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# Socioeconomical Characteristics of Unnatural Death Due to Dry Burn in Varanasi; Uttar Pradesh; India

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**Abstract:** ***Burn injuries are dry thermal injury caused due to contact with dry heat such as flame, radiant heat or some heated solid substance like metal or glass, to the body surface. Unnatural death- is a category used by coroners and vital statistics specialists for classifying all human deaths not properly describable as death by natural causes. The aim of my study is to find out how dry thermal burn affects education, occupation, income, and socioeconomic status and to highlights problem regarding dry thermal burn deaths. Present prospective study was carried out on the unnatural burn death cases brought by police to the Department of Forensic Medicine, Institute of Medical Sciences, Banaras Hindu University. Total number of burn cases recorded for study during this period were 450 i.e. 14.29%. Majority of the burn victims (30%) had uneducated i.e. illiterate. Show that most of the victims were housewives 6711% followed by students 11.33%. Most of the victims were from upper lower SESS 245 cases i.e. 54.44%. Educating the peoples regarding safety measures through various programme like television, radio, newspaper, warning label and cautionary information about accompanying the sale of gasoline, kerosene or petrol into any container.***

**Keywords**: Unnatural death; Dowry death; Burn; Forensic medicine; Socioeconomic status

## 1. Introduction

**Burn injuries** are dry thermal injury caused due to contact with dry heat such as flame, radiant heat or some heated solid substance like metal or glass, to the body surface **[1].** The reason behind this action may be personal, domestic, occupational or social tragedy and more recently dowry deaths. Autopsy has previously been shown to be a useful retrospective diagnostic tool; however we challenge its reliability as a result of our study **[2].** Scene Visit-As indicated and felt necessary and crime Scene evaluation report by Police as necessary **[3]. Thanatology:** deals with death in all aspects. Section 46 IPC death denotes death of a human being unless the contrary appears from the context. Registration of birth and deaths act section 2(b) defines death as permanent disappearance of all evidence of life at any time after live birth has taken place. **Natural** death where a lesion is found at autopsy which is incompatible with life and which is known to cause of death Reddy, 2012). **Unnatural death**- is a category used by coroners and vital statistics specialists for classifying all human deaths not properly describable as death by natural causes **[4].** Socio-epidemiological aspects **[5]** based on Kuppuswamy's socio-economic status scale. All community based studies focus on socioeconomic stratification as this is the key to understanding affordability of health services, amenities and purchasability. When it is taken as a summation of education, occupation and income it reflects the value system expected for that level of education and occupation. Income is parallel to standard of living. Socio Economic Status (SES) is established determinant of health. Kuppuswamy's socioeconomic status is an important tool in hospital and community based research in India which was originally proposed in 1976. Limitation and utility: There is an overemphasis on income (no scale is ever complete in assessing actual SES and they are only at the best surrogates and generates uniformity in spite of limitations) rather than educational and occupational factors, but nevertheless income commensurate with education and occupation. This speaks about the utility of Kuppuswamy scale; the revision enables and equips community related scientists in their quest for socioeconomic status.

| *Total Score* | *Socioeconomic Class* |
|---|---|
| 26-29 | Upper (I) |
| 16-25 | Upper Middle (II) |
| 11-15 | Middle/Lower middle (III) |
| 5-10 | Lower/Upper lower (IV) |
| 5 | Lower (V) |

## 2. The Aim of the Study

To find out how dry thermal burn affect education, occupation, income, and socioeconomic status. To highlights problem regarding burn deaths.

## 3. Material and Method

Present prospective study was carried out on the unnatural burn death cases brought by police to the Department of Forensic Medicine, Institute of Medical Sciences, Banaras Hindu University, from Varanasi itself and nearby districts and western part of Bihar and Madhya Pradesh for treatment then if death at Varanasi in different hospital occur then the dead body after inquest send to institute of medical science Banaras Hindu university for medico-legal autopsy examination. Study data was collected for the duration from 1st January 2013 to 30 June 2014. During this period total of

450 burn death cases were recorded out of 3149 medico-legal postmortem conducted. Data was analyzed prospectively in respect of incidence of burn deaths in, education, occupation, income, and socioeconomic status and other relevant data.

## 4. Results and Observation

**Table 1**: Shows the distribution of number of burn cases during the study periods, total number of different autopsy cases were 3149, total number of burn autopsy were 600 i.e. 19.05%, total number of burn cases recorded for study during this period were 450 i.e. 14.29%, which forms a considerable bulk and draws attention to the grievousness of this problem.

**Table 2: S**hows that distribution of burn on the basis of education level with gender among study group (N=450), a majority of the burn victims (30%) had uneducated i.e. illiterate, followed by education obtained up to junior high school level cases were 93 i.e. 20.67%. Primary school level includes 13.33%. $X^2$ = 13.91; DF = 9; P = 0.13, find that there is no significant association between education level and gender.

**Table 3: S**how that most of the victims were housewives 67.11% followed by students 11.33% and house related work victims include 5.11%, Business and labor include each 3.11%.

**Table 4 and Graph1:** Shows that distribution of burn cases on the basis of socioeconomic status scale among study group (N=450). Most of the victims were from upper lower SESS 245 cases i.e. 54.44%,followed by upper middle 176 cases i.e. 39.11%.Burn cases in upper SESS were nil.

## 5. Discussion

### 5.1. Incidence

In our study it is observed that incidence of death due to fatal burns is 600 in No. i.e. 19.05 % of total cases collected from 1 January 2013 to 30 June 2014,which is the second commonest cause of death next to road traffic accidents. Every year there is slight increase in burn death cases because numbers of patient are also increasing every year.

In a previous study by **[7]** he found that deaths due to burning accounted for 25.41% of the total medico legal autopsy deaths cases which was greater than the present study.

In another study done by **[8]** it was observed that death due to burns accounted for 18.20% of all medico legal autopsy cases which was more or less similar to present study. This finding is consistent with the study of [**9, 10, and 11].**The difference in the percentage is due to differences in the region from where study was carried out. Again it indicates that burn autopsies comprises of major bulk of medico–legal autopsies in India.

The present study is in conformity with the study conducted by **[7, 8].** Burn has been reported to be the second most common cause of death in all medico legal cases. Existing dowry system plays its own part in such deaths **[12].**

### 5.2. Occupational Variation

Table 3: In present study it was observed that most of the victims were housewives 6711% followed by students 11.33% and house related work victims include 5.11%, Business and labor include each 3.11%. Other study finds that housewives predominated comprising of 56% cases, 6% cases of laborers and 4% cases were students **[6].** The present study was in consistence with studies of above mentioned authors due to involvement of females in the kitchen related work and Dhibri lamp or Deep Laltern lightning.

### 5.3. Education Level

Our study (Table 2) showed that distribution of burn on the basis of education level with gender among study group (N=450), a majority of the burn victims (30%) were uneducated i.e. illiterate, followed by education obtained up to junior high school level cases were 93 i.e. 20.67%. Primary school level includes 13.33%. Education appears to raise consciousness, understanding and independence in women, strengthening them sufficiently to look into matter and think of before bold step in the form to commit suicide by any means.

Our findings were in conformity with those of other studies which were done in various other regions of India. Illiterates persons involved in major incidence amounting to 43.75%. Interestingly, the incidence of self-immolation decreased as the level of education increased. Of this series, 75% of the women had less than a grade school education **[13],** Similarly, **[14]** observed 35% of her cohorts of 1200 Indian women were illiterate while 6% had college level education. Education appears to raise consciousness and independence in women, strengthening them sufficiently to see escapes other than suicide.

Different from the present study that a majority of the victims had up to primary level education, thus reflecting a minor improvement in their education status as compared to the previous studies which were conducted in this region, which reported higher burn incidences among illiterate victims. Although the uneducated victims still amounting (15.3%) but 4.0% of the burn victims were also observed to be graduates **[15].** A majority of the victims had up to primary level education, thus reflecting a minor improvement in their education status as compared to the previous studies which were conducted in this region, which reported higher burn incidences among illiterate victims [16]. Although the uneducated victims still amounting (15.3%) but 4.0% of the burn victims were also observed to be graduates. Our findings were in conformity with those of other studies which were done in various other regions **[17**].

### 5.4. Socioeconomic Status

Table 4: Showed that distribution of burn cases on the basis of socioeconomic status scale among study group (N=450). Most of the victims of burn death were from upper lower

SESS 245 cases i.e. 54.44%, followed by upper middle 176 cases i.e. 39.11%. Not single cases recorded from the upper SESS group.

The high incidence of victims among rural areas is due to the reason that majority of Poor Indian population belongs to rural parts having limited and unsafe cooking measures. Although in most of the parts of India the cooking is done by using wood and kerosene oil. The housewives work in the kitchen with the hazard of being exposed to the open fire. The use of open and unguarded cooking fire is very common in the low socio economic, agricultural and rural Indian society due to the cost factor. The low socio economic status, large families, small living space, stove and Chulha at floor level collectively increases the risks for these unfortunate incidences **[12].**

## 6. Conclusion

### 6.1 Education

Educating the peoples regarding safety measures through various programme like television, radio, newspaper, warning label and cautionary information about accompanying the sale of gasoline, kerosene or petrol into any container. The majorities affected are females and most of the burn accidents are preventable by taking extra care in kitchen. Hence, housewives should be target for education in prevention of burns. To check such suicides following measures are recommended. Increase the standard of education amongst women making them more independent economically and mentally. Legislation passed by the government to abolish the dowry related crimes. Establishment of voluntary associations to spread anti-dowry feelings amongst the masses

### 6.2. Socio-Economic Measures

Mobilizing masses against the despicable practice - People should be persuaded by audio-visual shows / public notices / columns in newspapers/various ways of media, proclaiming dowry to be not only illegal and immoral but also uneconomical and hazardous in long run for the person who demands it. More and more grounds should be gained in nearly every possible sectors of day to day life to mobilize the opinion against the magnitude, gravity and ill effects of practice of dowry on society.

### 6.3. Promoting Women Liberation

More and more institutions should be created providing education to women exclusively. Vocational training, job oriented courses should be provided through these institutions, so that it creates more job potentials for women and that they become economically independent and free from all socio-cultural bandages.

### 6.4 Running Anti-Dowry Campaigns

These can be effectively run through various NGO's, welfare organizations, academic and industrial organizations with an aim to impress on the women in general to resist all pressings which simply turn them into chattels. At least a day, if not a weak, should be declared and observed as "Anti-dowry day". Serious multiple and prolonged efforts shall be made by all leaders - whether social / political / religious to avoid the greed and desire of men in general to achieve wealth through alternative and easy means.

### 6.5 Social Boycott

Costly and ostentatious marriage rituals should be discouraged and society should boycott the tainted man and their families in all future marriage negotiations.

### 6.6 Counseling / Guidance

Centers shall be developed to provide free counseling to the families and newlywed couple about their expected problems and their solutions in initial years of their interaction and formative years of new social and familial relationship so that story of their rest of the life in their new role is nicely scripted.

## 7. Acknowledgement

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## 8. Funding Source

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## 9. Ethics Statement

The present study was approved by “Institutional Ethics Committee” of Institute of Medical Sciences, Banaras Hindu University. All the information has been taken under consideration of medical ethical committee.

## 10. Conflict of Interest

Nil

## 11. Tables and Charts

**Table 1:** Distribution of **incidence** of burn autopsy:

| Total number of different autopsy cases | Total number of burn autopsy cases | % of total number of burn autopsy cases | Total number of burn cases for study | % of total number of burn cases for study | Total No. of autopsy due to other cause | % of total No. of autopsy due to other cause |
|---|---|---|---|---|---|---|
| 3149 | 600 | 19.05 | 450 | 14.29 | 2549 | 80.95 |

**Table 2:** Distribution of burn on the basis of **education level with gender** among study group (N=450):

| Education | Total No. of cases | % Total No. of cases | No. of Males cases | % of Males cases | No. of Females cases | % of Females cases |
|---|---|---|---|---|---|---|
| Illiterate | 135 | 30.00 | 21 | 25.93 | 114 | 30.89 |
| Primary | 60 | 13.33 | 12 | 14.81 | 48 | 13.01 |
| J.H.S | 93 | 20.67 | 12 | 14.81 | 81 | 21.95 |
| H.S | 41 | 9.11 | 9 | 11.11 | 32 | 8.67 |
| Intermediate | 76 | 16.89 | 17 | 20.99 | 59 | 15.99 |
| Graduate | 29 | 6.44 | 5 | 6.17 | 24 | 6.50 |
| Postgraduate | 3 | 0.67 | 0 | 0.00 | 3 | 0.81 |
| Professions | 1 | 0.22 | 1 | 1.23 | 0 | 0.00 |
| Unknown | 3 | 0.67 | 2 | 2.47 | 1 | 0.27 |
| Preschool children's | 9 | 2.00 | 2 | 2.47 | 7 | 1.90 |
| Total | 450 | 100.00 | 81 | 18.00 | 369 | 82.00 |

**Table 3:** Distribution of burn cases on the basis of **occupational status** of victim among study group (N=150):

| *S. No.* | *Occupational status of victim* | *Total No. of cases* | *% of total cases* |
|---|---|---|---|
| 1. | Auto driver | 2 | 0.44 |
| 2. | Business | 14 | 3.11 |
| 3. | Bunker (Weaver) | 4 | 0.89 |
| 4. | Farmer | 4 | 0.89 |
| 5. | Government employee | 9 | 2.00 |
| 6. | Home related work | 23 | 5.11 |
| 7. | House wife | 302 | 67.11 |
| 8. | Labor | 14 | 3.11 |
| 9. | Pujari | 2 | 0.44 |
| 10. | Rajgeer | 2 | 0.44 |
| 11. | Student | 51 | 11.33 |
| 12. | Unknown | 3 | 0.67 |
| 13. | Other( Bhuja, Electrician, Bed ridden, Rickshaw puller, Social worker,) | 10 | 2.22 |
| 14. | Preschool children's | 10 | 2.22 |
| | Total | 450 | 100.00 |

**Table 4:** Distribution of burn cases on the basis of **socioeconomic status** among study group (N=450):

| *Socioeconomic Status Scale (SESS)* | *Total No. of cases* | *% of total cases* |
|---|---|---|
| Upper | 0.00 | 0.00 |
| Upper middle | 176 | 39.11 |
| Lower middle | 23 | 5.11 |
| Upper lower | 245 | 54.44 |
| Lower | 3 | 0.67 |
| Unknown | 3 | 0.67 |
| Total | 450 | 100.00 |

**Graph 1:** The graphical representation of the above discussed data is shown here under.

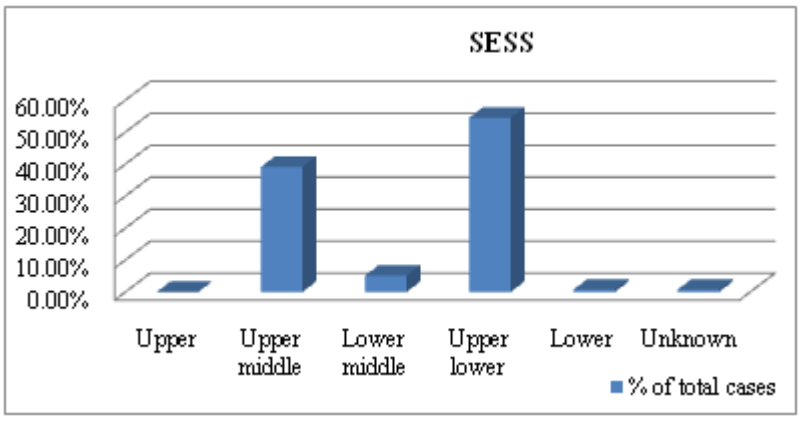


**Figure 1:** Column diagram shows that distribution of burn cases on the basis of Socioeconomic status among study group (N=450).

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