Research Article

A cross-sectional study of suicidal attempts admitted in a rural tertiary-care hospital, Mandya, Karnataka

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Abstract

Background: Suicide is one of the most serious social and public health problems in the world. Around 800,000 people expire owing to suicide every year. Yet, these deaths are preventable. In India, suicide is one among the top 10 major causes of death, with a rate of 9.74 per one lakh population.

Objective: To study the sociodemographic characteristics of persons admitted with suicidal attempts and to find out the factors associated with it.

Materials and Methods: This hospital-based cross-sectional study was carried out at Adichunchanagiri Hospital and Research Center, a rural tertiary-care hospital, Mandya, Karnataka during the period between July 2014 and January 2015. All persons, both male and female subjects, admitted to emergency wards were owing to suicidal attempts during the study period. A total of 196 patients were included in the study. Data were collected by using semistructured questionnaire. Statistical analysis was done using SPSS software version, 20.0. Results were presented using percentages and proportions. The χ^2-test was applied to find the association between different parameters.

Result: There were totally 196 suicidal attempts common among male subjects (54.6%) and in the second decade (46.4%). Most of them were married (55.1%) and from lower socioeconomic class (68.9%). The most common mode of attempting suicide was by organophosphorus compounds (OPCs) ingestion (46.4%), and the common factors were family problems (50.5%), followed by financial problems (19.4%). A significant association was found between male alcoholic attempters and ingestion of OPCs ($p < 0.02$).

Conclusion: The factors associated with suicidal attempts were family problems, low socioeconomic status, and alcoholism. Most of them are preventable and controllable.

KEY WORDS: Suicidal attempts, rural, Karnataka

Introduction

Suicidal acts are complex human behaviors including several features of an individual's personality, state of health, and numerous life circumstances. Owing to deficiency of consistent, common nomenclature and classification, the dependable identification, evaluation, treatment, and prevention of suicides is a difficult task. Suicide is a global problem claiming about one million lives annually worldwide.[1]

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It has been increasing at an alarming rate among South-east Asia region countries, with an incidence rate of 36 per lakh population in India. Nearly 70% of suicides in all countries have been reported in the age group of 15–34 years. Poisoning, hanging, self-immolation, and drowning are the most commonly reported methods of suicide. In India, an average of 369 suicides takes place every day. Family problems and illness are the main causes of suicides in India.[2]

The suicidal behavior in the elderly persons, women, and adolescents are different from the other age groups or middle-aged men, that is, they are likely to be missed in elderly and children because of their indirect methods of communication

regarding the suicide intent. Children are greatly disturbed by the media and suicide epidemics.[1]

Farmers' suicides have also become a significant socio-economic concern in India that has intense implication on the quality of life of farmers and their families. Farmers' suicides in India have led to public policy and academic discourse.[3]

Hence, this study was conducted to study the sociodemographic characteristics of persons admitted with suicidal attempts and to find out the factors associated with it.

Materials and Methods

This hospital-based cross-sectional study was carried out using a semistructured questionnaire in Adichunchanagiri Hospital and Research Center (AHRC), a rural tertiary-care hospital located in BG Nagara, 60 km from Mandya city in Karnataka, India, from July 2014 to January 2015 for a period of 7 months.

All male and female patients admitted to emergency wards or causality owing to suicidal attempts during the study period were taken for the study. A total of 196 patients were admitted during the study period. Patients who attended the hospital owing to suicidal attempts but were treated in out-patient department and sent or referred to higher centers were not included in the study.

Ethical committee approval was obtained before the start of the study.

Data were collected by visiting the respective medical and surgical wards after obtaining information about their admission from the casualty medical officer and medicolegal case registers. Each and every patient was individually interviewed either from the patients themselves or their family members who were present at that time, using a pretested, semistructured questionnaire and the sociodemographic information thus obtained was recorded.

Data were then entered in Microsoft Excel 2013, and statistical analysis was done using SPSS software, version 20.0, and the results were expressed in percentages and proportions. The χ^2-test was applied to find out the association between the study variables, and $P < 0.05$ was taken as statistically significant.

Result

Majority (25.5%) of the study subjects was in the age group of 20–24 years, followed by 20.9% in the age group of 25–29 years [Table 1].

The mean age (± SD) of male attempters was (33.79 ± 12 years) significantly higher than that of female attempters (26.03 ± 7.2 years; $Z = 5.35$, CI = 4.89–10.62, $P < 0.0001$). The youngest and oldest attempters among male subjects were of 17 and 60 years and among female subjects were of 15 and 54 years, respectively.

Male subjects constituted 54.6% and female subjects 45.4% of the total study subject, which gave a male-to-female ratio of 1.2:1. Most of them (69%) belonged to lower socio-economic class according to modified BG Prasad's classification for January 2015 [Table 1].

Many (55.1%) of them were literates with education status above PU (preuniversity) level, followed by students (42.8%) of PU level education, and very minimum were illiterates (2%). Majority of them were Hindus by religion (89.3%) and were belonging to nuclear type of family (68.9%). Majority of the suicidal attempters were housewives (25%) by occupation. Majority (87.8%) of them did not have any family history of suicidal attempts and were married (55.1%) [Table 1].

In this study, it was found that the commonest methods of committing suicidal attempts were by consuming organophosphorus compound (OPC) poison (46.4%), followed by over consumption of tablets (24%) and by chemical poisoning (8.7%) [Table 2].

It was also found that the precipitating factors for the suicidal attempts among the study subjects were family problems (37.4% among male and 66.3% among female subjects) followed by financial problems (exclusively among male subjects: 35.6%) and love failure (21.5% among male and 5.6% among female subjects) [Table 3].

History of alcohol consumption was enquired during data collection to either the patients or their spouses or relatives, and it was found exclusively among 80 male patients. There was a statistically significant association found between alcohol intake and OPC poison consumption among male subjects with $P = 0.022$ [Table 4].

Discussion

In this study, majority (25.5%) of the study subjects was in the age group of 20–24 years, followed by 25–29 years. The mean age of the male attempters were significantly higher than that of female attempters. This was in accordance with studies conducted in Davengere in Karnataka and Manipur.[5,6] Studies done with respect to the peak occurrence of suicidal attempts had shown increased incidence in the second and third decades of life. These findings confirm that attempted suicides are rising rapidly among the youths. Contrary to these results, a study in China[7] has reported the peak occurrence of suicides in the third and fourth decades.

In this study, more number of male subjects attempted suicides than female subjects, which gave a male to female ratio of 1.2:1. This is supported by many Indian studies done elsewhere.[5,8,9]

In this study, majority of the suicidal attempters were Hindus by religion, which was in accordance with other studies conducted in India.[5,6,10] Religion has long been regarded as an important factor in suicide and attempted suicide. Because studies in India were conducted in Hindu-dominated areas, it is difficult to interpret the religious aspect of the suicidal attempt. Muslim nations report lower rates throughout the world, including the Muslim majority in Kashmir.[11]

Low education is an important risk factor for suicide. The individuals with higher educational levels and employed as

Table 1: Sociodemographic profile of study subjects

Study variables	Males, *N* (%)	Females, *N* (%)	Total, *N* (%)
Age group (years)			
15–19	7 (6.5)	13 (14.6)	20 (10.2)
20–24	20 (18.7)	30 (33.7)	50 (25.5)
25–29	18 (16.8)	23 (25.8)	41 (20.9)
30–34	16 (15)	7 (7.9)	23 (11.7)
35–39	18 (16.8)	10 (11.2)	28 (14.3)
40–44	4 (3.7)	4 (4.5)	8 (4.1)
45–49	8 (7.5)	1 (1.1)	9 (4.6)
≥50	16 (15)	1 (1.1)	17 (8.7)
Total	107 (100)	89 (100)	196 (100)
Literacy status			
Illiterates	4 (3.7)	0 (0)	4 (2)
Literates (college and above)	51 (47.7)	57 (64.1)	108 (55.1)
Schools	52 (48.6)	32 (35.9)	84 (42.8)
Total	107 (100)	89 (100)	196 (100)
Occupation			
Agriculturists	43 (40.2)	0 (0)	43 (21.9)
Housewives	0 (0)	49 (55.1)	49 (25)
Students	12 (11.2)	32 (36)	44 (22.4)
Unemployed	12 (11.2)	4 (4.5)	6 (3.1)
Skilled	36 (33.6)	2 (2.2)	16 (8.2)
Semiskilled	4 (3.7)	2 (2.2)	38 (19.4)
Total	107 (100)	89 (100)	196 (100)
Socioeconomic status			
Upper class	2 (1.9)	2 (2.2)	4 (2)
Upper middle class	20 (18.7)	23 (25.8)	43 (21.9)
Lower middle class	7 (6.5)	7 (7.9)	14 (7)
Upper lower class	51 (47.7)	34 (38.2)	85 (43.4)
Lower class	27 (25.2)	23 (25.8)	50 (25.5)
Total	107 (100)	89 (100)	196 (100)
Religion			
Hindus	100 (93.5)	75 (84.3)	175 (89.3)
Muslims	7 (6.5)	14 (15.7)	21 (10.7)
Total	107 (100)	89 (100)	196 (100)
Type of family			
Nuclear family	72 (67.3)	63 (70.8)	135 (68.9)
Joint family	9 (8.4)	11 (12.4)	20 (10.2)
Three generation family	13 (12.1)	13 (14.6)	26 (13.3)
Broken family	13 (12.1)	2 (2.2)	15 (7.7)
Total	107 (100)	89 (100)	196 (100)
Marital status			
Married	56 (52.3)	52 (58.4)	108 (55.1)
Unmarried	51 (47.7)	37 (41.6)	88 (44.9)
Total	107 (100)	89 (100)	196 (100)
Family history			
Yes	19 (17.8)	5 (5.6)	24 (12.2)
No	88 (82.2)	84 (94.4)	172 (87.8)
Total	107 (100)	89 (100)	196 (100)
History of alcohol intake			
Yes	80 (74.8)	0 (0)	80 (40.8)
No	27 (25.2)	89 (100)	116 (59.2)
Total	107 (100)	89 (100)	196 (100)
Time of occurrence of suicide (hours)			
00:00–12:00	16 (15)	10 (11.2)	26 (13.3)
12:01–18:00	43 (40.2)	35 (39.3)	78 (39.8)
18:01–23:59	48 (44.9)	44 (49.4)	92 (46.9)
Total	107 (100)	89 (100)	196 (100)

Table 2: Distribution of study subjects according to their method of committing suicide

Methods	Males, *N* (%)	Females, *N* (%)	Total, *N* (%)
OPC	58 (54.2)	33 (37.1)	91 (46.4)
Tablets	21 (19.6)	26 (29.2)	47 (24)
Hanging	6 (5.6)	4 (4.5)	10 (5.1)
Chemicals	5 (4.7)	12 (13.5)	17 (8.7)
Burns	3 (2.8)	6 (6.7)	9 (4.6)
Others	14 (13.1)	8 (9)	22 (11.2)
Total	107 (100)	89 (100)	196 (100)

Table 3: Distribution of study subjects according to their reasons for committing suicide

Methods	Males, *N* (%)	Females, *N* (%)	Total, *N* (%)
Family problems	40 (37.4)	59 (66.3)	99 (50.5)
Financial problems	38 (35.5)	0 (0)	38 (19.4)
Love failure	5 (5.6)	5 (5.6)	28 (14.3)
Academic failure	2 (1.9)	15 (16.9)	17 (8.7)
Unemployed	4 (3.7)	2 (2.2)	6 (3)
Others	0 (0)	8 (9)	8 (4)
Total	107 (100)	89 (100)	196 (100)

Table 4: Association between alcohol intake and OPC poison consumption

History of alcohol consumption	OPC consumption (males), *N* (%)		Total, *N* (%)
	Yes	No	
Yes	48	31	79
No	10	18	28
Total	107 (100)	89 (100)	196 (100)

$\chi^2 = 5.22$; $df = 1$; $P = 0.022$ (statistically significant).

professionals and semiprofessionals constitute less number of suicides and attempted suicides in this study. The findings of this study are in agreement with the findings [5,6,8] that conclude that low level of education is an important risk factor for suicidal attempt.

Low education, less income levels, belonging to unorganized labor sector in the middle of a burgeoning private industrial growth, and globalization place a large number of individuals at a high risk of economic insecurity and suicidal behavior.[6,12,9]

Majority of the attempters in this study were from nuclear families and were married. The more demanding nature of nuclear families, coupled with stress and strains, adds fuel to the fire. There is no one to shoulder their agony.[13] This may drive people to attempt suicide.

The main mode of attempting suicide was OPCs in this study, followed by self-poisoning with over dosage of tablets, drugs, and other common household substances. Similar observations were reported by many studies.[5,6,8,10,12]

Family problems were the major causes for attempting suicides. Subjects' financial problems, unemployment, academic failure, and love failure were other causes. Similar results were observed in two studies,[5,8,14] whereas other studies[15] noted unemployment as the major cause for attempting suicide.

The main limitation of this study is that it is a hospital-based cross-sectional study. Community-based longitudinal studies can reveal some more factors and avoid the selection bias. Some cases have been excluded from the study, which could not be accounted. Other risk factors influencing suicidal attempt have not been taken into account.

Conclusion

More than half of the patients were in the age group of younger than 20 years, were female subjects, and belonged to socioeconomic classes IV and V. Different factors such as age, sex, marital status, family history, and stress factors in

family influenced suicidal intent score. However, the suicidal attempters represent the tip of iceberg. Effective suicide preventive and control measures need to be taken in the form of early identification of suicide-prone individuals.

There is an urgent need to institute a national suicide surveillance policy. Microlevel analysis of suicides and suicidal attempts are required to identify high-risk population. Apart from strengthening poverty alleviation programs, inputs from Department of Community Medicine in medical colleges are required in sociology, mental health, and community health development.

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