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Original Research Article

An Observational Study on Incidence of Burns Cases among Autopsies at Tertiary Care Centre

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Abstract:

Background: Burns happen in all facets of a person's life, including industrialization, non-domestic life, and domestic life. Burns resulting from household accidents are the most common cause of significant and serious damage to the body in India. Burn deaths that are not natural occur frequently in this area. The incidence of burns in relation to sufferers' age, sex, and marital status is the study aims.

Methods: From July 2017 to June 2018, a cross-sectional observational study was conducted in the Department of Forensic Medicine and Toxicology at Patna Medical college and Hospital, Patna, Bihar. 200 burn cases out of 1700 medico-legal autopsies served as the study source material.

Results: Burns were reported to occur 11.76% of the time (200/1700). The age range of 19 to 25 years old saw the greatest percentage of burn incidents, or 26.5%. There were 160 female cases and 40 male cases out of 200 total. The ratio of men to women was 1 to 4. The highest percentage of burn cases (74%) was seen in married people.

Conclusion: The current investigation on the prevalence of burns during autopsy found that marriage, young age, and a preponderance of females were associated with a low frequency of burns.

Keywords: Burns, Autopsy, Incidence, Marital status.

Introduction

In India, burns are one of the most common health issues. Long-term burn morbidity and disability cause financial losses for the state, the family, and society at large. [1] The exact moment that fire was discovered is unknown, but it was discovered by Friction not long after man first appeared on the planet. Treatment had to start shortly after the first man suffered burns. Burning has probably been an issue for humans ever since they first appeared, especially with regard to their use of firs. These days, this issue is more significant because of growing urbanization and industrialization. In India, burns are a leading cause of mortality and morbidity.

Burn injuries frequently result in accidental, suicide, and homicidal deaths in India. While burns occur in all spheres of human existence, including home, non-domestic, industrialization, etc., fire and conflagration rank as the third most common cause of death in the United States (Dark D.F et al). [2] Burns from home accidents are the most common cause of significant and serious damage to the body in India. In certain cases, it not only results in death but also causes permanent disability, physical deformity, and disfigurement. Significant burn injuries also result in financial damage for the sufferers, their families, and society at large, as well as psychological problems. In India, burn prevention and treatment continue to be major socioeconomic and medical needs. Fire is a two-edged weapon that requires prompt treatment.

The fires have benefited and hindered the process of producing. According to Keyshawn M.H., preventing burns is not just a morally righteous but also a cost-effective measure. Without a doubt, the greatest way to manage thermal injuries is to avoid

burns. Before all of the contributing elements are addressed concurrently, no program to avoid burn accidents can be successful.

Material and Methods

From July 2017 to July 2018, a cross-sectional observational study was conducted in the Department of Forensic Medicine and Toxicology at Patna Medical College and Hospital in Patna, Bihar. 200 burn cases—out of 1700 medico-legal autopsies served as the study's source material. In all 200 cases, a thorough autopsy was conducted, samples were gathered for further examination, and viscera were sent for chemical analysis where needed. This institution serves as the premier referral center for the whole Patna region. Following the first degree relative's informed consent for the autopsy, the following basic information was recorded: name, age, sex, address, person bringing the information, time of admission, treatment administered, and time of death.

A thorough reading of the inquest and a post-mortem examination were conducted.

The age, sex, marital status, techniques, and causes of burns of the cases were examined. A different pro-forma was employed to record the results. Percentages were used to analyze the results.

Results

Out of the 1700 autopsies reported throughout the study period, 200 individuals had burns. Burns were reported to occur 11.76% of the time (200/1700).

Table 1: Age wise distribution of Burn Autopsies

Age group in years	No. of cases	Percentage
<10	8	4.0%
11-18	15	7.5%
19-25	53	26.5%
26-32	44	22.0%
33-39	43	21.5%
40-46	7	3.5%
47-53	20	10.0%
54-60	4	2.0%
>60	6	3.0%
Total	200	100.0%

Table No. 1 indicates that the age range of 19 to 25 years old saw the greatest percentage of burn cases, or 26.5%. 70% of all cases, or the majority of instances, were encountered in the age range of 19 to 39 years. Because they work close to fireplaces, these age groups are more likely to be exposed to fire-related appliances and activities, which is why the incidence is higher in these groups. In the first ten years of life, 4% of instances were also seen. Only 5% of cases occur in the fifth and sixth decades of life, which is older.

Table 2: Sex wise distribution of Burn Autopsies

Sex	No. of cases	Percentage
Male	40	20.0%
Female	160	80.0%
Total	200	100.0%

Out of 200 cases, Table No. 2 reveals that 160 were female and 40 were male. There was a 4:1 male to female ratio, indicating a majority of women.

Table 3: Distribution of Burn Autopsies according to marital Status

Marital Status	No. of cases	Percentage
Married	148	74.0%
Unmarried	46	23.0%
Widow	6	3.0%
Total	200	100.0%

According to Table No. 3, married people had the highest percentage of burn cases (74%), followed by single people (23%), and widows (3%).

Discussion: A person can be of any age, from any background or health status, at any time of day. Become a burn victim out of the blue. A burn injury can range in severity from extremely mild to very serious.

The majority of burns (90%) and burn-related deaths (98%) take place in low- and middle-income nations [4-6]. Between 163,000 and 200,000 deaths occur in India each year, adding to the global death toll [5,7]. According to the current study, 11.74% of corpses reported to a tertiary care hospital had an overall incidence of burns. Sachil Kumar [9] reported nearly identical results, citing 2695 (10.02%) as the incidence of burn deaths out of a

total of 26,880 medicolegal deaths recorded at King George's Medical University mortuary over a six-year period between 2008 and 2013. However, in European countries, the yearly incidence of serious burns ranged from 0.2 to 2.9/10,000 people and showed a declining trend over time. [9] According to Table No. 1, the age range of 19–25 years old accounted for the greatest number of cases (26.5%), followed by 26–32 years old (22%). Numerous research [10,11,12,13] revealed a comparable age incidence for burn cases in the 19–35 age range.

Table NO. 2 demonstrate that, of the 200 burn cases, there were 160 more female instances than male cases (40). The ratio of men to women was 1:4. The unfavorable social environment for women in India could be the cause of the increased frequency of burns among women. Numerous studies [10,11,12,13] also find a higher female prevalence. Table No. 3 illustrates that the highest percentage of burn cases (74%) occurred in married people as opposed to single people (23%), with widows accounting for just 3% of cases. Married couples saw a higher frequency of burns, according to Shinde AB [14] in Pune. He listed a number of factors, including marital discord, family arguments, and husband abuse, as the reason why burns occur more frequently in women. The demands for dowry and arguments between the husband and wife were identified as the causes of homicidal burn injuries

Conclusion

The current study on the frequency of burns during autopsy discovered that marriage, being younger, and having more women in the population were associated with a lower frequency of burns.

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