

Burn Deaths: A Study on Female Victims in Ranchi, Jharkhand

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Abstract: Burn is a major cause of death in all medico-legal cases. There is high incidence of burn injuries in the developing countries creating a formidable public health problem. Our objective of the present study is to measure the magnitude and epidemiology of burn deaths amongst females in Ranchi, Jharkhand. The study was conducted from Jan 2014 to Dec 2015 in the Department of Forensic Medicine and Toxicology, Rajendra Institute of Medical Sciences, Ranchi, Jharkhand. Out of the total 93 burn cases brought for autopsy, 70 were female burn cases. The highest number of the victims was in the age group of 21 to 30 years (34.3%). Majority of the cases were married (78.6%). The body surface area involvement of 51-60% was observed in 30% cases. Most of the cases occurred during daytime (72.9%). The survival period was >3-7 days in 44.3% cases and 91.4% victims died in the hospital. The cause of death was due to septicemia in 61.4% cases. The history regarding whether they were killed or ablaze herself was not clear by history records but findings were suggestive of killing of bride in demand of dowry could not be ruled out.

Keywords: burn, dowry, medico-legal case, septicemia.

I. Introduction

A burn is an injury which is caused by application of heat or chemical substances to external or internal surfaces of the body, which causes destruction of tissues [1]. Burns constitute a major role in mortality and morbidity in the entire world and these are the fourth most common type of trauma worldwide, following traffic accidents, falls and interpersonal violence [2]. According to the WHO, 267000 deaths were caused by fire in 2014 [3]. The majority of these cases occur in low and middle-income countries and almost half occur in WHO South-East Asia Region [3]. India ranked 56th position in the world in death due to fire with 4.68 deaths per 100,000 [3].

About 60,000 people suffer from burn, more than 50,000 treated in hospitals and about 10,000 succumb to the thermal injuries in India [4]. In India, burn injury is one of the important causes of deaths, specifically in females. The reasons for this endemic are manifold like dowry, marital infidelity, sexual jealousy, and oedipal dominance of mother in-law over the grooms, etc. [5]. Therefore, the study has been taken up to assess the pattern of female deaths in this region and factors associated with such female deaths.

II. Materials And Methods

The present study was carried out in the Department of Forensic Medicine and Toxicology, Rajendra Institute of Medical Sciences, Ranchi, Jharkhand in the period of Jan 2014 to Dec 2015 to assess the pattern of burn deaths amongst females. A thorough analysis of the history and post-mortem findings was carried out. The age, marital status of the victims, the place and time of occurrence, involvement of the body surface area in burns, survival period, cause of death, etc. were studied and these findings were statistically analyzed.

III. Observation and Results

Out of the total 93 burn cases brought for autopsy during the period of Jan 2014 to Dec 2015 70 were female burn cases [TABLE 1].

Table-1: Incidence of female death due to burn

Sex	Cases	%
Male	23	24.7
Female	70	75.3
Total	93	100

In this study, the highest number of victims were observed in the age group of 21 to 30 years (34.3%) followed by 11 to 20 years (28.5%) [TABLE 2].

Table -2: Age incidence of female burn victims

Age (years)	Cases	%
0-10	2	2.9
11-20	20	28.5
21-30	24	34.3
31-40	15	21.4
41-50	6	8.6
51-60	1	1.4
>60	2	2.9
Total	70	100

This study showed that 78.6% of the victims were married [TABLE 3].

Table-3: Marital status of the victims

Marital status	Cases	%
Married	55	78.6
Unmarried	15	21.4
Total	70	100

In the present study, we observed that 91.4% of the cases died at the hospital while the rest died at the site of incident [TABLE 4].

Table-4: Place of death

Place of death	Cases	%
Hospital	64	91.4
Site of incidence	6	8.6
Total	70	100

Most of the cases occurred during daytime (72.9%) [TABLE 5].

Table-5: Time of occurrence

Time of occurrence	Cases	%
Day	51	72.9
Night	19	27.1
Total	70	100

The body surface area involvement of 51-60% was observed in 30% cases [TABLE 6].

Table-6: The body surface area involved

Body surface area involved	Cases	%
<10%	0	0
<40%	8	11.4
41-50%	6	8.6
51-60%	21	30
61-70%	13	18.6
71-80%	3	4.3
>80%	19	27.1
Total	70	100

44.3% of the cases survived >3-7 days [TABLE 7].

Table-7: Survival period of the victim

Survival period	Cases	%
<1 hr	5	7.1
>1-2 hr	5	7.1
>24-48 hr	9	12.9
>2-3 days	9	12.9
>3-7 days	31	44.3
>1 week	11	15.7
Total	70	100

The cause of death was due to septicemia in 61.4% [TABLE 8].

Table-8: Cause of death in female burn victims

Cause	Cases	%
Septicemia	43	61.4
Neurogenic shock	18	25.7
Circulatory collapse	9	12.9
Total	70	100

IV. Discussion

The young married women showed high mortality in the present study with 34.3% cases in the age group of 21 to 30 years [TABLE 2]. This is in consistent with the findings of Vaghela et al and Subrahmanyam [2, 6].

In our study, 78.6% of victims were married [TABLE 3]. This finding is favored by the study of Mori et al [7] which observed that 62.74% of victims were married while Vaghela et al [2] found that 74.79% of victims were married.

In the present study, most of the cases occurred during the daytime [TABLE 5]. This is in contrast with the study of Shinde and Keoliya [8] who observed that out of 99 cases, 44 cases sustained burn in the night during 22:01 to 06:00 hours.

Our study showed that 44.3% victims survived >3-7 days [TABLE 7]. This could be due to the fact that 30% of the victims had 51-60% body surface area involvement [TABLE 6]. But the study by Zanjad and Godbole [9] observed that 23.5% cases 1-2 weeks and 12.2% of the female victims died within 24 hours.

The cause of death was septicemia in 61.4% cases [TABLE 8].

V. Conclusion

Most of the deaths among young married women from burns are attributed to the dowry. Dowry is a social evil. Along with the law enforcement agencies, we all have to come forward to stop this ancient custom.

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