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Original Research Article

Trends in Suicidal Hanging: A Retrospective Study in Urban Population

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Abstract

Background: Suicidal hanging is one of the most prevalent methods of suicide globally and remains a significant public health concern, particularly in urban environments where stressors such as social isolation, job pressure, and mental health challenges are prevalent. This study aims to explore the trends, demographic patterns, and contributing factors associated with suicidal hanging in an urban population over a one-year period.

Objective: The primary objective of this study was to analyze the demographic and clinical profiles of individuals who died by suicidal hanging in an urban setting. The secondary objectives included examining temporal patterns, the role of mental health conditions, socioeconomic status, and other environmental factors contributing to the act.

Methods: This retrospective observational study was conducted in a forensic medicine department located in an urban DMCH Laheriasarai Darbhanga Bihar. A total of 100 confirmed cases of suicidal hanging, documented between April 2023 and March 2024, were included. Data was extracted from medico-legal autopsy records and center case files. Inclusion criteria encompassed all confirmed cases of suicidal hanging within the specified urban area; accidental hanging and unclear cases were excluded. Variables studied included age, gender, marital status, occupation, mental health history, time and place of hanging, and survival outcome.

Results: Young adults aged 20–29 years formed the largest group among the deceased, with males comprising over 70% of cases. Hanging predominantly occurred in private residences. Mental illness, especially depression and substance abuse, was reported in over one-third of cases. Seasonal trends showed a slight increase in spring and summer months.

Conclusion: The findings highlight the urgent need for targeted mental health interventions, especially among young urban males. Community awareness, de-stigmatization of mental illness, and accessible psychiatric care are critical in preventing such tragedies.

Keywords: Suicide, Hanging, Urban Population, Mental Health, Retrospective Study, Forensic Analysis, Depression, Suicide Prevention, Demographic Trends, Public Health.

Introduction

Suicide is one of the world's biggest public health issues due to its emotional, social, and economical effects. It's a top killer worldwide, especially among 15-29-year-olds. The World Health Organisation reports around 700,000 suicides and 20 attempts per suicide [1]. This shows personal anguish and society's incapacity to help the needy. Recent research has linked suicide to psychological distress, socioeconomic issues, and environmental stress, in addition to mental health issues [2]. India ranks high in suicides, a significant portion of the world's total. The National Crime Records Bureau reports about 1.5 lakh (150,000) suicides annually. Despite increased awareness and mental health services, the frequency has been alarmingly rising in many locations [3]. Suicide methods vary by geography, culture, and socioeconomic class. In India, hanging has become popular. Hanging is popular among urban and rural communities due to its perceived certainty, accessibility, and low

planning requirements. Similar findings are found in attempted and completed suicides [4]. Hanging has a higher fatality rate than poisoning or self-immolation. This type of suicide is concerning due to restricted intervention and rescue [5]. Epidemiological studies show that 40%–50% of Indian suicides are by hanging. Urban dwellers often face loneliness, work stress, and broken relationships. Urban stressors affect suicide thoughts and actions. Modern urban living involves intense competition, social isolation, economic disparity, and migratory hazards [6]. The decrease of united family structures, excessive screen time, a lack of community involvement, and individual achievement are contributing to depression, anxiety, and hopelessness [7]. Urban settings have higher suicide rates despite better access to healthcare and mental health professionals due to the paradox of anonymity. Despite being physically, emotionally, and psychologically close, people may choose to live apart [8].

This distance might make it hard for those in emotional crises to get treatment or be noticed by family and friends. Lack of community-based mental health initiatives, inaccessibility of psychiatric treatments for low-income individuals, and mental illness stigma add to the burden [9]. Another concern is that media portrayals of suicide and its normalisation in many forms of entertainment may unwittingly foster suicidal thoughts in susceptible persons. In metropolitan areas, substance abuse, unemployment, and academic pressure, especially among youth, influence suicide ideation and behaviour [10]. Students, young professionals, and stay-at-home mothers are over-represented in suicide hangings, underlining the need for a comprehensive plan to combat this unfortunate trend. Suicidal hanging practices in metropolitan populations must be understood in this context [11]. Mental health professionals and public health officials must first identify vulnerable individuals, when and where these episodes occur, and contextual factors to customise interventions. Suicidal hanging and its developments in cities have received less attention than suicide as a whole [12]. In retrospective analysis, real case records are more essential than anecdotal or self-reported data. Policymakers and researchers can use it to study suicide attempts, victim demographics, suicide timing, and psychological factors. Understanding these factors can enable urban mental health early warning systems, predictive models, and targeted therapies.

This study analyses 100 urban suicidal hanging reports over a year to fill that gap. This study examines comprehensive case records to determine the relationship between suicidal hanging and demographic characteristics such age, gender, marital status, socioeconomic level, mental health history, and environmental triggers. The study also investigates whether seasonal trends, time-specific events, or clustering reflect suicide behaviour patterns. Studies have revealed that suicides may rise during exams, summer, and holidays, maybe due to increased stress or expectations. This study has three objectives. The main goal is to study hanging suicide victims' demographics and clinical characteristics. Cases are categorised by gender, age, marital status, profession, and mental illness history. Second, the act's socioeconomic condition, mental health, and environment will be assessed. These may include mental illness, interpersonal issues, financial issues, social isolation, and unemployment. Finally, the study will examine monthly or seasonal trends to determine if hanging suicides are more likely at certain times or on certain days. These findings may help schedule awareness initiatives and distribute mental health treatment monies.

In urban regions where socio-cultural changes and modern stresses combine, hanging suicide is one of the most common and fatal types of suicide in India. This project aims to expand epidemiological, psychological, and temporal research on hanging suicide. Through comprehensive examination of 100 cases over one year, the project intends to provide academically and practically useful insights for mental health experts, social workers, parliamentarians, and urban planners working to reduce suicide. Data-driven, context-specific, and compassionate solutions are needed to save lives and improve mental health outcomes in urban culture, and focused research like this is essential in this growing public health component of suicide prevention.

Methods

Study Design and Setting: This retrospective observational study examined suicidal hanging patterns and trends. This study employed secondary data from Department of Forensic Medicine and Toxicology's medico-legal files. As a tertiary care referral institution, the center handles many medico-legal matters, including those involving unnatural deaths. The center's big caseload and urban location made it ideal for examining urban suicide rates, notably hangings.

Study Duration and Sample Size: January 1, 2023, to December 31, 2023, was the study period. We analysed medico-legal autopsy reports, death summaries, and post-mortem examination reports for suspected hanging suicides. The analysis included 100 confirmed suicidal hangings based on inclusion and exclusion criteria.

Inclusion and Exclusion Criteria: The study only included proven urban suicide cases due to tight inclusion and exclusion criteria. Participants

included any person, regardless of gender or age, who committed suicide by hanging in the center's urban service area throughout the research period. We only included cases with all paperwork including police, autopsy, and circumstantial proof of suicide intent.

In contrast, the exclusion criteria sought clarity and high-quality data. No hangings induced by auto-erotic asphyxiation, child play, or workplace accidents were excluded. The study excluded instances with uncertain autopsy results, disputed method of death (accidental, violent, or suicidal), or incomplete documentation. This rigorous screening ensured the findings' reliability and consistency.

Data Collection Parameters: Center, autopsy, and police inquest reports were manually reviewed and relevant information was retrieved utilising a pre-structured data collection form. Personal data (gender, age); Work and marriage to assess social and personal forces; Medical documents or family histories of major depressive disorder, schizophrenia, or bipolar disorder; Past or present drug or alcohol misuse; What happened at home, in a hostel, at work, or in public; when and where. Whether the patient died upon arrival or survived the attempt but died while receiving care. Family members and associates who provided information during medico-legal or police investigations supplemented and validated the data.

Ethical Considerations: Due to the delicate nature of the subjects (dead people) and the medical and legal paperwork, the Institutional Ethics Committee (IEC) approved the study before it began. To comply with human research ethics, all data was anonymised and personally identifiable information was kept confidential. Since the study used existing records and did not include patients or families, informed consent was not needed and there was no risk.

Results

Table 1: Age and Gender Distribution of Suicidal Hanging Cases (N = 100)

Age Group (Years)	Male (n)	Female (n)	Total (n)	Percentage (%)
10–19	5	7	12	12%
20–29	20	10	30	30%
30–39	15	8	23	23%
40–49	10	5	15	15%
50–59	5	2	7	7%
≥60	8	5	13	13%
Total	**63**	**37**	**100**	**100%**

The majority of cases were in the 20–29 age group (30%), indicating a high suicide burden among young adults. Males (63%) outnumbered females (37%) in all age groups, highlighting gender disparity in suicidal hanging.

Table 2: Monthly Distribution of Cases

Month	Number of Cases
January	6
February	5
March	8
April	10
May	11
June	7
July	9
August	6
September	12
October	7
November	10
December	9

The incidence peaked in September (12%), followed by May and November (11% and 10%), suggesting a seasonal influence possibly linked to academic pressure, heat stress, or financial stress at year-end.

Table 3: Socioeconomic Status (Based on Modified Kuppuswamy Scale)

SES Category	Number of Cases	Percentage (%)
Upper Class	4	4%
Upper Middle Class	12	12%
Lower Middle Class	28	28%
Upper Lower Class	42	42%
Lower Class	14	14%

The highest proportion of cases came from the upper lower (42%) and lower middle (28%) socioeconomic groups. This suggests that economic vulnerability may contribute significantly to suicidal behavior.

Table 4: Prevalence of Comorbid Mental Illness and Substance Use

Condition	Number of Cases	Percentage (%)
Depression	25	25%
Anxiety Disorders	10	10%
Alcohol Dependence	15	15%
Substance Abuse (other drugs)	5	5%
No recorded psychiatric history	45	45%

Nearly 55% had a history of mental illness or substance use, with depression (25%) being the most common. However, 45% had no prior psychiatric record, indicating underdiagnosis or stigma associated with seeking help.

Table 5: Place of Hanging

Location	Number of Cases	Percentage (%)
Own Residence	72	72%
Hostel/PG	10	10%
Workplace	5	5%
Public Places	8	8%
Other (e.g., farm, lodge)	5	5%

The vast majority of incidents occurred at home (72%), reinforcing the private and isolated nature of suicidal acts and possibly pointing to a lack of family surveillance or early intervention.

Table 6: Survival Outcome

Outcome	Number of Cases	Percentage (%)
Dead	94	94%
Survived (initially)	6	6%

Most individuals (94%) were declared dead at the scene or on arrival. A small percentage were found alive but succumbed later or survived with severe consequences. This underscores the lethality of hanging as a method.

Discussion

Comparison with Existing Literature: In this retrospective investigation of 100 urban residents who hanged themselves a year ago, age, gender, socioeconomic status, mental health, and seasonal trends emerged. According to these and other national and international research, hanging is the most common suicide method due to its accessibility, lethality, and certainty. More than half of suicides in India are by hanging, according to the NCRB [13]. Our analysis verifies this pattern and illuminates urban risk's specific traits. The fact that 63% of this study's participants were male supports the global data indicating men have higher suicide rates than women. Death by hanging is more common among men. People aged 20–29 made up 30% of the total, followed by 30-to-39 at 23%. [14] and [15] discovered that psychological strain from relationships, professions, and societal expectations makes young individuals more likely to commit suicide. The data shows that events occur mainly in May, September, and November. Although the cause of seasonal suicide trends is unclear, several studies have linked climatic variation, cycles of academic and financial stress, and social interactions during festival or holiday seasons.

Demographic Vulnerability and Contributing Factors: Young adults have various life transitions, including education, employment, and relationships, which explains their high rate. In many metropolitan areas, peer pressure, job insecurity, family expectations, and performance standards weigh on this age group. Job dissatisfaction, economic instability, and unemployment can contribute to urban suicides.

The casualties were mostly higher lower (42%), and lower medium (28%), according to socioeconomic data. These findings show that financial difficulty may lead to suicide, especially in metropolitan regions with high housing expenses and insecure labour markets. These socioeconomic groups may already be at a disadvantage due to mental health treatment shortages. Men are less likely to seek help than women because they are expected to appear strong and independent. Suppressing emotions can make people more upset, leading to impulsive decisions like hanging without much deliberation.

Urban Stressors and Mental Health Dynamics: Urbanisation causes many psychosocial problems. Fast-paced, competitive, socially isolated, and family-fractured lives increase psychological distress. Many study participants had mental health concerns, including drinking (15%) and depression

(25%). These findings support prior research that found untreated or poorly managed mental health disorders to be suicide risk factors. Suicide ideation is linked to loneliness, which is common in nuclear families and migrants in working apartments or hostels. Statistics show 10% of victims stayed in PGs or hostels. These arrangements promote autonomy but often lack emotional support chains. Another indirect theme from the data was relationships. In response to breakups, marital problems, or social rejection, 20-29-year-olds may commit suicide without adequate coping mechanisms. Lack of meaningful social involvement and emotional resilience often lead to impulsive behaviours like hanging.

Stigma, Mental Health, and Access to Services: Mental health stigma persists in many communities, particularly in South Asia, despite greater public awareness. Many people postpone therapy for depression, anxiety, or substance abuse because they fear rejection or stigma from loved ones. Stigma-related underdiagnosis and reporting limitations may explain why 45% of victims in this study had no psychiatric history. India's main cities have overurbanization and a lack of healthcare integration for mental health services. Counselling is underutilised in universities, businesses, and workplaces. Many people avoid accessible services due to cost and cultural biases. The results demonstrate the importance of standardised mental health discourse and strong, anonymous support systems.

Preventive Strategies and Public Health Interventions: Hanging suicide is a major issue that needs appropriate solutions. The community should increase mental health awareness, especially efforts to identify young people's emotional suffering early. Mental health professionals who can handle emergencies should supplement educational counselling. Companies should offer psychologists, stress management classes, and frequent mental health assessments through Employee Assistance Programs (EAPs). Lodge, hostel, and labour camp residents, who are stressed and lonely, need particular attention. Urban planning for mental health should include housing affordability, green space accessibility, and community-building programs. Public health campaigns using media, social media, and local influencers can break the stigma of mental illness and encourage help-seeking. In acute crises, emergency psychiatric care and suicide prevention hotlines can save lives. Policy should prioritise suicide prevention in national health missions and education. Mental health should be included in primary healthcare packages via government-funded plans like Ayushman Bharat, including subsidies and awareness campaigns to encourage treatment.

Limitations of the Study: This study, while insightful, is not without limitations. Firstly, it is based on data from a single urban medical center or forensic department, limiting its generalizability to rural or semi-urban populations. The retrospective nature of the study relies on the accuracy and completeness of medical records, which may sometimes lack detailed psychiatric or psychosocial information. Additionally, the study could not explore causative intent or psychological autopsies, which require in-depth interviews with family members and friends of the deceased. Such qualitative insights would have enriched understanding of contextual triggers and emotional states. Lastly, the study sample of 100 cases, while adequate for descriptive analysis, may be insufficient for establishing statistically significant associations or multivariate risk profiling.

Conclusion

This study documents 100 urban suicide hangings over a year. Details are provided in the summary. The data reveal demographic and psychological patterns. The 20-29-year-old male population was most likely to hang themselves, followed by the 30-year-olds. This indicates a gender and age bias, with young adult men at danger. City life exacerbates mental illness (particularly depression and substance abuse), socioeconomic concerns, and social isolation. According to the paper, mental health awareness, vulnerability identification, and stigma removal must be addressed immediately. Urban stressors including scholastic and vocational pressure, a lack of social support, and interpersonal issues can contribute to suicidal ideation, therefore integrated mental health therapies are needed. Suicide prevention hotlines, affordable mental health care, and mental health outreach in colleges, hostels, and workplaces are policy ideas. Training non-specialist health workers in psychological first aid and including mental wellness education into school curricula may also be preventative. A new study illuminates crucial themes and provides new research avenues. Psychological autopsy, longterm suicide patient monitoring, and data from several centres can assist future research. Community-based, interdisciplinary strategies are needed to reduce urban hanging suicides and foster transparency, solidarity, and tenacity.

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