment area of our hospital being the rural area.

Table 3: Distribution of accidental burns according to the residential area.

Rural/urban	Male	Female	Total
Rural	48 (68%)	192(84.0%)	240(80.0%)
Urban	23(32%)	37(16.0%)	60(20.0%)
Total	71(100%)	229(100%)	300(100%)

5. Occupation

Housewives constituted the largest group comprising 150 cases (50%) of the total accidental burns.

6. Economic condition

Most of accidents due burns occurs in peoples of low standard living & poor economic status.

7. Time of sustaining burn injury

Maximum burn injuries occurred during the usual time of cooking or the working time in the kitchen.

Table 4: Time of sustaining accidental burn injury.

Time of burn	Total cases	percentage
12 Noon-4 am	44	44(14.7%)
4 pm - 8 pm	86	86(28.8%)
8 pm - Midnight	42	42(14.00%)
Midnight - 4 am	09	09(03.00%)
4 am - 8 am	21	21(07.00%)
8 am - 12 Noon	98	97(32.5%)
Total	300	300(100%)

8. Place of burn

Table 5: Distribution of cases according to the place and the type of burn

Type of burn	Sex Male/Female	Age group (years)						Total cases	
		0-10	11-20	21-30 41-50	31-40	51-60	>60		
Flames	Male	02	04	15	22	05	01	02	51
	Female	08	16	75	48	12	04	06	169
	Subtotal	10	20	90	70	17	05	08	220
Scalds	Male	20	01	03	01	03	00	00	28
	Female	15	02	02	02	00	00	00	21
	Subtotal	35	03	05	03	03	00	00	49
Electric	Male	00	00	02	06	02	02	00	12
	Female	00	02	00	00	00	00	00	02
	Subtotal	00	02	02	06	02	02	00	14
Radiation	Male	00	00	01	01	01	01	01	05
	Female	00	00	03	06	03	00	00	12
	Subtotal	00	00	04	07	04	01	01	17
Total		45	25	101	86	26	08	09	300

Most of the accidental burn cases were domestic (263 cases) and only 37 cases were non-domestic. The burn injury sustained inside the kitchen and in females working in the kitchen was highest constituting 162 cases (54.0%).

Table 6: Distribution of accidental burn cases according to place & type of burn.

Place	Sex	Flames	Scalds	Electric	Radiation	Total
Domestic						
1. Kitchen	M	25	19	00	-	44
	F	147	14	00	-	161
2. Home excluding kitchen	M	15	11	02	-	28
	F	25	03	02	-	30
Non-domestic						
1. Field/open place	M	05	00	05	02	12
	F	00	02	00	04	06
2. Place of work	M	03	00	05	04	12
	F	00	00	00	07	07
Total		220	49	14	17	300

9. Type of burn injury

Accidental burn injury by flame was common in adults and females while scalds were most common in children and males.

10. Pattern of clothing- most of accident due to burns i.e. 70% occurred due to wearing synthetic & mixed clothing.

11- Source of flame burns- most of accidents due to flames (almost fifty percentage) occurred from sources like use of inflammable liquids, kerosene stove or kerosene .

Accidental 220(73.3%) 49(16%) 14(5%) 17(6.0%)

Address for Correspondence

Dr Pravin R Zopate. MD
Assistant Professor, Dept of Forensic Medicine and
Toxicology.
MGIMS, Sevagram, Wardha

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Authors

*Dr. Zopate Pravin R, Asst.Prof, FMT
**Dr.Waghmare CM, Asst.Prof, Radiotherapy.
***Dr. Tirpude Bipin H, Prof. & HOD, FMT

