**Sociodemographic, clinical profile, and psychiatric morbidities among patients with attempted suicide in a tertiary care center: A study from Central India**

**ABSTRACT**

**Background:** Suicide is a major public health concern and is considered one of the leading causes of death globally. Previous suicidal attempts can be considered as a predictor of underlying psychiatric illness. Identifying factors behind suicidal attempt can help mental health professionals for early diagnosis and treatment as well as designing effective suicide prevention strategies. **Aim:** The aim of the study is to assess sociodemographic, clinical characteristics, and prevalence of psychiatric morbidities among patients with attempted suicide. **Methods:** A cross-sectional study was conducted in the emergency department of tertiary care hospital; patients of attempted suicide attending emergency from January 1, 2014, to January 1, 2020, constituted the sample for the study. Data were collected using semi-structured questionnaire which contained sociodemographic and clinical variables. All the subjects were administered mini-international neuropsychiatric interview (MINI), MINI Kid was applied for subjects <18 years, and MINI Plus was applied for subjects above 18 years. Patients were diagnosed according to the ICD-10 Classification of Mental and Behavioral Disorders for research. **Results:** Suicide attempt was seen more commonly in males, and the most common age group is between 21 and 40 years residing in urban settings. The most common method was consumption of unknown substances (75.35%). Factors leading to suicide are multidimensional in nature. 30.4% of the patients had impulsive traits. 86.5% of people who attempted suicide had a history of psychiatric illness. Detailed assessment of patients for psychiatric illness and psychosocial factors is crucial for planning suicide prevention strategies and policymaking. **Conclusions:** Young population is at high risk for suicide. More than 80% of these have diagnosable psychiatric illness.

**Keywords:** Attempted suicide, demographic characteristics, psychiatric morbidity

Suicide attempt is defined as “any act of self-damage inflicted with self-destructive intentions.”[1] Suicide is a major public health concern in developing countries which impose challenging task for its prevention to public health authorities. Self-inflicted death ranks among the tenth leading cause of death worldwide.[2] According to the WHO, 900,000 people worldwide die as a result of suicide each year, 100–300/million people commit suicide annually.[3] India ranks tenth with an overall suicide rate of 97.4/million, with approximately 114/million in males and 80/million in females.[4]

Suicide can be considered as multifactorial in nature which leads to family, society, and economic loss and has become one of the severe social problems which need more intensive...
attention. In-depth understanding of the risk factors is crucial for preventing suicide. Suicide risk factors have attracted a great deal of research attention in India. Many studies have investigated the influence of demographic, sociopsychological, economic, lifestyle-related factors, and physical illness on suicidal behavior.

Patients with attempted suicide attending emergency department of tertiary care hospitals in India is increasing tremendously. Therefore, it is need of the hour to make a comprehensive analysis of suicide attempters and explore the new comprehensive rescue mode, including somatic and psychological treatment. Identifying factors behind suicidal attempt can help mental health professionals and policymakers for early diagnosis, intervention, treatment, as well as designing effective suicide prevention strategies. This study was conducted with an objective to describe the sociodemographic, clinical profile, and underlying mental illness of suicide attempters attending the emergency services of tertiary health institute in Central India.

MATERIALS AND METHODS

After obtaining institutional ethical committee approval, the study was carried out at the Emergency Department, Gandhi Medical College, Bhopal, from January 1, 2014, to January 1, 2020. As part of a tertiary care institute, patients with attempted suicide were treated at emergency and inpatient services; once medically stable, they are referred to psychiatric outpatient services for psychiatric evaluation and treatment by the psychiatrist. A total of 710 patients of attempted suicide constituted sample for the study. Subjects were detailed about design and nature of the study. Subjects who gave informed consent were recruited for study, and in case of minor subjects, informed consent was taken from their parents. Interview with the patients’ family members was carried out for additional information if needed. Data were collected using semi-structured questionnaire developed on a basis of our literature review containing sociodemographic and clinical variables. All the subjects were administered mini-international neuropsychiatric interview (MINI), MINI Kid was applied for subjects <18 years, and MINI Plus was applied for subjects above 18 years. Structured questionnaire was used to assess for dementia and mental retardation based on the International Classification of Diseases and Related Health Problems 10th edition as these two diagnoses are not included in MINI interview schedule.

Statistical analysis

Categorical variables are presented as counts and percentages. The Chi-square and Fisher's exact tests were used to compare the distribution of categorical variables among different groups. A $P < 0.05$ was considered statistically significant.

RESULTS

The demographic characteristics of the suicide attempters were compared among all groups. As shown in Table 1, most of the cases were in the age group of 21–40 years (59.15%) and the least (1.12%) were in the age group of 60 years and above. The result is statistically significant. The mean age of the sample was 27.72 years (standard deviation ± 10.66).

Males (52.39%) were more than females (47.60%). Majority of the patients belonged to Hindu religion (80.98%). This result was statistically significant. 59.5% of the patients were married, and majority of them have achieved secondary schooling (46.4%) and a second majority were illiterate. Most of the patients were urban dwellers (51.4%) and stayed in joint family (53%).

DISCUSSION

This study shows the data on sociodemographic and clinical profile of the patients who presented to a tertiary care hospital with suicide attempt and were subsequently referred to psychiatric department for further evaluation.

It was observed that majority of the patients were male (52.39%), but the gender gap was not very significant as 47.60% were female, and this observation is in line with the reports from hospital-based studies where significant gender difference is not found. Even in our country, major gender difference is not seen in patients with history of suicide attempt.

The mean age of our sample is 27.72 years, most of the attempts were done by people in age group of 21–40 years (59.15%), and these people are most vulnerable as they undergo major transitions in life. In this study, we found that majority of the attempters were married which is a common finding in Indian studies, but it negates the assumption that marriage can be considered as a good prognostic factor. Similar findings are observed by multinational study by Fleischmann et al. where they found that subjects from Indian centers who attempted suicide were more frequently married than single. Most of the subjects were belonging to joint family, but the gap is not significant which can be seen in a way that even in a large family setting person's suffering and mental problems can go unnoticed. The cases were predominantly from urban background which reflects the transition of the Indian society and the associated stress which it has accompanied. Literacy was not significantly associated with rate of suicide attempt as 46.6% of the people with education up
to secondary school had also attempted suicide whereas people who were illiterate had half the figure.

Factors associated with suicide attempt
Most common method employed to execute self-harm was consumption of unknown substances (insecticides, clophos, phenyl, and urea) (75.35%) followed by drug overdose (12.11%) and hanging (6.1%) [Table 2]. Similar findings have been found in other hospital-based study. Unrestrictive availability of insecticides and prescription drugs is the contributory reason of suicide death. However, it was observed in previous studies in India that when the use of pesticide was limited, the mode of suicide changed, while the total number of suicides remained static. Nevertheless, as poisoning is the most common method of suicide attempt, a myriad of steps should be taken by government and healthcare facilities to prevent the distribution of these substances and create fast-track suicide-dedicated units in hospital, which should comprise a team of medical professionals and psychiatrists which can lower the mortality of suicide attempts.[19]

It has been reported in various Indian studies that recent life events which are presumed to be stressful can be a risk factor for suicide attempt.[20-22] In our study, we found that family quarrel, marital disharmony, history of psychiatric illness, financial stressor, and recent drug use have found to be significant factor associated with increased risk of suicide attempt.

Psychiatric illness and suicide
There are fluctuation in type and frequency of psychiatric disorders noted in suicide attempters in India, but depressive disorder is commonly noted. In this study, we found that 30.4% of patients had impulsive traits, followed by mood disorder which is seen in 27.46% of patients; this finding is also observed in a previous Indian study.[23] Patients with mood disorder were more vulnerable than others considering planned attempts with high intensity. We found that 86.5% of the people who attempted suicide had some kind of psychiatric illness, this finding is similar to previous study where they found that 82% of the subjects who attempted suicide had diagnosable

| Demographic profile | Male | Female | Total, n (%) | χ² | P |
|---------------------|------|--------|--------------|----|---|
| **Age**             |      |        |              |    |   |
| <20                 | 85   | 131    | 216 (30.43)  | 24.501 | 0.00002 (S) |
| 21-40               | 237  | 183    | 420 (59.25)  |    |   |
| 41-60               | 44   | 22     | 66 (9.29)    |    |   |
| >60                 | 6    | 2      | 8 (1.12)     |    |   |
| Total               | 372  | 338    | 710          |    |   |
| **Religion**        |      |        |              |    |   |
| Hindu               | 310  | 265    | 575 (80.98)  | 12.695 | 0.005 (S) |
| Muslim              | 49   | 70     | 119 (16.7)   |    |   |
| Christian           | 4    | 2      | 6 (0.84)     |    |   |
| Sikh                | 9    | 1      | 10 (1.4)     |    |   |
| **Marital status**  |      |        |              |    |   |
| Unmarried           | 151  | 122    | 273 (38.4)   | 1.972 | 0.373 (NS) |
| Married             | 217  | 210    | 423 (59.5)   |    |   |
| Widowed/Divorced    | 4    | 6      | 7 (0.98)     |    |   |
| **Education**       |      |        |              |    |   |
| Illiterate          | 71   | 73     | 144 (20.2)   | 4.084 | 0.665 (NS) |
| Primary             | 61   | 42     | 103 (14.5)   |    |   |
| Secondary           | 167  | 163    | 330 (46.4)   |    |   |
| High school         | 33   | 31     | 64 (9.01)    |    |   |
| Diploma             | 1    | 0      | 1 (0.14)     |    |   |
| Graduate            | 30   | 21     | 51 (7.1)     |    |   |
| Professional        | 9    | 8      | 17 (2.39)    |    |   |
| **Domicile**        |      |        |              |    |   |
| Urban               | 182  | 183    | 365 (51.4)   | 1.9297 | 0.164 (NS) |
| Rural               | 190  | 155    | 345 (48.5)   |    |   |
| **Family type**     |      |        |              |    |   |
| Nuclear             | 176  | 157    | 333 (46.9)   | 0.0529 | 0.818 (NS) |
| Joint               | 196  | 181    | 377 (53)     |    |   |

Future research should be targeted toward vulnerable population in multicenter with large sample size and the effect of each associated social and clinical factor should be evaluated in detail so that global burden of suicide can be reduced significantly. S – Significant; NS – Not significant
psychiatric illness, but many of them had not sought treatment for the same.\[23\]

This implies that there is a direct need for the health facilities and authorities to implement awareness program regarding suicide prevention at primary level as well. Stigma reduction programs, effective screening tools, educational material regarding psychiatric illness, coverage of un-reached areas in terms of better accessibility of mental healthcare should be promoted. Coverage of un-reached areas in terms of better accessibility of mental healthcare should be promoted. Suicide prevention must form an integral part of community-based mental healthcare activities. Liaison psychiatry should be advocated more at tertiary care hospitals; timely referral and importance of treatment adherence should be advised.

Limitation
It is a hospital-based study. The sample size was modest.

CONCLUSIONS

Young population is at high risk for suicide. More than 80% of these have diagnosable psychiatric illness, and majority of them have never consulted a psychiatrist. The lack of suicide prevention awareness programs and lack of availability of qualified mental health professionals at various levels and easy availability of lethal substances are one of the leading causes of these attempts. Advocating the role of problem-solving skills, family counseling, and use of coping mechanisms should be promoted which can reduce suicide in our country.

Implication
Future research should be targeted toward vulnerable population in multicenter with large sample size, and the effect of each associated social and clinical factor should be evaluated in detail so that global burden of suicide can be reduced significantly.

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Conflicts of interest
There are no conflicts of interest.

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