

Thermal Burn Deaths: A Retrospective Study on Female Victims in Bihar

Ranjay Kumar Ranjan¹, Radha Raman Singh², Rajiv Ranjan Das³,
Mukti Nath Singh⁴, Manoj Kumar⁵

¹Junior Resident, Department of F.M.T, Nalanda Medical College, Patna, India

^{2,3,5}Associate Professor, Department of F.M.T, Nalanda Medical College, Patna, India

⁴Prof. & HOD Department of F.M.T, Nalanda Medical College, Patna, India

Corresponding Author: Radha Raman Singh

ABSTRACT

Introduction: Burns are medicolegally importance as they are commonest cause of unnatural death in India. Burn is an important factor in suicide and homicide all over world. Burns remain a significant public health problem in low/middle-income countries, contributing to substantial morbidity and mortality

Aims & Objectives: To find out how thermal burn affect incidence, age, habitat, marital status, manner of death and its medico legal consequence.

Materials and Methods: This retrospective study was carried out in a tertiary care hospital during 2014 to 2018 to assess the pattern of burn deaths amongst females brought for Medico-legal Autopsy from various police stations of Patna district under F.M.T department of N.M.C, Patna in the State of Bihar. Total 540 female burn cases brought for autopsy were included in study.

Results: The highest numbers of victims were in the age group of 21 to 30 years (42.23%). Majority of the cases were from rural areas 75.19% and 81.85% of the victims were married. Mostly manner of death is accidental 57.40%. Majority of the burn victims death of the studied case were Hindu.

Conclusion: Married females of productive age group belonging to rural areas are worst affected in burn injuries. Awareness campaigns targeting safety precautions, opportunities for basic health education and a change in mindset of society towards females are necessary to curb this menace of burn injuries.

Key words: Burn, Female, Nature of Death, Bihar

INTRODUCTION

Burns injuries are caused by the application of heat such as radiant heat, flame and some heated substances like metal or glass on the surface of the body resulting in destruction of tissues. In young population, about 40% burn is fatal.⁽¹⁾ Burns are medicolegally importance as they are commonest cause of unnatural death in India. Often, the circumstances of burns are enveloped in mystery, obscurity and unreliable statements.⁽²⁾ Globally, there were over 33.5million thermal burn injuries in 2013, resulting in over 1 million years lost to disability, and approximately 237500 deaths. An estimated 90% of burn deaths, occur in low/middle-income countries.^(3,4) Burns remain a significant public health problem in low/middle-income countries, contributing to substantial morbidity and mortality.⁽⁵⁾ However, in India, where an estimated 163000 deaths occur annually due to fire-related injuries, the patterns of burns are different.⁽⁶⁾ In a study involving 222 patients who was admitted in tertiary care centre in India, the average TBSA of the 135 patients who died was 65.7% (SD 2.1%).⁽⁷⁾ The reasons for this endemic may be manifold like dowry, marital infidelity, sexual jealousy, and dominance of mother in law over the grooms, etc.

The commonest burn is accidental burn injury.⁽⁸⁾ Accidental burns are mostly

seen in females especially housewives as they spend most of their time in household works especially related to cooking. Burn is an important factor in suicide and homicide all over the world. Sometimes people after doing criminal acts like rape, murder etc and for concealing the facts, they burn the body of crime. Dowry death is a subject of immense concern in our society in spite of strict laws and amendments.⁽⁹⁾ We usually read in newspapers and see in media about the cases of women either being provoked or burnt to commit suicide by the husband and others just for the dowry.⁽¹⁰⁾ The present study has been taken up to assess the pattern of female deaths in this part of the country and factors associated with such female deaths.

Aims & Objectives

To find out how thermal burn affect incidence, age, marital status, habitat, manner of death and its medico legal consequence.

MATERIALS AND METHODS

This retrospective study was carried out to assess the pattern of burn deaths

RESULTS

Table 1: distribution of year wise cases of thermal burn death reported during the 5 year study period from 2014 to 2018 were 15.55%, 17.78%, 20.74%, 22.23%, 23.70%, respectively showing an increasing trend. This table also shows that total thermal burn death 540 which is 23.84 % of total autopsy (2265) conducted.

Year	Total autopsy case	%	Thermal Burn Death	%
2014	350	15.45	84	15.55
2015	379	16.73	96	17.78
2016	404	17.84	112	20.74
2017	531	23.45	120	22.23
2018	601	26.53	128	23.70
Total	2265	100	540	100

Table 2: The highest number of victims were in the age group of 21 to 30 years (42.23%), followed by 31-40 years in the 5 year. Most of the victims of burn deaths were recorded at 21-40 year (which is more than half of the total burn death) with peak incidence at 21-30 year. Extremes of ages are least involved as compared to adult age group as seen in table.

Age in years	Female	Percentage
11-20	62	11.48
21-30	228	42.23
31-40	140	25.93
41-50	65	12.03
51-60	45	8.33
Total	540	100

amongst females brought for Medico-legal Autopsy during January 2014 to December 2018 from various police stations of Patna district under F.M.T department of N.M.C, Patna in the State of Bihar. During this period total of 540 female burn death cases were recorded out of 2265 medico-legal postmortem conducted. Total 540 female burn cases brought for autopsy were included in study. Controversial cases were excluded from the study. Information was collected through a pre-tested questionnaire from victims' relatives, perusal of hospital records.

Data Collection and Statistical Analysis

The data was recorded in the proforma drawn up specifically for the purpose of this study, checked manually for correction of some minor errors like digit mistake, wrong unit of measurements, data format mistakes etc.

The data was put in MS Excel spread sheet and statistical analysis performed using SPSS (Statistic Package for Social Sciences) version 20.0 software. and are analysed in the tables and figures.

Table3: Describe the marital status of the studied victim showing married female (81.85%) outnumbered the unmarried female (18.15%).

Marital Status	Female	Percentage
Married	442	81.85
Unmarried	98	18.15

Table 4: show regarding manner of death, accidental 57.40%, suicidal 23.14%, unknown 12.60% and homicidal 6.85%.

Manner	Number of females	Percentage
Accidental	310	57.40
Homicidal	37	6.85
Suicidal	125	23.14
Natural	nil	0.00
Unknown	68	12.60

Table 5: Show that majority of studied victims like 75.19% were from rural area, 24.81% were from urban area.

Habitat	Number of females	Percentage
Rural	406	75.19
Urban	134	24.81

Table 6: Show that majority of the burn victims death of the studied case like 65.19% were Hindu, 15.93% were Muslims, 10% were Christians and 8.88% belongs to other religions.

Religious	Number of females	Percentage
Hindu	352	65.19
Muslims	86	15.93
Christians	54	10
Others	48	8.88

DISCUSSION

During the 5 year study period from 2014 to 2018, incidence of burn were 15.55%, 17.78%, 20.74%, 22.23%, 23.70%, respectively showing an increasing trend. Females were mostly suffered burn injuries as they spend most of their time in the household activities such as cooking food, boiling water, making tea, etc. The age group having maximum number of deaths due to burn is 21-30 years (42.23%). This age group is the most preferred for marriage. Similar findings were shown in other studies. (11,12,13)

In this study, it was observed that 442 (81.85%) cases were married and only 98 (18.15%) were unmarried. Similar finding was also suggested in other studies. (14,15) Majority of victims were married might be because of their involvement in cooking. Dowry deaths may be another important factor. Among the manner of death, accidental (57.40%) is more common than suicidal (23.14%) and homicidal (6.85%). Other studies also have similar findings. (16,17) In present study most of the burn death belongs to rural areas (75.19%) than urban areas (24.81%). Another study also suggested that rural burn death predominant than urban. (18) As we know that in rural areas as no proper equipment available for cooking and another work related to fire, so female are more susceptible for burn injuries. Many victims were related to the Hindu community (65.19%) as compared to Muslims (15.93%) and Christians (10%), this findings were similar to the findings of previous studies. (19) This may be due to the fact that

in this part of the world Hinduism is the most commonly followed religion, leading to increased incidence among Hindus.

CONCLUSIONS

Married females of productive age group belonging to rural areas are worst affected in burn injuries. Regarding manner of death most of the case was accidental. Majority of the burn victim's death on the studied case was Hindu. High mortality in young married women from burns may be attributed to dowry in rural area. Awareness campaigns targeting safety precautions, opportunities for basic health education and a change in mindset of society towards females are necessary to curb this menace of burn injuries.

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