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ORIGINAL ARTICLE

THE PATTERN OF UNNATURAL DEATHS IN FEMALES IN MAHARASHTRA

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ABSTRACT

The occurrence of unnatural deaths in females is a reflection of the prevailing social structure and the state of mental health of the society. Today, in the age of social media, we are discussing the liberalisation of women's empowerment. However, it is important to bear in mind that there has been an increase in crime against women in our society. The present study analyses the different causes of unnatural death and the factors that influence them.

The maximum number of study cases, i.e., 49 (24.02%), were from the 21-30 age group. 53.43% of cases were reported from urban areas. Most unnatural deaths occurred due to road traffic accidents (39.71%). Amongst the manner of death, accident (59%) was the most common, followed by suicide (33%) and homicide (8%). Amongst suicidal deaths, poisoning was the most common cause of death (44.78%), followed by hanging (28.36%). The family quarrel was the most common reason for both suicides (31.34%) as well as homicide (47.06%). The husband was the perpetrator in 64.71% of cases of homicide. A hard, blunt object was used as a weapon in the majority of cases of homicide (47.06%).

Most of the cultural and socio-economic factors in a particular country are generally linked to the cause of female deaths. Data related to female deaths in a specific geographical area can reflect the law-and-order situation. The current study will attempt to create societal awareness, thereby improving the prevailing situation.

Keywords: *Accident; homicide; suicide; unnatural female deaths*

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INTRODUCTION

Death can be an outcome of any natural disease or unnatural causes. Unnatural deaths include those due to road traffic accidents (RTA), poisoning, burns, assault, hanging, electrocution, drowning, falling from a height, strangulation, lightning, etc. Unnatural deaths affect the family and community both psychologically and socially[1]. Despite the increasing liberalisation of women's rights over the past two decades, crimes against women are also on the rise. Especially in a male-driven society, females have always been the victims. This prevails in every country regardless of

social standing or class[2]. In the modern era, more and more women from different parts of society are coming out of the confines of their homes for studies, jobs, and social work, which in turn could have contributed to the recent phenomenal spurt in crimes against women. This has become a staggering problem for today's society, law enforcement authorities, and the judiciary of the country. This study attempted to investigate the percentage of unnatural deaths among women in our region to develop preventive strategies to minimize such cases in the future[3]. The unnatural death of a female usually affects the lives of her family. The reporting of injuries due to trauma among females is inadequate worldwide, and there are very few studies conducted in this area[4].

Mortality trends among women reflect the region's dominant social structure and mental health status. Many cultural and socioeconomic factors in a country are often implicated in the causes of women's death. Data on women's deaths in a particular geographical region can reflect its law and order[5]. Through this research, we can know the various influencing factors involved in women's deaths and what percentage of deaths in women are due to unnatural causes.

METHODS

This study was a single-centered, retrospective study of unnatural female deaths that was presented to one of the two government tertiary healthcare centers in the city of Maharashtra, India, from January 2017 to December 2018. All cases of unnatural female deaths subjected to autopsy in our center during the period from January 2017 to December 2018 were considered for the study. Bodies with advanced decomposition were excluded from the study. A total sample of 204 deaths were included in this study.

A standardized proforma was used for the collection of data during the postmortem. Details regarding the history of the incident, the deceased's age, socio-economic background, level of education, occupation, marital status, and rural/urban residence status were collected. Information was obtained from the investigating officials and relatives/friends of the deceased. Data analysis was done using Microsoft Excel version 2019 and Open Epi info version 7.2.2. Ethical committee clearance was granted by the Institutional Ethics Committee (IEC), Department of Pharmacology, Government Medical College, Nagpur, India. Confidentiality was maintained.

RESULTS

Distribution of cases according to the age of victims

Table 1: Distribution of cases according to the age of victims

Age Group	No. of Cases	Percentage
0-10	5	2.45
11-20	21	10.29
21-30	49	24.02
31-40	46	22.55
41-50	37	18.14
51-60	23	11.27
61-70	13	6.37
71-80	5	2.45
81-90	4	1.96
91-100	1	0.49
Total	**204**	**100.00**

The majority of the deaths were from the 21-30 years age group (n=49, 24.02%) including 5 cases (2.45%) from the 0-10 years age group. A single case was observed in the 91-100 years age group. (Table 1).

Distribution of cases according to marital status and duration

The majority of the deceased were married (n=149, 73.04 %), with most of them (n=80, 39%) being married for more than 15 years, followed by 22% for 0-7 years and 20% for 8-14 years.

Among the study population, 19.12% had been unmarried (n=39), 6.86 % widowed (n=14), and 0.98% divorced (n=2).

Distribution of cases according to the area of residence

The majority of the deceased (n=109, 53.43%) were from urban areas, whereas 95 (46.57%) had resided in rural areas.

Distribution of cases as per the socioeconomic strata

Most of the deceased had belonged to the upper lower class (n=87, 42.67%) followed by the lower class (n=46, 22.55%), lower middle class (n=40 19.61%) and upper middle class (n=23, 11.27%). Only a very few of the deceased in the study population were from the upper class (n=8, 3.92%).

Distribution of cases according to the literacy

The majority of the deceased (n=88, 43.14%) had obtained primary education, whereas 72 (35.29%) had obtained secondary education, 28 (13.73%) were graduates and 3 (1.47%) were postgraduates. However, 13 (6.37%) of the deceased had been illiterate.

Distribution of cases according to the occupation

The majority of the deceased were housewives (n=91, 44.61%). 26.96% of the deceased (n=55) were employed, 14.22% (n=29) were farmers, and 12.25% (n=25) were students. The occupation status of 4 (1.96%) females was not known.

Distribution of cases according to the manner of death

Accidental deaths were more common (n=120, 59%), followed by suicide (n=67, 33%) and homicide (n=17, 8%).

Table 2: Distribution of cases depending on the type of accidental death

Type of Accident	No. of Cases	Percentage
Road traffic accident (RTA)	81	67.50
Burn	24	20.00
Trauma other than RTA	4	3.33
Poisoning	4	3.33
Animal Bite	3	2.50
Drowning	2	1.67
Electrocution	1	0.83
Choking	1	0.83
Total	120	100.00

Amongst accidental deaths, RTA (n=81, 39.71%) was the most common, followed by burns (n=41, 20.10%). Poisoning and trauma other than RTA, like falls from height, were reported in 4 cases (3.33%). Other causes of accidental deaths were animal bite (n=3, 2.5%), drowning (n=2, 1.67%), electrocution (n=1,0.83%), and choking (n=1, 0.83%) (Table 2).

Table 3: Distribution of cases depending on the type of suicidal death

Type of Suicide	No. of Cases	Percentage
Poisoning	30	44.78
Hanging	19	28.36
Burning	14	20.90
Drowning	4	5.97
Total	**67**	**100.00**

Amongst suicidal deaths, poisoning (n=30, 44.78%) was the most common method of suicide, followed by hanging (n=19, 28.36%), burning (n=14, 20.9%), and drowning (n=4, 5.97%) (Table 3).

Table 4: Distribution of cases depending on the type of homicidal death

Type of Homicide	No. of Cases	Percentage
Assault by blunt weapon	8	47.06
Assault by sharp weapon	5	29.41
Burn	3	17.65
Neck compression	1	5.88
Total	**17**	**100.00**

Amongst homicidal deaths, the most common method employed was assault with a blunt weapon (n=8, 47.06%), followed by sharp weapon (n=5, 29.41%), burning (n=3, 17.65%), and neck compression (n=1, 5.88%) (Table 4).

Reasons attributed to suicide and homicide

The most common reason for suicide was a family dispute (n=21, 31.34%), illness (n=14, 20.9%), conflicts in a love affair (n=10, 14.93%), rage (n=3, 4.48%), and extramarital affair (n=1, 1.49%). In 26.87% of the cases, no reason was known (n=18).

The most common reason for homicide was again family dispute (n=8, 47.06%) followed by rage (n=7, 41.18%), extramarital affair, and quarrel with another person (n=1, 5.88%). The husband was the perpetrator in the majority of cases of homicide (n=11, 64.71%), followed by the father (n=2, 11.76%), brother-in-law, mother, and acquaintance (n=1 each, 5.88%).

DISCUSSION

Mortality among women has long been a concern for policymakers and health organizations. Greater emphasis is generally given to maternal mortality, which has been linked to development indices that are used to assess the level of development of countries[6]. The present study shows the maximum percentage of unnatural female deaths in the 3rd decade, i.e., 49 cases (24.02%). Similarly, findings of the study by Kumar TS et al. (2004)[7] showed that the maximum number of cases of unnatural deaths occurred in the 3rd decade. However, in some studies, 21-30 years was the most commonly involved age group[3,8].

In the present study, the majority of females (n=149, 73.04%) were married as compared to unmarried females (n=14, 6.86%). This finding is consistent with other studies in the literature[9,10,11].

The present study shows that a maximum number of females (n=80, 39%) belonged to the group with a marital duration of above 15 years, followed by the group with a marital duration of 0-7 years (n=44, 22%). This is in contradiction with other studies where the majority of married females died within the first 7 years of their marriage[9,12]. The reason for this may be the trend of dowry death, which is reducing in the modern demography that is reflected in the present study.

The present study shows that the maximum number of cases of unnatural female death were from urban areas (n=109, 53.43%). This finding is in contradiction with other studies[8,12,13,14]. The reason may be due to the present study being conducted in a metropolitan area where more and more people are coming with their families for a better chance of job opportunities and a better life.

The present study shows that the maximum number of cases were from the upper lower class of socioeconomic status followed by the lower class. These findings are comparable with other studies[8,15].

According to the present study, 43.14% of female victims had primary education, 39.29% of female victims had secondary education, 13.73% of females had graduated, and 1.47% were post-graduated. It is clearly shown in this study that as the educational status of females increases, the death rate decreases. This finding is comparable with other studies[5,8,11,12].

In the present study, housewives formed the maximum number of victims, which is 44.61%; 26.96% of females were employed, and 12.25%

of females were students. This finding coincides with the other studies[8,11,12,16].

As per our study, the most common manner of death is accidental, followed by suicidal deaths, and homicidal deaths are the least common, which is comparable with the other studies[3,4,8,9,12].

The most common cause of death was RTA-related trauma, followed by burns. This is consistent with other studies[11,17]. Few studies reported burns as the most common cause of death[3,8,14] followed by RTA-related trauma in unnatural female deaths.

In our study, RTA-related trauma was the most common type of accidental death, followed by burns. This is consistent with other statistics and studies[4,11]. One of the studies reported burn as the most common cause of accidental death, the reason for which may be attributed to demographic variations[12].

Poisoning was the most common means of suicidal death, followed by hanging and burns, which is comparable with other studies[18,19]. Easy accessibility and availability of different types of poisons may be the main reason for poisoning to be the most common means of suicide in this population.

In the majority of homicidal deaths, hard, blunt weapons were used, followed by sharp weapons. Burning and neck compression were means employed in homicidal deaths seen in the study sample. This is in contradiction with one of the studies[4].

According to the present study, in the majority of the cases of suicide, family dispute was the main reason, which is consistent with other statistics[9] and studies[4,18,19].

Similarly, in the majority of the cases of homicide also, the family dispute was the main reason, and the husband was the perpetrator. This is consistent with another study[4].

CONCLUSIONS

Mortality in women has long been a source of concern to health policymakers and health organizations. Mortality trends among women reflect the region's dominant social structure and mental health status. Many cultural and socioeconomic factors in a country are usually related to the causation of female deaths. This study helps us to identify various factors which affect the incidence of unnatural deaths in females. The study will be useful for raising awareness among society and to improve the situation. We recommend the following actions.

1. Seek public opinion against this serious social scourge through various means, including the media and non-governmental organizations.

2. Effective coordination between non-governmental organizations, voluntary, and law enforcement agencies to prevent and curb crimes against women.

3. Promote literacy among women and make them economically independent and free employment generation.

4. Enact stricter laws against the ill-treatment of housewives by their husbands and parents-in-law.

5. Mahila Courts should be strengthened.

6. Adequate facilities should be provided to the Women's Protection Cells operating in the state to deal with deaths due to burns.

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CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

ETHICAL ISSUES

Ethical approval was granted by the Institutional Ethics Committee (IEC), Department of Pharmacology, Government Medical College, Nagpur, India.

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None.

AUTHOR CONTRIBUTIONS

JLB: Conception or design of the work; and final approval of the version to be published. **AKJ:** Drafting the work or revising it critically for important intellectual content; and final approval of the version to be published. **KJ:** Drafting the work or revising it critically for important intellectual content; and final approval of the version to be published.

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