

Socio-Demographic Profile of Suicidal Cases Autopsied at Tertiary Care Centre in Uttarakhand: A Retrospective Study

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Abstract

Suicide is an imperative public health problem that needs social as well as medical attention. In India, 134516 people committed suicide in 2018 and also there is an increase in the number of suicide cases in Uttarakhand as well. The aim was to analyse the trend of suicidal deaths autopsied at our center concerning different parameters like age, gender, method of suicide, reason for suicide, to know the demographic pattern and its cause. The autopsy reports and inquest papers of suicidal cases autopsied at AIIMS Rishikesh were included for evaluation. Out of total 19.49% of total autopsies were of suicidal deaths. Majority of the victims were males (76.42%) compared to females (22.76%). The average age of victims was 35 years and 76.4% belonged to the age group 14 to 43 years. The risk of suicide was more prevalent in urban population. Among the total victims, 39.83% were in jobs. Regarding the reason behind suicide, family dispute was most common. The most common mode of suicide was hanging followed by poisoning and drowning. Organophosphates was the most repeated poison consumed in suicides by poisoning. About 75% cases were complete suicides and couldn't receive medical care. Majority of the cases belonged to Rishikesh police station. The important aspects of suicides among young generation is peer pressure which can be from family, institutional, or work etc. An effective strategy needs to be devised to combat the issue.

Keywords: *Suicides; Autopsy; Hanging; Poisoning; Family disputes; Depression.*

Introduction

Suicide is an imperative public health problem that needs social as well as medical attention. Suicide not only causes loss of an individual's life but also mental trauma to the family of deceased. It is estimated that suicide is among the top twenty leading causes of death worldwide.⁽¹⁾ Around 8,00,000 people die every year from suicide, which is one person every 40 seconds.⁽¹⁾ In our society, mental health issues are often stigmatized, people hesitate to accept their mental health problems.

There are also legal issues associated with suicide many cases go unreported which is one of the major causes for under-reporting of number of suicides. An increase in suicides in third world countries as compared to developed world is due to prevalence of higher degree of socioeconomic and behavioral risk factors for suicide.⁽²⁾ Many demographic parameters like age, sex, occupation, and method of suicide may vary between different regions, societies, etc.⁽³⁾

In India, 134516 people committed suicide in 2018. ⁽⁴⁾ The rate of suicide has increased from 9.9 of 2017 to 10.2 in 2018.⁽⁴⁾ In 2018, the majority of suicide cases were reported from Maharashtra (17972), Tamil Nadu (13896), West Bengal (13255), Madhya Pradesh (11775), and Karnataka (11561). These five states accounted for 50.5% of total suicide cases in the country.⁽⁴⁾ The total number of cases reported from Uttarakhand was 421 in 2018 which is 27.2% higher than the previous year.⁽⁴⁾

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After the mortuary of All India Institute of Medical Sciences (AIIMS) Rishikesh became functional, we noticed an appreciable frequency of suicidal cases being brought for autopsy. The profiles of victims and method of suicides adopted by them were varying. There was an increasing number of cases from a particular area. The following observations were the reasons behind this study. The aim was to analyse the trend of suicidal deaths autopsied at our center concerning different parameters like age, gender, method of suicide, reason for suicide, to know the demographic pattern and its cause.

Methodology

A retrospective study was conducted from October 2018 to June 2020 in the department of Forensic Medicine & Toxicology at AIIMS Rishikesh. The autopsy reports and inquest papers of suicidal cases were included for evaluation. AIIMS Rishikesh covers autopsy cases from seven police stations distributed in 3 districts of Uttarakhand. The following parameters were included for evaluation age, gender, occupation, area of residence, place of death, method of suicide, type of poison ingested in poisoning deaths, and police station to which the case belonged.

Results

A total of 631 cases were autopsied during the study period, out of which 123 cases (19.49%) were of suicidal deaths. Males were predominant 76.42% (n = 94) than females 22.76% (n = 28) with male: female ratio of 3.3:1. The average age of victims was 35 years and 29.2%

belonged to the age group 24 to 33 years (Figure 1). The risk of suicide was more prevalent in urban population (n=81, 65.85%) compared to rural population (n=42, 34.14%). Among the victims, 39.83% (n = 49) were in jobs, 37.39% (n=46) were jobless including housewives, 19.51% (n = 24) were students, 3.25% (n = 4) were retired persons (Figure 2). Regarding reason for suicide, family dispute was most common (n=48, 39.02%) followed by depression (n=33, 26.82), love affair (n=11, 8.94%), and mentally challenged (n=4, 3.25%). The reason was unknown in 21.13% (n=26) cases (Figure 3). The most common mode of suicide was hanging (n=61, 49.59%), followed by poisoning (n=46, 37.39%) and drowning (n=9, 7.31%). In suicides by poisoning, the most common poison ingested was organophosphates (n=20, 43.47%) followed by phosphorous compounds (n=6, 13.04%), toilet cleaner (n=2, 4.34%), THC + Opioid + Morphine + Benzodiazepine (n=1, 2.17%) and the nature of poison was unknown in 34.78% (n=16) cases. Most cases (74.79%, n=92) did not receive any medical facility before death whereas only 25.20% (n=31) cases were brought to hospital but did not survived. AIIMS Rishikesh has jurisdiction of 7 police stations for medico-legal autopsy. These police stations are Rishikesh, Raiwala, Muni kireti, Laxman jhula, Narendra nagar, Ranipokhri and GRP Dehradun. Most autopsies were done under Rishikesh jurisdiction (n=85, 69.10%) including hospital admitted deaths, followed by raiwala (n=13, 10.56), muni kireti (n=11, 8.94%), laxmanjhula (n=7, 5.69%), narendranagar (n=2, 1.62%), ranipokhri (n=4, 3.25%), and GRP Dehradun (n=1, 0.81%).

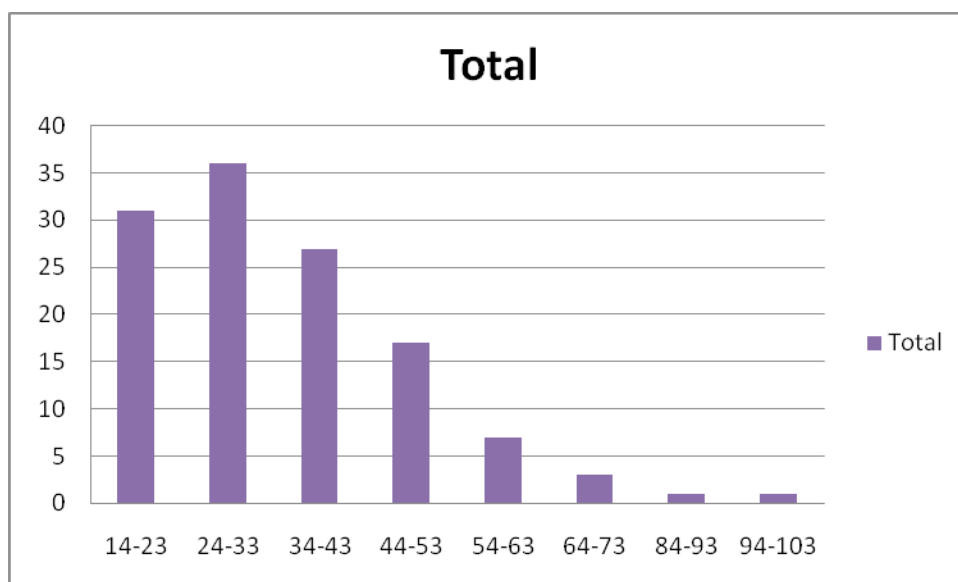


Figure 1: Age distribution among suicidal cases

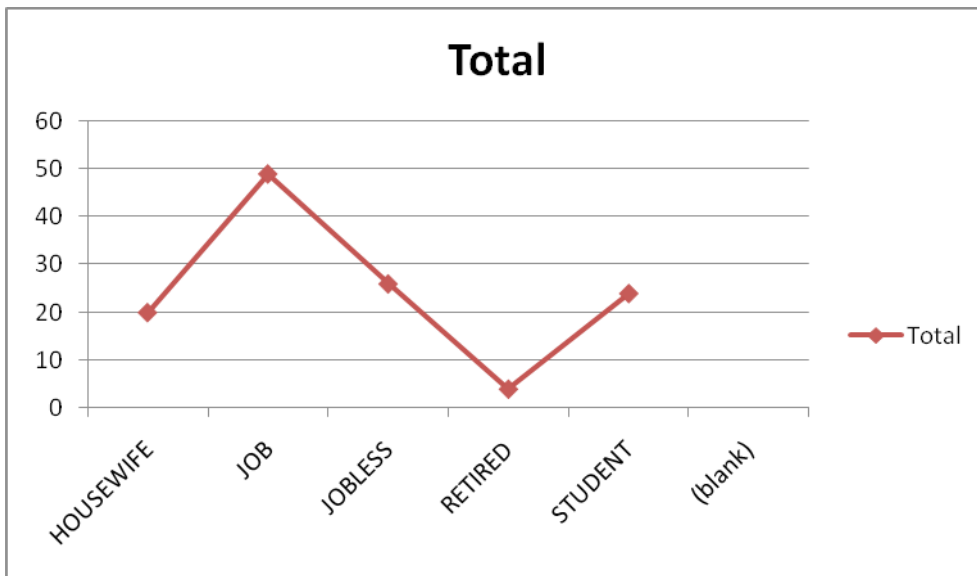


Figure 2: Occupation of victims of suicide.

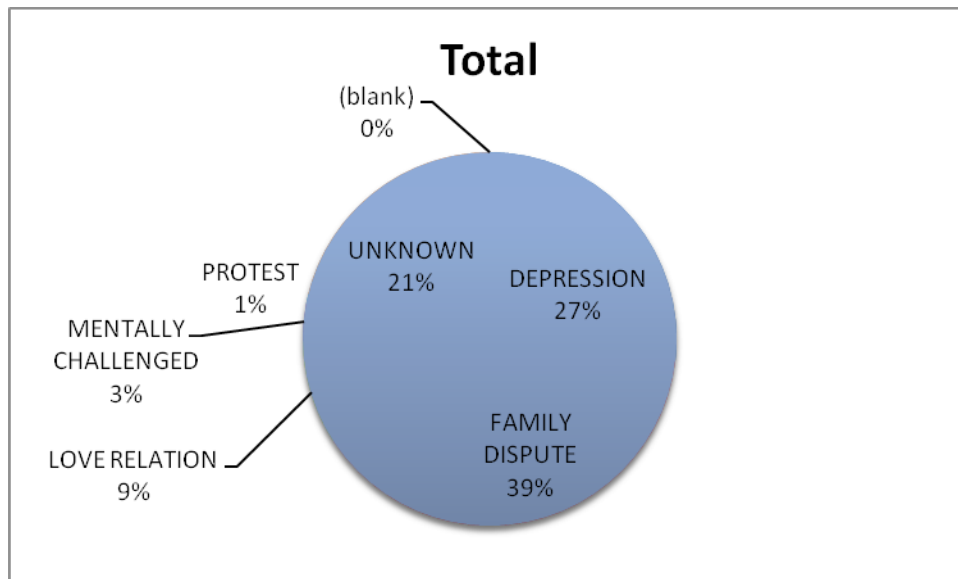


Figure 3- Reasons for suicide among cases.

Discussion

The present study demonstrates the sociodemographic profile of complete suicide cases brought for autopsy at our center. Suicidality represents a major healthcare problem particularly in low and middle-income countries.⁽⁵⁾As a developing nation, India is also struggling with the same issue and efforts are being made to combat. The study showed men were more vulnerable to suicide compared to women (76.42% v/s 22.76%) with a ratio between the two was 3.3:1. A study by Nunez et. al. found similar results with 86% men of the total victims and the ratio between men: women

were 6:1⁽⁶⁾ Suicidal attempts were higher in females but the rate of complete suicide was comparatively higher in males.⁽⁹⁾ Conversely, suicide was more common among males but suicidal behavior was more common among females.⁽⁷⁾ A similar retrospective study done in Kuwait from the year 2014-2018, included 297 cases and showed that 81.1% were males and surprisingly of all cases 60.2% were Indians and only 7.4% were Kuwaitis.⁽⁸⁾

The average age of victims committing suicide by any method was 35 years and the most susceptible age group was 14-33yrs. Many evidences are available which suggests that the young individuals in their 2nd to

3rd decade of life were the major contributors to overall suicidal deaths.⁽⁵⁾ Nunez-Samudio V et. al. found 20-29 years as the most affected age group.⁽⁶⁾ A systematic review showed an overall high prevalence of suicide rates in the 20-29 years age group but females were predominant in committing suicides for age-group under 30 years whereas males were leading for age group 30 years or older.⁽¹³⁾ Regarding the area of population more vulnerable to suicides, urban population reported more deaths compared to rural. The possible reason could be the stress at workplace, busy life style, high cost of living etc.

India's contribution to the global suicide rate has increased from 25.3% in 1990 to 36.6% in 2016 among women and from 18.7% to 24.3% among men.⁽¹⁰⁾ In a study conducted among different states of India, suicide rates per one lakh population increased from 14.9 in 2001 and 15.4 in 2016. It was also observed that developed states reported higher suicide rates as compared to less developed ones.⁽¹¹⁾ India is ranked 19th among the world in the context of suicides.⁽¹²⁾ One of the sorrowful aspects of suicides in India is farmer suicide, it is mainly linked to marginal return from farmland, lack of income streams, indebtedness, crop failure due to factors like rain, loss of social status, and failure to fulfill social role compels a person to commit suicide.⁽¹²⁾

The present study found family disputes and depression were the most common cause of committing suicides. A similar study showed 33.7% of people commit suicide for personal reasons and 24.4% for unknown reasons, in which no specific cause was found.⁽¹¹⁾ A strong association was observed between suicide, comorbid physical or psychiatric ailments and substance abuse, especially alcohol.⁽¹²⁾ Suicides are mostly related to psychiatric problems like depression, as demonstrated in another study.⁽⁵⁾ Among the low socio-economic states of the country, mental illness, alcohol abuse and interpersonal difficulties were the major problems.⁽¹³⁾ The most preferred method of suicide by any gender in our study was hanging (49.59%) followed by poisoning (37.39%). The method of suicide preferred by males was also hanging followed by poisoning and drowning. Comparatively among females, the method of choice was poisoning followed by hanging. Many studies found similar results of hanging as the most common method of suicide followed by self-poisoning and use of firearms.⁽⁵⁾ The use of firearms is more prevalent in the western world due to ease in issuing of licensed weapons as compared to our country where it is difficult to obtain

the license, however the incidences of firearm suicides are not uncommon among armed forces. Contrary to our findings Dandona R et. al. found poisoning as the leading method of suicide followed by hanging.⁽¹¹⁾ Similarly, Rane A et al. found hanging as a leading method followed by poisoning. Self-Immolation was also common among women as seen in dowry deaths.^(13,17) Hanging requires any household material which can be used as a ligature, mostly committed when alone.

The type of poison most commonly consumed was organophosphates in 43.47% autopsied cases. The type of poison was unknown in 34.78% of cases. Several studies also found pesticides as a leading cause of poisoning especially organophosphate compounds.^(5,11-15) Easy availability at home and easy access to household poison is a possible cause of suicides due to poisoning. The green revolution averted the deaths from famine but also introduced pesticides such as Parathion and Endrin's to poor rural people who were not trained and equipped to use and store it.

In the present study, most victims of suicide were in the job (39.83%), followed by jobless (21.13%), students (19.51%) and housewives (16.26%). A stressful environment at work may be the possible risk factor for suicidal thoughts.⁽¹⁸⁾ In a study conducted by Lim AY et. al. In Korea, it was seen that out of 124 participants, 39.5% and 15.3% presented with clinical levels of depression and suicidal ideation respectively.⁽¹⁹⁾ Another cross-sectional study conducted by Ahn SH et. al. showed that in woman workers, suicidal ideation/attempt significantly correlated with the physical environment, lack of reward, and occupational climate. But in cases of men workers, depression rather than job stress correlated with experiences of suicidal ideation/attempt.⁽²⁰⁾ Among medical residents, burnout is a common phenomenon due to overburden of work.⁽²¹⁾ The study also showed that 64.05% of interns, 40% of junior residents show burnout thoughts. Surgical specialty residents are more prone to burnout phenomenon. No gender difference was observed in burnout.⁽²¹⁾

One of the important aspects of suicides among young generation is peer pressure. Internet and social media is an easily accessible platform to communicate stress but unfortunately, different method of suicides are also not difficult to find.^(15,16) A relationship was observed between internet use and self-harm behavior particularly associated with internet addiction; which is very common in vulnerable age groups of our study.⁽¹⁶⁾

The suicidal death rate in India is higher than expected for its socio-demographic index level, especially for women; with substantial variations in the magnitude and man to woman ratio between the states.⁽¹⁰⁾The government should develop suicide prevention programs considering these variations among different states and strata of society to address the specific issues leading to suicides.

Conclusion

The rate of suicides is increasing at an alarming pace in our region. The young aged male individuals contribute to the major proportion of total suicides. Though urbanization is essential for economic growth, it is also posing risk of suicides in young individuals because of increasing stress to meet the survival needs. Individuals in jobs are committing more suicides than jobless which indirectly represent the stressful environment they are working in. Persons with suicidal thoughts or under psychiatric medication or depression must not be left alone because majority of the victims committed suicides when left alone. Even minor psychiatric issues should not be ignored and proper consultation needs to be taken. Norms should be set by the government over selling of agricultural insecticides as it is very easy to purchase such poisons. Gender equality could significantly reduce the number of suicides in females.

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