



Research Article

An Autopsy based Retrospective study of Unnatural Deaths among Females

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ABSTRACT

Introduction: Death is said to be unnatural when caused precociously against the order of nature; this could be homicidal, suicidal, accidental, or of unexplained origin. Death of a female in a family especially by unnatural deaths will affect the productive years of survivors of family. This study aims to determine the pattern of unnatural deaths among females by analyzing the precipitating factors and cause of death, including suicides, homicides, and accidents.

Materials and Methods: A total of 115 cases of female unnatural deaths were analyzed during the study period of 1 year. Data pertaining to inquest report, first information report, statements made by the relatives and eyewitnesses, hospital records, and post mortem examination reports were collected along with general demographic data.

Results: The maximum number of female unnatural deaths occurred in the age group of 21–30 years, i.e., 22% of cases. 65% of autopsied cases are from the rural population. Coolies are most common victims of unnatural deaths i.e., 38 %. Most of the incidents occurred during 12:00 noon to 06:00 pm, i.e., 43%. In the majority of cases, ill health is the major precipitating factor. The main cause of death is by consumption of poisonous substances, i.e., 32%.

Conclusion: This study will aid to reduce the avoidable unnatural deaths in females by implementing new health care policies, health awareness programme for females and improve the traffic rules and regulations to prevent the road traffic accidents by the state and central government authorities.

Keywords: Unnatural death, Female, Patterns.

INTRODUCTION:

Death is called unnatural if it results directly from an injury or poison, or indirectly by an injury which may precipitate pre-existing natural disease in an individual. In other words, death is unnatural when caused precociously against the order of nature; this could be suicidal, homicidal, accidental or of unexplained origin [1]. Death is a tragedy and unavoidable inevitable fate of human life. Death occurs by two ways either by natural and unnatural. Natural deaths are due to any pathology (disease) or ageing [2,3].

Death of a female in a family especially by unnatural deaths will affect the productive years of survivors of family. Unnatural deaths due to any kind of cause will have a serious psychological and social impact on the family and community [4]. These unnatural deaths in society are indirect reflection of the prevailing social setup and mental health status of the population. Post mortem autopsy of unnatural deaths will definitely aid in the analysis of deaths [5]. According to the National Family Health Survey (NFHS-5), conducted from 2019 to 2021 in 29 states and 7 union territories of India, unnatural mortality was found to make up to 10.3% of total deaths [6]. It was greater among the population aged between 10 and 45 years. In India, the unnatural mortality rate was 0.67 per 1000 population, 0.84 per 1000 among the male population and 0.49 per 1000 among the female population [6]. In India, the National Crime Records Bureau (NCRB) statistics showed a consistent, concerning rise in suicide rates from 9.9 per lakh in 2017 to 12.4 per lakh in 2022 [7]. It is usually required to hold an inquest to determine the cause and manner of death if death occurs unexpectedly or in unusual circumstances [8]. Unfortunately, many cases of female victimization are often

underreported. This study highlights to determine the pattern of unnatural deaths among females by analyzing the precipitating factors, time and cause of death, including suicides, homicides, and accidents.

MATERIALS AND METHODS:

Study Design & Settings:

This is a retrospective cohort study conducted on all female patients deceased by unnatural death in and around Kadapa, Andhra Pradesh. The study has been carried out in department of Forensic Medicine of Government Medical College, Kadapa, Andhra Pradesh. An informed consent was taken from the study population prior to the study. All the patient details were kept unlinked anonymously. A total of 115 cases according to inclusion criteria were further studied in this research work.

Study period: 01 year (January 2023 to December 2023).

Inclusion criteria: All the female patients who were died in unnatural circumstances, registered under medicolegal and brought to mortuary were included in this study.

Exclusion criteria: All natural deaths and decomposition cases among females where the cause of death could not be determined were excluded.

Data collection: Data pertaining to inquest report, first information report, statements made by the relatives and eyewitnesses, hospital records, and post mortem examination reports were collected along with general demographic data.

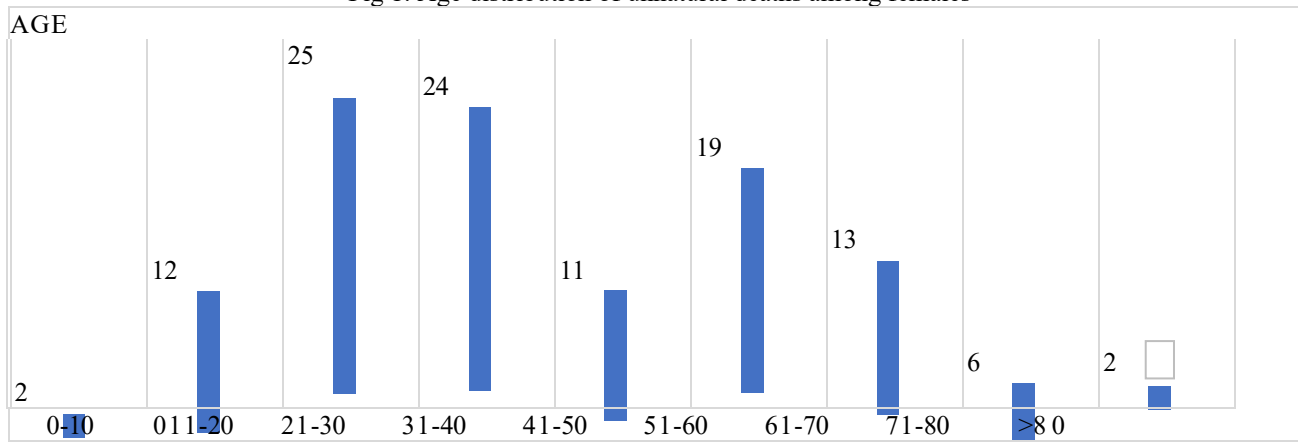
Statistical analysis: The data was entered into Microsoft excel sheet and calculated the results. The statistical analysis such as mean $\pm$ standard deviation, frequency, and percentages done in Microsoft excel.

RESULTS:

During the study period, out of 543 autopsies conducted in the mortuary of the Government General Hospital, Kadapa, 410 (75.5%) were male cases and 133 (24.4%) were female. Out of 133 cases, 115 (86.4%) cases were unnatural deaths and 18 (13.5%) were natural deaths. Out of 115 unnatural deaths, 112 were known females and 03 were unknown.

The maximum number of unnatural deaths among females occurred in the age group of 21–30 years, i.e., 25 out of 115 cases, constituting 22%, and the least number of cases i.e., 2%, are observed in the age group of >80 years (Fig 1).

Fig 1. Age distribution of unnatural deaths among females



In this study, 75 out of 115 cases (65%) are registered from the rural population. Most of the unnatural deaths occurred in married women, i.e 61% (70 out of 115 cases), followed by widows, i.e 22% (25 out of 115 cases) and the least cases are observed in unmarried females, i.e 13% (17 out of 115 cases). Females who are working as coolie are most common victims of unnatural deaths i.e., 38 % (44 out of 115 cases), followed by homemakers i.e., 37% (43 out of 115 cases).

Table 1. Occupation of study population

Occupation	No. of Cases
Coolie	44
House Maker	43
Student	11
Private Employee	6
Farmer	5
Not Known	3
Not Applicable	2
Business	1

Most common precipitating factors behind the unnatural deaths among females were falling ill and family problems. In some cases accounting to 33.9% we were unable to find the precipitating factors (Table 2).

Table 2. Analysis of precipitating factors among female unnatural deaths

Precipitating factors	No. of cases	Percentage
Ill Health	39	33.9%
Not Applicable	39	33.9%
Family Problem	24	20.8%
Exam Fail	3	2.6%
Financial Problem	3	2.6%
Not Known	3	2.6%
Psychiatric Problem	2	1.73%
Death Of Partner	1	0.86%
Dowry Harassment	1	0.86%

Precipitating factors other than road traffic accidents and railway accidents are mainly due to Ill health, constituting 34% (39 out of 115 cases), 21% (24 out of 115) due to family problems, the least number of cases, i.e., 01 case is due to depression (Fig 2).

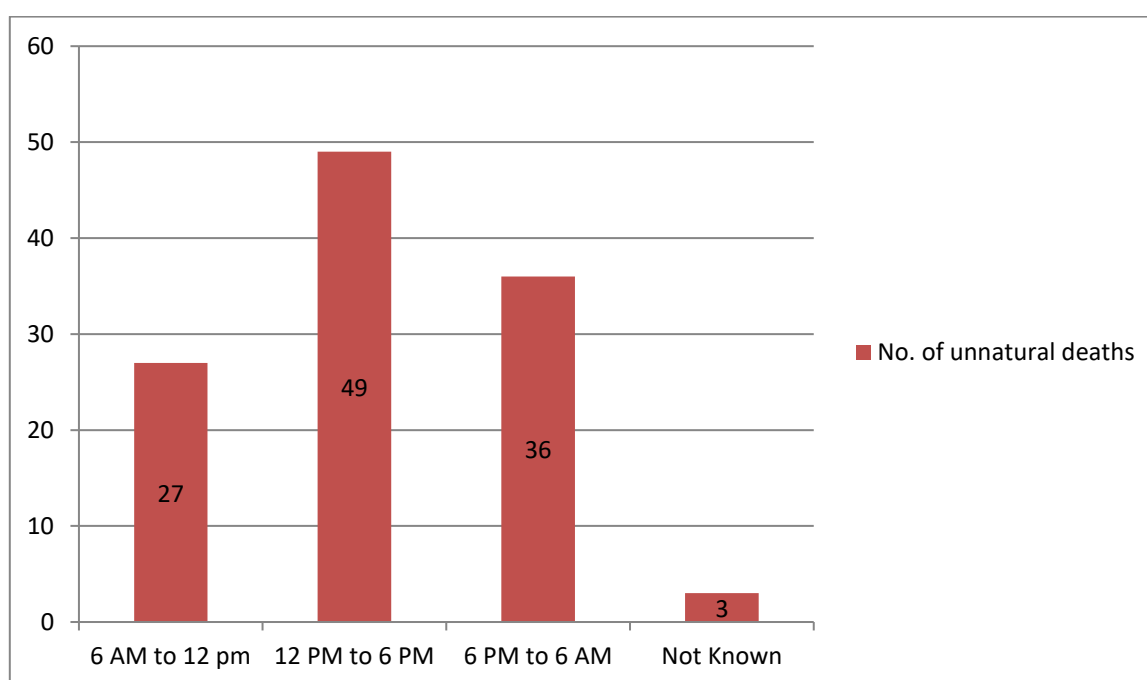


Fig 2. Time of death in the study population

In this study, most of the unnatural deaths observed are due to consumption of poisonous substances, i.e., 32% (37 out of 115 cases), followed by road traffic accidents, i.e 28% (32 out of 115 cases) (Fig 3).

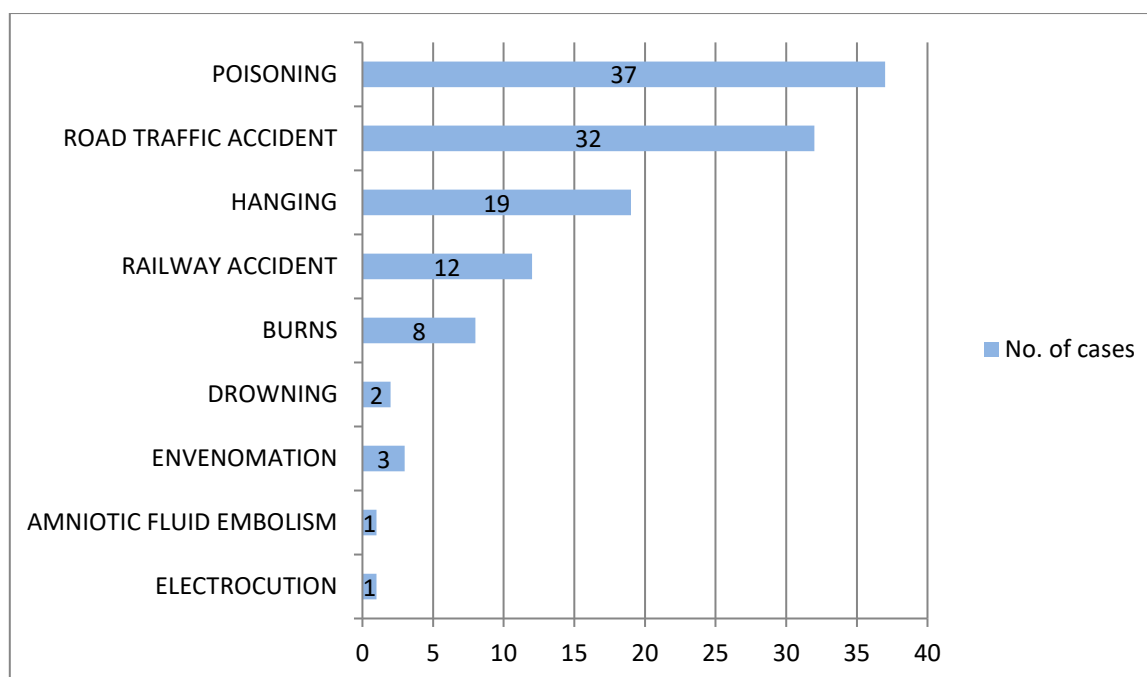


Fig 3. Cause of unnatural deaths among females

DISCUSSION:

The present study is a retrospective study of unnatural deaths among female cases which were autopsied at the mortuary, GGH, Kadapa. A total of 115 cases of unnatural female deaths were analyzed for the past 01 year. Male predominance was observed and 24.4% of autopsies during one year period were unnatural deaths of females. Out of 115 cases, the maximum number of cases was between 21 to 40 years of age. These findings were consistent with the findings of Akhilesh Pathak et al [9] and the Sane et al [10] and the study by Kitulwatee et al [11]. Rajindran R et al [12] did a study on unnatural deaths in adult females aged above 18 years noted 13.04% of unnatural deaths and predominant cases were belonged to the age group of 18 to 30 years (50.1%). A study in Central India was also noted the most common age group is 21 to 30 years [13].

In this study, most cases, i.e., 61% (70 out of 115), were from the married age group, which is consistent with the findings of Sujatha PL [14] and Akhilesh Pathak [9]. Borkar JL et al [13] reported that the majority of the deceased were married (n=149, 73.04%), followed by 22% for 0-7 years and 20% for 8-14 years. Few research works also stated that unnatural deaths of females were common in married women [15-17].

In the present study, it is observed that a maximum number of unnatural deaths were coolies i.e., 38 % (44 out of 115 cases). Borkar JL et al [13] observed the majority of the deceased were house-wives (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. In the present study, most of the incidents of unnatural deaths occurred during 12:00 Noon To 06:00 pm, i.e., 43% (49 out of 115 cases). These findings are consistent with the findings of Sujatha P Let al [6].

The main cause of death is poisoning, constituting 32% (37 out of 115 cases), which is consistent with the study of Manogna SK et al [18] with the underlying precipitating factor mainly being ill-health. Majority of the unnatural deaths observed are due to consumption of poisonous substances, i.e., 32% (37 out of 115 cases), followed by road traffic accidents, i.e., 28% (32 out of 115 cases) as the present study (Table 3).

Table 3. Cause of unnatural deaths among females by various studies in India.

	Present study	Borkar JL et al [13]	Rajindran R et al [12]	Akhilesh Patak et al [9]
Poisoning	32.1%	44.7%	60.78%	17.08%
Road Traffic Accident	27.8%	67.50%	14.70%	20.2%
Hanging	16.5%	28.36%	12.74%	5.63%
Railway Accident	10.4%	3.33%	0.49%	-
Burns	6.9%	20.9%	0.98%	45%
Drowning	1.7%	5.97%	3.43%	1.67%
Envenomation	2.6%	2.50%	1.47%	-

Amniotic fluid embolism	1.7%	-	-	-
Electrocution	1.7%	0.83%	2.45%	1.46%

Our study findings are consistent with Narayankar P et al [19] and Parmar P et al [20]. Zohlupuii B et al [21] found hanging to be the most common suicidal method. The cause of the unnatural death is different in different studies; this variation might be due to the easy availability of low cost poisons, traffic in the regions, presence of water storage areas and the quality of life index in the community.

CONCLUSION:

Despite of implementation of stringent laws, policies, awareness programmes, providing education and employment opportunities for women, there is still a steady increase in the female unnatural deaths in recent years. In this study most common method of unnatural deaths is due to the consumption of poisonous substances, followed by road traffic accidents. This study will aid to reduce the avoidable unnatural deaths in females by implementing new health care policies, health awareness programme for females and improve the traffic rules and regulations to prevent the road traffic accidents by the state and central government authorities.

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, is the area to be focused on in India. Research must be carried out to develop effective prevention and support strategies.

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