

## A Study on the Pattern of Suicidal Deaths Brought for Medicolegal Autopsy at the Mortuary of Shaheed Nirmal Mahto Medical College (SNMMC), Dhanbad Jharkhand

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### Abstract:

This study investigates the patterns and features of suicidal deaths that were subjected to medicolegal autopsy at the mortuary of Shaheed Nirmal Mahto Medical College (SNMMC), Dhanbad, Jharkhand. The study covers a period of six months, from 15th November 2023, to 14th May, 2024. We were Analyzed 100 instances to ascertain demographic patterns, suicide methods, and related psychosocial aspects. The results indicated that the demographic group most impacted was young adults, specifically males between the ages of 21 and 30. The study found that hanging accounted for 45% of suicides, while poisoning was responsible for 30% of cases. The majority of suicides took place in residential settings (70%) and were more prevalent throughout the evening and midnight (60%). The main psychosocial factors identified were a history of psychiatric disorders (25%), substance misuse (20%), financial crisis (35%), and family disputes (40%). These findings emphasise the necessity of implementing specific suicidal prevention tactics, improving mental health assistance, and implementing community-based interventions to tackle the socio-economic and psychological aspects that contribute to suicidal behaviour in this area.

**Keywords:** Suicidal deaths, Medicolegal autopsy, Suicidal prevention.

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### Introduction

Suicide is a prominent concern in public health and a major contributor to global mortality, presenting substantial social, economic, and psychological difficulties. The occurrence of suicidal deaths is a result of an intricate interaction between multiple circumstances, such as mental health illnesses, socio-economic pressures, familial conflicts, and personal crises [1]. The thorough analysis of these fatalities through forensic autopsy offers an invaluable understanding of the root causes, aiding in the development of effective preventative programs and public health policies [2,3].

India experiences a significantly high prevalence of suicide, with notable differences across different regions, which are impacted by cultural, economic, and demographic factors. Jharkhand, an eastern state in India, offers a distinctive terrain for examining cases of suicide as a result of its varied population and socio-economic difficulties [4,5]. Dhanbad, a city renowned for its coal mining sector, faces a unique mix of stressors that might contribute to the occurrence of suicide. These stressors include occupational risks, economic instability, and social dynamics [6,7].

The Dhanbad Shaheed Nirmal Mahto Medical College (SNMMC) is a key medicolegal investigative hub. The SNMMC mortuary handles many autopsy cases, including suicides. In-depth investigations of these cases may reveal the pattern of suicidal deaths, including techniques, demographics, and triggering events [8]. Methodically analyzing the trend of suicide fatalities submitted for medicolegal autopsy at SNMMC, Dhanbad mortuary. Through data analysis over a given timeframe, we hope to find patterns and correlations that can inform future preventive efforts and treatments. This study will help healthcare professionals, legislators, and mental health activists reduce suicide in Jharkhand and elsewhere by improving suicide understanding [9].

This study seeks to identify the most common suicide methods, analyze the demographics of the deceased, identify socio-economic determinants and life stressors, and explain seasonal and temporal trends of these fatalities. This thorough study aims to understand the diverse causes of suicidal behavior in the area and improve suicide prevention.

## Methodology

### Study Design

This Prospective descriptive study examines medicolegal autopsies of suicidal deaths at Shaheed Nirmal Mahto Medical College (SNMMC) mortuary in Dhanbad, Jharkhand. The study will evaluate these deaths' trends and features over time.

### Study Duration

The study was conducted over six months, from 15th November 2023, to 14th May 2024.

### Study Place

The study was carried out at the mortuary of Shaheed Nirmal Mahto Medical College (SNMMC), Dhanbad, Jharkhand, which serves as a key center for medicolegal investigations in the region.

### Study Population

The study included all cases of suicidal deaths brought for a medicolegal autopsy to the SNMMC mortuary during the study period. A total of 100 bodies were examined.

### Data Collection

Mortuary case files and autopsy records provided data. The following was extracted for each case: Death demographics: Age, gender, marital status, and occupation.

- Suicide method: Hanging, poisoning, self-immolation, drowning, by weapons, etc.  
- Suicide location: Home, office, public area.  
Death time and season: Death date and time to analyze temporal patterns.  
Psychosocial aspects include mental history, substance misuse, financial position, familial background, and life stressors.

### Inclusion Criteria

- All cases of suicidal deaths were brought to the SNMMC mortuary for medicolegal autopsy within the study period.

### Exclusion Criteria

- Cases where the cause of death was undetermined or where the death was not classified as a suicide.  
- Incomplete records or cases lacking essential data for analysis.

### Data Analysis

Data were placed into a database and analyzed using statistical tools. Demographics, suicide methods, and other factors were summarised using descriptive statistics. For categorical data, percentages and

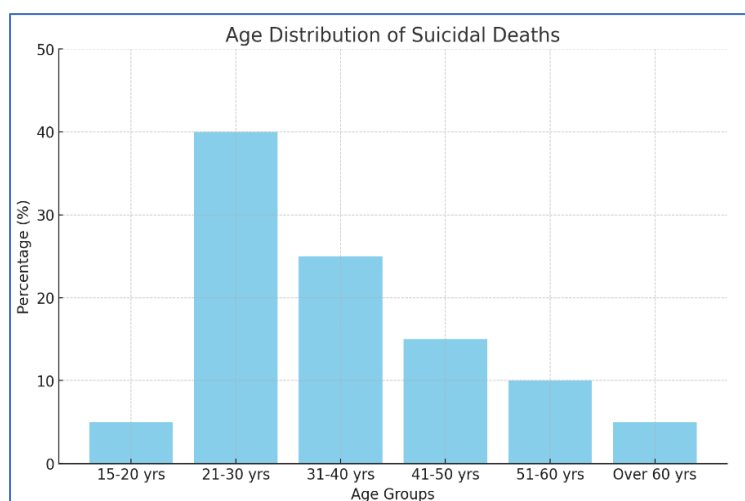
frequencies were determined; for continuous variables, means and standard deviations.

## Results

Between 15th November 2023, and 14th May 2024, the mortuary of Shaheed Nirmal Mahto Medical College (SNMMC) in Dhanbad conducted medicolegal autopsies on a total of 100 instances involving suicidal deaths. The age range of the deceased individuals varied from 15 to 75 years. The largest proportion (40%) fell within the 21-30 years age bracket, followed by 31-40 years (25%), 41-50 years (15%), 51-60 years (10%), and those beyond 60 years (5%). The cases were comprised of 5% of individuals between the ages of 15 and 20.

Regarding gender distribution, males accounted for 65% of the cases, while females for 35%. In terms of marital status, 60% of the deceased individuals were married, while 40% were single. The occupational distribution was diverse, including of 30% daily wage laborers, 25% unemployed individuals, 20% students, 15% homemakers, and 10% individuals employed in formal jobs. Hanging was determined to be the predominant means of suicide, comprising 45% of the cases, followed by poisoning at 30%. Additional techniques encompassed self-immolation (10%), drowning (8%), by using firearms (5%), and miscellaneous approaches such as leaping from elevated positions or slashing (2%).

Most of the suicides (70%) took place in residential settings, while 15% occurred in work environments, 10% in public areas, and the remaining 5% in various other locales. The occurrence of these incidents had a discernible pattern, with 60% transpiring in the evening and overnight, and the remaining 40% taking place during the daytime. March and April exhibited the highest frequency of incidents, indicating a discernible seasonal pattern in the prevalence of these suicides. Psychosocial issues also a significant impact, with 25% of the deceased having a documented psychiatric history, primarily consisting of depression. Alcohol misuse was observed in 20% of the cases, while 35% experienced financial crisis and 40% had familial problems or relationship issues. In addition, 10% of the deceased individuals had a prior history of suicide attempts. The study emphasized that young adults, particularly males, were the demographic category most significantly impacted. The most prevalent means of suicide were hanging and poisoning. A considerable part of the incidents took place at individuals' residences throughout the late hours, with financial and familial problems being prominent psychosocial variables linked to these unfortunate fatalities.



**Figure 1: The bar graph shows suicidal fatalities by age. This visualization illustrates that 21-30-year-olds had the most cases.**

### Discussion

The six-month study at Shaheed Nirmal Mahto Medical College (SNMMC) mortuary in Dhanbad, Jharkhand, analyses suicidal fatalities. The findings illuminate demographic patterns, methodologies, and psychosocial variables related to these tragedies [10].

The majority of suicides were committed by young individuals, notably those aged 21-30. Other Indian and global studies show that young adults have the highest suicide risk. Dandona et al. (2018) [11] found a similar age distribution for suicide in India, peaking in the 15-29 age group. This study's 65% male preponderance matches the overall trend of greater suicide rates for men. This gender gap is generally attributed to disparities in help-seeking behavior, societal expectations, and men's more lethal means. Other Indian studies, such as Radhakrishnan and Andrade (2012) [12], found that socio-cultural and psychological factors make males more likely to commit suicide.

The most prevalent suicide technique was hanging (45%), followed by poisoning (30%). These findings are consistent with other Indian research that identifies hanging and poisoning as the most common suicide methods. Kumar et al. (2020) [13] found that hanging was the most prevalent technique in South India, accounting for almost half of cases. These approaches may be preferred for their accessibility and perceived lethality. The home environment influences suicidal behavior, as 70% of suicides happen at home. Research by Behera et al. (2016) [14] in Odisha, India, indicated that most suicides occur in domestic settings.

The study also observed a greater occurrence of suicides between the evening and overnight, accounting for 60% of the cases. This temporal trend indicates that the presence of darkness and isolation during nighttime may play a role in the incidence of

suicidal behaviors. The study conducted by Kim et al. (2011) [15,19] supports these findings, indicating that suicides are more likely to occur during the late evening and overnight as a result of different psychological factors.

Psychiatric history was recorded in 25% of the cases, with depression being the prevailing diagnosis. This aligns with the firmly recognized correlation between mental health issues and the likelihood of suicide. A meta-analysis conducted by Hawton et al. (2013) [16,20] has substantiated those individuals suffering from psychiatric diseases, including depression, are at a considerably elevated risk of suicide. Substance misuse, specifically alcohol, was observed in 20% of the instances. The correlation between substance abuse and suicidal behavior is extensively documented, with research demonstrating that substance misuse can intensify emotions of helplessness and impulsivity, thereby elevating the likelihood of suicide. The study conducted by Vijayakumar et al. (2011) [17,21] emphasized the influence of alcohol on suicide rates in India, with a special focus on males.

The study found that financial crisis and family problems were significant variables, with 35% and 40% of the subjects experiencing them, respectively. A study carried out by Patel et al. (2012) [18] found that economic difficulty and interpersonal issues are frequently associated with suicidal behavior. The study specifically identified financial challenges and family troubles as key stressors that contribute to suicide in rural India [22,23].

### Conclusion

Research at Shaheed Nirmal Mahto Medical College (SNMMC) mortuary in Dhanbad, Jharkhand, provides vital information about suicide rates and characteristics. The report stresses that young individuals and men are especially affected by this

issue. Also, hanging and poisoning are the most usual methods in these circumstances. The findings show that financial crisis, family differences and mental disease significantly increase suicidal tendencies. These findings require immediate implementation of suicide prevention strategies, improved mental health disorders, and community-centered initiatives to address socio-economic and psychological factors to reduce suicide in Jharkhand.

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