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Original Research Article

A STUDY ON INCIDENCE, MODE AND RISK FACTORS OF SUICIDE IN PATIENTS COMING IN EMERGENCY OF GMC KANNAUJ

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ABSTRACT

Background: Suicide remains a critical global public health issue, claiming approximately 727 000 lives each year1, which equates to one death every 40 second2. The global age standardised suicide rate stands at roughly 9.2 per 100 000 population3, reflecting a widespread and deeply rooted concern across nations. The objective is to study and find the incidence, mode and risk factors of suicides and attempted suicides in patients coming in emergency of Government Medical College Kannauj

Materials and Methods: The study design was a hospital-based, cross-sectional study aimed at finding out the incidence, mode and various risk factors associated with suicide. A semi-structured proforma was prepared pertinent to selecting the sample cases of attempted suicide admitted in the emergency department. The proforma consists of various sociodemographic details such as name, age, sex, socioeconomic status, past and family history of any physical or mental illness, history of previous attempted suicide, cause for the present attempt etc

Results: The most frequent method was poisoning or intoxication (68 %). Hanging accounted for 22 % of cases, while other methods such as jumping accounted for 10 %. Reasons were varied: family issues were the most common motive (42 %), followed by psychiatric issues (36 %). Love affairs accounted for 10 %, and the cause was unknown or suspicious in 12 %..Only 16 % reported a previous attempt; the remaining 84 % had no prior attempts recorded. A family history of attempted or completed suicide was rare (6 %).Clinical or self reported mental illness was present in 20 % of individuals, absent in 78 %, and ambiguous in one case.

Conclusion: According to this study, the patterns mirror national and global trends showing that suicides are most common among youth, particularly males, and are influenced by socio economic stressors and limited access to mental health care.

Keywords: suicide, mental illness, psychiatric issues.

INTRODUCTION

Suicide remains a critical global public health issue, claiming approximately 727 000 lives each year,[1] which equates to one death every 40 second.[2] The global age standardised suicide rate stands at roughly 9.2 per 100 000 population,[3] reflecting a widespread and deeply rooted concern across nations. Alarmingly, suicide is the third leading cause of death among individuals aged 15–291,

underscoring the vulnerability of youth and young adults during formative life transitions. Moreover, approximately 73 % of these deaths occur in low and middle income countries,[1] where access to mental health services is often limited and stigma remains high. Men are more than twice as likely to die by suicide compared with women,[4] highlighting a significant gender disparity that may be influenced by cultural norms, emotional suppression and method lethality. One of the most common methods—particularly in rural areas—is pesticide self-poisoning, which accounts for nearly one fifth of global suicides,[5] pointing to the urgent need for safer pesticide regulation and storage. Despite these concerning figures, some nations have reported declining suicide rates after implementing effective prevention strategies—such as restricting access to lethal means, promoting responsible media reporting, fostering socio emotional life skills and ensuring early identification and management of suicidal behaviour,[6] and Sri Lankan data suggest that restricting highly toxic pesticides can halve national suicide rates.[7] These approaches not only save lives but also foster a more compassionate and informed society that supports individuals in psychological distress.

In 2022, India witnessed a tragic and unprecedented rise in suicide deaths, recording 170 924 cases,[8] the highest number ever documented in the country. This represents a 4.2 % increase from the previous year and coincides with a rise in the national suicide rate from 12.0 to 12.4 per 100 000 population,[8] significantly exceeding the global average of about 9.2 per 100 0003. These alarming figures highlight the immense emotional and psychological burden faced by individuals across the nation and point to systemic gaps in mental health awareness, access to care and socio economic supports.

According to the National Crime Records Bureau (NCRB) 2022 data, 8 176 suicides were reported in the state of Uttar Pradesh.[9] The suicide rate was only 3.5 per 100 000 population, ranking the state 31st among India's 28 states and 8 Union territories. A deeper demographic analysis reveals that housewives accounted for 19.95 % of these deaths (1 631 cases), underscoring the psychological burden and domestic stress faced by women in traditional roles. Unemployed individuals represented 18.85 % of suicides (1 541 cases), reflecting the mental health toll of financial insecurity and lack of livelihood. Students accounted for 12.96 % of suicides (1 060 cases), pointing toward rising academic pressure, mental health stigma and insufficient psychosocial support.[9] Most concerning, however, is that farmer suicides in Uttar Pradesh increased by about 42 % compared with 2021, indicating worsening agricultural distress, debt burdens and systemic neglect of rural mental health needs.[10] These figures highlight the urgent need for targeted mental health interventions, economic support programmes and community based outreach, particularly for vulnerable subgroups such as farmers, homemakers, unemployed individuals and students.

Aims and Objectives

- Primary Objective- To study and find the incidence, mode and risk factors of suicides and attempted suicides in patients coming in emergency of Government Medical College Kannauj.
- Secondary Objectives-
  1. To estimate the incidence of suicides and attempted suicides in patients coming in emergency of GMC Kannauj.
  2. To assess the mode of suicides in patients coming in emergency of GMC Kannauj.
  3. To determine the risk factors associated with the suicides in patients coming in emergency of GMC Kannauj.

MATERIALS AND METHODS

The study was conducted after obtaining the approval of the Ethical and Scientific Committee at DBRAGMC Kannauj, a tertiary care centre. The study design was a hospital-based, cross-sectional study aimed at finding out the incidence, mode and various risk factors associated with suicide. A semi-structured proforma was prepared pertinent to selecting the sample cases of attempted suicide admitted in the emergency department. The proforma consists of various sociodemographic details such as name, age, sex, socioeconomic status, past and family history of any physical or mental illness, history of previous attempted suicide, cause for the present attempt etc. After getting informed, the patient along with their caregivers (parents many at times) were interviewed based on the points mentioned in the sample intake proforma. A total of 50 cases were registered, all the cases are of attempted suicide, mostly belonging to the adolescent age group. The information of suicide and attempted suicide cases reported in the emergency of GMC Kannauj have been filled with the help of a semi-structured interview schedule, the information about demographics, family, and housing and environment-related, and chronic physical and mental illness and other significant factors have been collected and Data Processing and Analysis were done using SPSS version 23 trial version.

Study Population

Inclusion criteria

Who attempted suicide and living, or who in case of death, first-degree caregiver would provide the information.

Exclusion criterion

Who doesn't meet the inclusion criteria or denied to participate in the study.

Ethical clearance

Ethical approval was taken from IEC (Institutional Ethics Committee), GMC Kannauj.

RESULTS

Age: The individuals were young. Ages ranged from adolescence to late middle age with a mean of 23.7 years and a standard deviation of 10.48 years.
Family size: The number of family members ranged from two to twelve (approximate). The mean family size was 5.7, indicating that most came from medium sized households.
Sex: Two thirds (33/50) were female, and one third (17/50) were male.
Education: Ten per cent were illiterate and six per cent had only primary schooling; the majority had some level of secondary education or higher. Specifically, 24 % had completed secondary school, 16 % had high school, 18 % had an intermediate degree and 26 % were graduates.
Marital status: The sample was evenly split, with 60 % single and 40 % married.
Occupation: Housewives constituted one third of cases (34 %), students made up 38 %, and the remainder were either unemployed/no occupation (14 %) or working class/ employed (14 %).
Socio economic status: An overwhelming majority (90 %) were coded as "lower/poor"; only 10 % were from the middle class.
Addiction history: Most individuals (92 %) had no recorded addiction. Tobacco use was noted in 6 % of cases and alcohol use in 2 %.
Type of family: Nuclear families were more common (60 %) than joint families (40 %).

Table 1: Distribution of study subjects according to sociodemographic features

Age	**Mean 23.7 ± 10.48 years**		
Sex	66% female	34% male	
Education	16% illiterate to primary	84% above secondary to graduates	
Marital status	60% single	40% married	
Occupation	38% Students	34% Housewives	28% others
Addiction	92 % no addiction	6% tobacco	2% alcohol
Type of family	60% nuclear	40% joint	
Socioeconomic status (BG Prasad)	90% lower class	10% Middle class	

Table 2: distribution of study subjects as per Suicide related variables

Method used for suicide	68% Intoxication	22% hanging	10% Other
Reason for suicide	42% family issues	36% Psychiatric issues	22% Other
History of previous suicide attempts	84% no prior attempts	16 prior attempts present	
Family history of suicide	94% no family history of suicide	6% history of suicide in family present	
Mental illness	20% mental illness present	78% mental illness absent	2% Ambiguous
Physical illness	6% present	94% absent	
Recent deaths in family	14 % recent death in family	86 % no recent deaths in family	

Method used: The most frequent method was poisoning or intoxication (68 %). Hanging accounted for 22 % of cases, while other methods such as jumping accounted for 10 %.
Reason for suicide: Reasons were varied: family issues were the most common motive (42 %), followed by psychiatric issues (36 %). Love affairs accounted for 10 %, and the cause was unknown or suspicious in 12 %.
History of previous suicide attempts: Only 16 % reported a previous attempt; the remaining 84 % had no prior attempts recorded.
Family history of suicide: A family history of attempted or completed suicide was rare (6 %).
Mental illness: Clinical or self reported mental illness was present in 20 % of individuals, absent in 78 %, and ambiguous in one case.
Physical illness: Only 6 % reported a past or present physical illness.
Recent death in the family: Fourteen per cent had experienced a recent death in the family. In one case (2 %), that death was due to suicide; the remainder were due to other causes.

DISCUSSION

The present dataset highlights a predominance of suicide among young people. The average age was approximately 24 years, and nearly all individuals were under 45. This mirrors national statistics in which more than 71 % of suicides in India occur among people below the age of 44 and over a third occur before age 30.[11] Such an age distribution underscores the vulnerability of adolescents and young adults, who face intense educational, occupational and familial pressures. The scoping review by Senapati et al. notes that adolescence is characterised by rapid developmental changes and that mental health conditions are common during this period,[12] which may increase the propensity for self harm.
Females constituted two thirds of the sample, whereas population level studies typically show a narrower male to female ratio of about 1.4 : 111. This over representation could indicate gender specific stressors such as domestic violence, dowry related disputes or restricted autonomy. Alternatively, sampling bias or under reporting of male suicides could have influenced the ratio. Regardless, the finding emphasises the need to address gendered determinants of suicide.
Socio economic disadvantage permeated the cohort: 90 % were classified as lower or poor. Economic distress is recognised as a risk factor for adolescent suicide; the recent scoping review found economic problems, though less common than mental or

familial factors, still played a contributory role.[12] Inadequate income may exacerbate feelings of hopelessness and limit access to education, healthcare or social support. Most individuals lived in nuclear families, which may offer fewer social buffers than joint family systems. The loss of a family member, reported by 14 %, represents another significant stressor.

Educational attainment was relatively high—more than two thirds had completed secondary school or higher. Students accounted for 38 % of the occupational categories. Academic stress is a prominent trigger for adolescent suicide,[12] suggesting that educational settings are critical venues for mental health interventions. Despite the importance of mental health, only 20 % of individuals had a recorded mental illness. In contrast, Senapati et al. reported that mental health problems were the most commonly identified risk factor in adolescent suicides (about 54 % of cases).[12] The discrepancy likely reflects under diagnosis and stigma in the current cohort.

Poisoning or intoxication was the method used in two thirds of cases. Nationally, poisoning and hanging account for roughly 34.8 % and 31.7 % of suicides respectively.[11] Ready access to pesticides and household poisons in rural or semi urban areas makes poisoning a common choice. Restricting access to lethal means could therefore reduce suicide deaths. Family issues were the leading recorded reason for suicide, followed by psychiatric problems and love affairs. These motives align with the risk factors identified in the scoping review, which lists mental health problems, negative family interactions, academic stress, violence, economic distress and relationship problems among the major precipitants[2]. Interestingly, only 16 % had a prior attempt and 6 % had a family history of suicide, reinforcing the difficulty of predicting suicide based on past behaviour.

Taken together, the findings call for multi faceted prevention strategies. Improving mental health services for youth, addressing socio economic deprivation, supporting women and families, and restricting access to poisons are key. Better data collection on mental health and psychosocial circumstances would help refine these interventions.

CONCLUSION

This study examined a cohort of 50 individuals with socio-demographic and clinical data related to suicide. The dataset revealed that the majority were young, unmarried females living in nuclear families with low socio economic status. Most came from rural areas and used a single method of suicide; mental health issues and family or relationship problems were the dominant precipitating factors, yet only one in five had a documented mental illness and very few had a prior suicide attempt or family history. These patterns mirror national and global trends showing that suicides are most common among youth, particularly males, and are influenced by socio economic stressors and limited access to mental health care. The findings underscore the need for early identification of psychological distress, especially in young adults, and the integration of mental health services into community and family settings. Targeted interventions for vulnerable groups—such as women in domestic roles, unemployed individuals, students and farmers—are essential, alongside broader efforts to improve mental health literacy and restrict access to lethal means.

Future directions: To build on these findings, we propose several priority areas for future work. First, larger, regionally diverse cohorts should be studied to confirm whether the observed patterns hold across different populations and contexts. Longitudinal designs that follow individuals over time and incorporate qualitative methods would help clarify pathways to suicide and identify early warning signs. Research should also systematically examine protective factors and comorbid influences such as social support, substance use and physical illness. There is a need to develop, implement, and rigorously evaluate community-based interventions—particularly those that combine mental health education, economic assistance, and counselling for high-risk groups identified in this study. Strengthening suicide surveillance through comprehensive data linkage, and investing in targeted mental health literacy campaigns that reduce stigma and encourage help seeking are critical steps toward effective prevention.

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REFERENCES

1. World Health Organization. Suicide [Internet]. Geneva: WHO; 2023 [cited 2025 Jul 28]. Available from: https://www.who.int/news-room/fact-sheets/detail/suicide. ↩ ↩2 ↩3
2. Pan American Health Organization. Mental health and suicide prevention [Internet]. Washington, DC: PAHO; 2023 [cited 2025 Jul 28]. Available from: https://www.paho.org/en/topics/mental-health-and-suicide-prevention. ↩
3. Zeng Y, Deng F, Miao Y, et al. Suicide and self-harm in China: a scoping review of epidemiological trends and prevention approaches. Front Public Health. 2025;13:1210172. ↩ ↩2
4. O'Keefe LM, Poskitt TJ, Rymer CA, et al. Men's experiences of mental illness stigma across the lifespan: a scoping review. Stigma and Health. 2021;6(3):302–311. ↩
5. World Health Organization. Suicide (health topics) [Internet]. Geneva: WHO; 2022 [cited 2025 Jul 28]. Available from: https://www.who.int/health-topics/suicide. ↩
6. World Health Organization. LIVE LIFE: An implementation guide for suicide prevention in countries [Internet]. Geneva: WHO; 2021 [cited 2025 Jul 28]. Available from: https://www.who.int/publications/i/item/9789240027805. ↩

7. Gunnell D, Fernando R, Hewagama M, et al. The impact of pesticide regulations on suicide in Sri Lanka. Int J Epidemiol. 2007;36(6):1235–1242. ↩
8. Times of India. 10 Indian states with maximum suicide rates [Internet]. Mumbai: Bennett, Coleman & Co. Ltd.; 2024 [cited 2025 Jul 28]. Available from: https://timesofindia.indiatimes.com/india/10-indian-states-with-maximum-suicide-rates/articleshow. ↩ ↩2
9. Hindustan Times. NCRB report: Suicide figures for Uttar Pradesh reveal worrying trends [Internet]. New Delhi: HT Media; 2023 [cited 2025 Jul 28]. Available from: https://www.hindustantimes.com/india-news/ncrb-report-suicide-figures-up. ↩ ↩2 ↩3 ↩4 ↩5
10. Triumph IAS. Farmer suicides in India: Key findings from NCRB 2022 [Internet]. New Delhi: TriumphIAS; 2024 [cited 2025 Jul 28]. Available from: https://www.triumphias.com/blog/farmer-suicides-india-ncrb-2022-report. ↩
11. Vijayakumar L. Indian research on suicide. Indian Journal of Psychiatry. 2010;52(Suppl 1):S291–S296pmc.ncbi.nlm.nih.govpmc.ncbi.nlm.nih.gov.
12. Senapati RE, Jena S, Parida J, Panda A, Patra PK, Pati S, Kaur H, Acharya SK. The patterns, trends and major risk factors of suicide among Indian adolescents – a scoping review. BMC Psychiatry. 2024;24:35pmc.ncbi.nlm.nih.govpmc.ncbi.nlm.nih.gov.