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## Original Research Article

## Profile of unnatural deaths in adult females – A retrospective study conducted at a tertiary care hospital in Haryana

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## ABSTRACT

**Background:** Unnatural deaths, including unintentional and intentional events, require post-mortem examinations to rule out foul play. Women aged 18 to 30 are particularly vulnerable to mental, physical, psychological, and social challenges, including dowry-related deaths and occupational hazards. Unfortunately, female victimization is often underreported and research on the topic is limited.

**Materials and Methods:** This study took into account 1564 post-mortem records of cases conducted in 5 years and analysed cases of unnatural deaths in adult females aged over 18 years to understand the gravity of female victimization in the region.

**Results:** Of the 204 identified cases, poisoning was the leading cause of death, and suicide was the most common manner of death. Accidental deaths were the second most common manner.

**Conclusion:** The study highlights the need for policies to address socio-economic and human rights deprivation, domestic violence, and mental health issues that contribute to these deaths. Measures to promote female economic independence and effective prevention and support strategies are necessary to reduce the prevalence of unnatural deaths among women in India.

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## 1. Introduction

Unnatural deaths can be caused by unintentional or intentional events. Unintentional events are typically accidental, while intentional ones may be the result of suicide or homicide.<sup>1</sup> Regardless of the cause, a post-mortem examination must be conducted to rule out foul play.<sup>2</sup> The incidence of unnatural deaths can shed light on the prevailing social and mental health status of the population. Medico-legal post-mortem examinations are vital for analysing these deaths.<sup>3</sup>

Recent attention has focused on crimes against women, which have been a concern for society since ancient

times. These crimes have evolved with changing societal values, but they remain a pressing issue. Women aged 18 to 30 face numerous burdens, including mental, physical, psychological, and social challenges. They typically experience major life transitions, such as marriage, employment, and childbearing, during this period.<sup>4</sup>

Dowry-related deaths remain common in contemporary Indian society, particularly among lower castes and economically disadvantaged groups.<sup>5</sup> As more women enter the workforce and pursue higher education, they face additional risks such as occupational hazards and road traffic accidents. Several factors, including age, occupation, lack of support, and parental pressure, contribute to women's unnatural deaths.

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Unfortunately, cases of female victimization are often underreported, and research on the topic is scarce. This study aims to explore the profile of unnatural deaths among adult females in this region. By analysing the cause and manner of death, including suicides, homicides, and accidents, the study tries to understand the gravity of female victimization in this part of the country.

## 2. Materials and Methods

The study was conducted in the Department of Forensic Medicine, B.P.S. Government Medical College for Women, Khanpur Kalan, Sonipat. This study is a descriptive retrospective analysis that involved gathering data from post-mortem records of all instances of cases of unnatural deaths brought to the mortuary of B.P.S. Government Medical College for Women, Khanpur Kalan, Sonipat between January 2018 and December 2022.

A standardized proforma created specifically for this purpose was utilized to gather details about each case from the postmortem records and the police papers. Details pertaining to age, marital status, occupation, cause of death and manner of death were gathered from each case.

### 2.1. Inclusion criteria

All the cases of adult females brought to mortuary of BPS Government Medical College for Women, Khanpur Kalan, Sonipat for post-mortem examination above the age of 18 years who died in unnatural circumstances. Age was confirmed by documentary evidences like birth certificate, identification cards, Aadhar card etc.

### 2.2. Exclusion criteria

1. Cases of age less than 18 years of age.
2. Cases where death was due to natural cause.
3. Cases of negative and obscure autopsies

The data collected was then thoroughly analysed to obtain a comparative evaluation.

## 3. Results

Of the 1564 autopsies conducted, 204 (13.04%) were of females aged over 18 which were identified as unnatural deaths. The majority of cases (50.1%) belonged to the age group of 18 to 30 years, with the highest number being 43 (21.08%) recorded between the ages of 21 to 25.(Table 1)

152 (75.49%) of the victims were married, while 42 (20.59%) were unmarried, 6 (3.43%) were widowed, and 1 (0.49%) was divorced.(Table 2) The occupation of the deceased showed that most of the cases, 129 (63.24%), were housewives (married and unemployed), followed by 37 (18.14%) working women, 22 (10.78%) students, and 16 (7.84%) unemployed.(Table 3)

## 4. Discussion

An increase in unnatural deaths within a society is a clear indication of the absence of social and mental well-being. The situation is especially critical when it comes to women who have fallen prey to long-term deprivation of socio-economic and human rights. Such cases reflect a negative image of the society they belong to. Therefore, studying the profile of unnatural deaths is highly important in formulating preventive strategies and policies.

This present study focuses on the descriptive analysis of unnatural deaths of adult females above the age of 18 who underwent post-mortem examination at a tertiary care centre for a period of five years. Out of the 1564 cases brought for examination, 204 of them (13.04%) were related to unnatural deaths of adult females. It is observed that the majority of cases, which account for 43 cases, were from the age group of 21 to 25 years. This trend is consistent with other studies<sup>6-9</sup> that highlight that the reason for the high incidence of cases during this age group is due to the unpreparedness of young females in dealing with married life's stress.

In this study, 75.49% of the unnatural female deaths were of married women, and the maximum deaths were observed to be within the early years of marriage. This finding is consistent with other studies<sup>6,7,10</sup> where dowry-related deaths have become a norm within the initial years of marriage. The present study also highlights that housewives constitute the maximum bulk of unnatural deaths in females. Other studies<sup>6-9</sup> also showed housewives to be prime victims, showing that economically dependent women are more susceptible to domestic violence.

The manner of death has been identified as a critical aspect of unnatural deaths, and in most cases, it is suicidal, accounting for 142 cases (69.60%).(Table 5) The use of poison has been identified as the single most common method, accounting for 60.78% of all unnatural female deaths in this study. This is primarily due to the easy availability, low cost, and efficacy of poison. Hanging was identified as the second most common method of suicide. Road traffic accidents were found to be the most contributory factor to accidental deaths, accounting for 62.5%, followed by drowning (14.58%), electrocution (10.42%), and envenomation (6.25%). In cases of homicidal deaths, ligature strangulation was found to be the most common method, accounting for 42.8%, followed by assault causing morbid injuries (28.58%) and firearm injuries (7%).(Table 4) These findings are consistent with other studies.<sup>4,5</sup> Other studies<sup>11,12</sup> found hanging to be the most common suicidal method. However, studies by Kumar TM et al. (2006),<sup>13</sup> Kumar S et al (2013),<sup>14</sup> Arora S (2016)<sup>15</sup> and Kitulwate IDG et al. (2017)<sup>16</sup> show contrasting results where accidents were reported as the most common manner of death.

**Table 1:** Showing age-wise distribution of the cases

Age	2018	2019	2020	2021	2022	Total	Percent
18-20	6	7	3	8	4	28	13.73
21-25	7	10	7	10	9	43	21.08
26-30	5	12	4	7	5	33	16.18
31-35	9	6	1	5	4	25	12.25
36-40	9	6	7	2	4	28	13.73
41-45	4	3	0	2	3	12	5.88
46-50	4	1	2	5	1	13	6.37
>50	2	6	0	8	6	22	10.78
<b>Total</b>	46	51	24	47	36	204	

**Table 2:** Showing distribution of the cases based on marital status

Marital status	2018	2019	2020	2021	2022	Total	Percent
<b>Unmarried</b>	7	14	6	12	3	42	20.59
<b>Married</b>	39	37	18	31	29	154	75.49
<b>Widow</b>	0	0	0	3	4	7	3.43
<b>Divorced</b>	0	0	0	1	0	1	0.49

**Table 3:** Showing distribution of the cases based on occupation

Occupation	2018	2019	2020	2021	2022	Total	Percent
<b>Student</b>	4	4	4	9	1	22	10.78
<b>House wife</b>	31	27	15	30	26	129	63.24
<b>Working</b>	10	14	3	4	6	37	18.14
<b>Unemployed</b>	1	6	2	4	3	16	7.84

**Table 4:** Showing distribution of the cases based on cause of death

Cause of death	2018	2019	2020	2021	2022	Total	Percent
<b>Poisoning</b>	27	31	16	28	22	124	60.78
<b>Asphyxia</b>	3	9	3	7	4	26	12.74
<b>Electrocution</b>	1	0	0	1	3	5	2.45
<b>Envenomation</b>	0	0	0	2	1	3	1.47
<b>Road traffic accident</b>	7	8	3	8	4	30	14.70
<b>Polytrauma</b>	4	0	0	0	0	4	1.96
<b>Firearm</b>	1	0	0	0	1	2	0.98
<b>Drowning</b>	2	2	1	1	1	7	3.43
<b>Railway track accident</b>	0	0	1	0	0	1	0.49
<b>Burns</b>	1	1	0	0	0	2	0.98

**Table 5:** Showing distribution of the cases based on manner of death

Manner of death	2018	2019	2020	2021	2022	Total	Percent
<b>Suicidal</b>	30	38	16	33	25	142	69.60
<b>Homicidal</b>	5	1	4	2	2	14	6.86
<b>Accidental</b>	11	12	4	12	9	48	23.53

## 5. Conclusion

This study sheds light on the various causes of female deaths and highlights the need for measures to tackle socio-economic and human rights deprivation, domestic violence, and mental health issues that contribute to these deaths. Policies must be implemented to address the high incidence of marital and dowry-related deaths in the early years of marriage, while measures promoting female economic

independence can help reduce domestic violence. Despite some positive changes brought about by modernization, such as increased education and employment opportunities for women, the problem of unnatural deaths, particularly those related to crimes against women, continues to be a pressing concern in India. Research must be carried out to better understand the root causes of this problem and to develop effective prevention and support strategies.

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Nil.

## 7. Conflict of Interest

Nil.


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