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Risk Factors and Socio-Demographic Profile in Patients with Attempted Suicide in a Tertiary Care Centre, Bengaluru: A Cross-Sectional Study

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ABSTRACT

Context: A high suicide rate is an index of social disorganization. In India, it is the second leading cause of death among 15-29 years age group. Young age, female sex, poor education, unemployment and socio economic deprivation are some of the potential risk factors. The study conducted to assess the risk factors and socio-demographic profile in patients with attempted suicide in a tertiary care centre.

Methods and Material: A Cross Sectional Study was conducted among 476 suicide attempted patients by convenient sampling from January 2016 to May 2017. Data was collected by using a pre-tested, semi-structured questionnaire.

Results: Mean age of study participants was 30.65+0.75 years. 57.78% of them were males. Hindus (82.98%) were predominant among the cases. Most of the suicide victims (82.97%) were from nuclear families.24.57% of study participants had family history of suicide. There was no significant association between socio-demographic factors like education, occupation and socio-economic class and the number of previous attempts.

Conclusion: Suicides and attempted suicides are slowly but steadily assuming the levels of a public health problem caused by multiple factors. Hence there is a need to address the risk factors for suicide attempts and preventing them by taking proper measures at individual, family and societal level.

Keywords: Suicide, risk factors, suicide intent, socio-demography

INTRODUCTION

Suicide is a serious public health problem. Suicide is the act of deliberately killing oneself. Suicide attempt is defined as a behaviour of having strong urge to end one's life .[1] Close to 8,00,000 people die due to suicide every year. For every suicide there are many more people who attempt suicide. A prior suicide attempt is the single most important risk factor for suicide in the general population.[2] Suicide is the second leading cause of death among 15–29-year-old. 78% of global suicides occur in low- and middle-income countries.[3]

Suicides have been increasing at an alarming rate in South East Asian countries especially India. Annual Incidence rate of suicide is about 36 per lakh population in India.[4] Nearly 70% of suicides in our country have been reported in the age group of 15-34 years. Daily an average of 369 suicides take place, out of which 248 are males and 121 are females.[5]

The story of suicide is probably as old as that of man himself. It has been glorified, romanticized, grieved and even condemned.[6]

In Hinduism, the Bhagavadgita, Vedas and Upanishads, the Holy Scriptures - condemn suicide '*he who takes his own life will enter the sunless areas covered by impenetrable darkness after death*'. Except few

instances like Sati system, drowning at the confluence of rivers to attain punya, self destruction for incurable diseases.

In Islam, suicide is prohibited. In Christianity, suicide is considered a sin.

Risk factors:

Essential elements of the history include the past medical and psychiatric history, home and social life activities, and medications.[7] Patients who haven't attempted suicide but who present with a history of depression, substance abuse, anxiety, or other psychiatric disorders should routinely be assessed for suicidal ideation.[8]

Demographic data and risk factors can help the physician determine the degree of risk. Presence or absence of risk factors does not completely rule out suicidal ideation. Factors such as psychiatric disorders (mood disorders, substance abuse, psychotic disorders, personality disorders), previous suicide attempts, family history of suicide, history of being sexually abused, serious physical illness (especially HIV, dialysis, or conditions causing incapacitating, chronic pain), prior outpatient psychiatric treatment or psychiatric hospital admission within the past year, recent stressful interpersonal, legal, financial, or work-related life events, and impulsive or aggressive tendencies may therefore help risk-stratify patients.[9]

Who is at risk?

While the link between suicide and mental disorders in particular, depression and substance abuse disorders like alcohol is well established in high-income countries, many suicides happen impulsively in moments of crisis with a breakdown in the ability to deal with life stresses, such as financial problems, relationship break-up or chronic pain and illness. In addition, areas experiencing conflict, disaster, violence, abuse, or loss are strongly associated with suicidal behavior.[10] Suicide rates are also high amongst vulnerable groups who experience discrimination, such as refugees and migrants, indigenous peoples, lesbians, gays, bisexuals, transgenders and prisoners. By far the strongest risk factor for suicide is a previous suicide attempt.[11]

Predicting suicide:

In a 10-year prospective study of patients admitted with suicidal ideation, Beck *et al*. found that only the Hopelessness Scale and pessimism items on the Beck Depressive Inventory predicted suicides. A score of 10 or more on the Hopelessness Scale correctly identified 91% of eventual suicides.[12]

Scales used to identify suicidal risk include SAD PERSONS scale, Beck Suicidal Intent Scale and the Suicidal Intent Questionnaire (SIQ) validated in the Indian setting.[13] The SIQ consists of a 10-item questionnaire which is scored as 0, 1 or 2. In a more recent study of communication of suicidal intent among suicide attempters, Srivastava *et al*[14] reported that the majority of the sample (73.3%) communicated suicidal intent using the SIQ.

WHO response

WHO recognizes suicide as a public health priority. The first WHO World Suicide Report "**Preventing suicide: a global imperative**" published in 2014, aims to increase the awareness of the public health significance of suicide and suicide attempts and to make suicide prevention a high priority on the global public health agenda. Suicide is one of the priority conditions in the WHO Mental Health Global Action Plan (mhGAP) launched in 2008, which provides evidence-based technical guidance to scale up service provision and care in countries for mental, neurological and substance use disorders. In the WHO Mental Health Action Plan 2013-2020, WHO Member States have committed themselves to working towards the global target of reducing the suicide rate in countries by 10% by 2020.[15] With this scenario, this study is proposed to assess risk factors and socio demographic profile of suicide attempted individuals in a tertiary care centre

OBJECTIVES

The present study was conducted to assess the risk factors in patients with attempted suicide and also to study the socio-demographic profile of patients with attempted suicide.

METHODOLOGY

Sample Size Estimation: Based on a previous study by of Gowda.N[16] major risk factor suicidal attempts was family problems (p=27.2%), with allowable error of 15%, sample size is calculated by $4pq/d^2$ where n is sample size, p is prevalence (27.2%), q is 100 – p and d is the allowable error (4.08). The calculated **Sample size was 476.**

Data collection was started after obtaining clearance from the Institution Ethical Committee. Permission was obtained from the Dean, Medical superintendent of Victoria hospital for conducting the study. Informed consent for the study was obtained from the study participants, and if required from the attendees or guardians. Patients admitted with history of suicide attempts were filed as MLC in casualty later once they become stable, they were shifted to Medicine C Block of Victoria Hospital. Such cases were taken up for study and data regarding socio demographic profile and risk factors were collected

by interview method using a semi-structured questionnaire until sample size of 476 is achieved during the period from January 2016 to May 2017 . Repeated visits were carried out to the medicine block regarding elicitation of history and counselling sessions. Confidentiality was maintained.

Mental health care bill was passed by parliament on 27th March, 2017 stated that suicide act should be decriminalized. A person who attempts suicide should be presumed to have severe stress and shall not be punished.[17]

Data was entered in SPSS V.23 and analysed using descriptive statistics.

Statistics: Results are presented in terms of frequencies and percentages. Chi square was applied to find the association between variables. P value < 0.05 is considered significant. Charts, tables and graphs are added wherever necessary.

RESULTS

In our study, mean age of the study participants was 30.65+ 0.75 years. More than half of the suicide victims (67%) were aged between 16-30 years followed by 31-45 years (23.5%) age group. Least cases of suicide were reported among the victims whose age group was between 61-75 years (3.2%). Among the study subjects, 275 (57.78%) were males and 201 (42.22%) were females. Urban locality (66.81%) was the most common place of residence for study participants than rural (33.19%). 68.9% of the study participants were literates. 80.25% of the study subjects were employed. Students, the age group being most vulnerable accounted for 9.24% of study subjects and 6.3% were retired from their job. Most of the study participants (82.77%) belonged to Nuclear family. Most of the study participants (51.68%) belonged to upper middle class followed by upper class (24.15%) and middle class 21.63%). Lower middle class and lower class accounted for 1.47% and 1.05% respectively as depicted in table1.

If we see the habits of study subjects,19.53% of them were alcoholic and 10.29% of them were smokers and 3.78% of them had both alcohol and smoking habits. About 66.38% of them had no habits.24.57% of the study participants had family history of suicide and only 15.3% of them had history of psychiatric illness. About 49.36% of them had intent of suicide during the last 12 months and 34.5% of them had history of previous attempts. 26.68% of the close family members of the study subjects attempted suicide and 30.88% of the study participants had their close family members who did not attempt suicide. 42.43% of them refused to reveal about their close family members attempting suicide.

Table 1: Distribution of Socio-demographic factors among Study participants (N=476)

Socio-demographic factors	Frequency (%)
Age-group	
16-30 years	319 (67)
31-45 years	112 (23.5)
46-60 years	30 (6.3)
61-75 years	15 (3.2)
Sex	
Male	275 (57.78)
Female	201 (42.22)
Religion	
Hindu	395 (82.98)
Muslim	74 (15.54)
Christian	7 (1.47)
Locality	
Urban	318 (66.81)
Rural	158 (33.19)
Education	
Literate	328 (68.9)
Illiterate	148 (31.09)
Occupation	
Student	44 (9.24)
Employed	382 (80.25)
Unemployed	20 (4.2)
Retired	30 (6.3)
Type of family	
Nuclear family	394 (82.77)
Joint family	59 (12.39)
Three generation family	23 (4.83)
Marital status	
Unmarried	207 (43.48)
Married	192 (40.33)
Divorced/separated	31 (6.51)
Widow/widower	46 (9.66)
Socio-economic class of study participants	
Upper class	115 (24.15)
Upper middle class	246 (51.68)
Middle class	103 (21.63)
Lower middle class	7 (1.47)
Lower class	5 (1.05)

About 9.88% of close family members of study subjects died due to suicide attempt and 42.85% of the study participants had their close family members who had died due to attempt.47.26% of them refused to reveal about the deaths of their close family members due to suicide attempts as mentioned in table 2.

Most common mode of attempt was Poisoning (78.57%).Among poisoning cases, household poisoning (33.61%) including rat poisoning and consumption of phenol followed by Organophosphorus poisoning (28.15%) and other poisoning (16.80%). The least common modes of attempt were from burns (4.41%), Self-injury by the use of razor/knife (1.68%) and partial hanging (0.84%).54% of study subjects sought medical care after the suicide attempt and 29.83% of them did not seek medical care.

Table 02: Distribution of risk factors for attempting suicide by study subjects (N=476)

Risk factors	Frequency (%)
Habits	
Alcohol	93 (19.53)
Smoking	49 (10.29)
Both	18 (3.78)
No habits	316 (66.38)
Family history of suicide	
Yes	117 (24.57)
No	271 (56.93)
Refused to respond	88 (18.48)
History of psychiatric illness	
Yes	73 (15.33)
No	352 (73.94)
Refused to respond	51 (0.42)
Intent of suicide in last 12 months	
Yes	235 (49.36)
No	130 (27.31)
Refused to respond	111 (23.31)
History of previous suicide attempts	
No attempts	312 (65.5)
More than one attempt	164 (34.5)
Close family members suicide attempts	
Yes	127 (26.68)
No	147 (30.88)
Refused to respond	202 (42.43)
Deaths of Close family members due to suicide	
Yes	47 (9.88)
No	204 (42.85)
Refused to respond	225 (47.26)

Table 3: Distribution of mode of Suicide attempt and later phase of events by participants (N=476)

Events during/after the suicide attempt	Frequency (%)
Mode of attempt	
Poisoning	374 (78.57)
Medication overdose	69 (14.49)
Burns	21 (4.41)
Self-injury by Razor/knife	8 (1.68)
Partial hanging	4 (0.84)
Seeking Medical care after the attempt	
Yes	259 (54.1)
No	142 (29.83)
Refused to respond	75 (15.75)
Overnight hospitalization after the attempt	
Yes	237 (49.76)
No	95 (19.96)
Refused to respond	144 (30.25)

15.75% of them refused to answer about seeking medical care after the attempt. About half of the study subjects (49.79%) were admitted to hospital on the same day of attempting suicide. 19.96% of them were not admitted to hospital on the same day of attempt. 30.25% of them refused to answer about their overnight hospitalization after the attempt as mentioned in table 3.

Only 128 (26.89%) study participants sought professional help for suicidal attempt thoughts while 183 (38.44%) did not seek any professional help. 165 (34.66%) study participants refused to answer about seeking any professional help for the suicidal thoughts as depicted in figure 1.

DISCUSSION

In this cross-sectional study, mean age group of study participants was 30.65+0.75 years. Most common age group affected was 16-30 years. Many other Indian studies supported this. A study conducted by Ramdurg et al [18] showed that the mean age group was 31.5 yrs. Another study conducted by Gowda.N et al [13] said mean age group of study participants was 30.41 years. Nilamadhab et al [19] also said that mean age group affected was 31.6+3.5 years. However some studies also contradicted our findings. A Study by Bhola et al [20] revealed that mean age group of suicide attempters was 16.4+0.83 years and other study conducted by Siddhartha et al [21] showed that 15-18 years was the age group that was the most common affected.

Males (57.78%) are most commonly affected than females (42.22%) in our study. Other studies supported our findings. Study by Ramdurg et al [18] showed that 56% of males and 44% of females were affected. Bhola et al [20] also concluded that 57.5% of them were males and 42.5% were females. Gowda et al [16] also said that 61.3% were males and 38.7% were females.

Hindus (82.98%) are the most affected study subjects in our study because the area which has a tertiary care centre had more of hindu residents. Other studies supported our findings. Ramdurg et al[18] showed that 96% of them were Hindus followed by other religion. Gowda N et al [16] showed that 94.6% of study participants were Hindus. Siddhartha et al [21] also concluded that Hindus were at higher risk of attempting suicide.

If we see marital status of study participants, Unmarried people (43.8%) are at a little higher risk of developing suicidal behaviour than married people (40.33%) this may be due to the most common affected age group in our study. In contradictory to the above findings, Ramdurg et al [18] said that married people (59%) were at higher risk of attempting suicide than unmarried. Gowda.N et al [16] also concluded that 62.4% of study participants were married and 33.9% were unmarried. Indian report on Suicide 2015 says that 70.3% of suicide victims were married followed by 3.5% of divorced and separated couples and 3.7% of widow and widower which is also in favour of our study results.

Family structure and family environment plays an important role in the mental status of an individual. Nuclear families (82.77%) are the most commonly affected than other type of families. This is because nuclear families are bound to higher level of stress

and there is no support from elders to cope up with stress. There are no helping shoulders for such families. Many Indian studies supported our findings. Ramdurg et al [18] concluded that 41% of suicide victims belonged to nuclear families. Bhola et al [20] also showed that 72.4% of suicide victims were from nuclear families. Another study by Gowda N et al[16] said that 55% of nuclear families attempted suicide. But one study by Nilamadhab et al[19] predicted that extended families are at a higher risk of developing suicidal behaviour than nuclear families.

Most of the diseases run in families. In the same way, family history of suicide attempts was seen in 24.57% of cases and 15.33% of history of previous suicide attempts. Ramdurg et al [18] concluded that 26% of cases had previous suicide attempts. Other study by Nilamadhab et al[19] showed that multiple attempters reported to have chronic symptoms, poor coping skills and family history of suicide behaviour.

The most common method of suicide attempt was by Household poisoning (33.61%) followed by organo-phosphorus poisoning (28.51%) and the least common method was partial hanging (0.84%). Ramdurg et al[18] concluded that corrosive poisoning (30%) was the most common mode followed by insecticide poisoning (22%). Gowda N et al [16] showed in his findings that 66.3% of suicide victims consumed organo-phosphorus compounds for attempt followed by medication overdose (17.83%).Another study by Siddhartha et al [21] showed that 26.8% of suicide victims took overdose of medicines followed by 25.8% of them consumed poisons. Indian report on suicide 2015[10] also said that 29.5% of suicide attempters consumed poisoning. Nilamadhab et al[19] concluded that 44.3% of cases attempted suicide by pesticides consumption followed by 31.3% cases of oleander poisoning and 24.5% of cases by overdose of medication.

54% of our study participants sought medical care after the attempt. Some of the study participants refused to seek medical care because they thought death was possible from the attempt. A study conducted by Siddhartha et al [21] concluded that almost 75.3% of suicide victims did not seek medical care. This depicts either the desperateness of suicide victims towards ending their life or there was no nearby health centre for accessibility of treatment facility.

CONCLUSION

Suicides are hidden and unrecognized epidemic in the Indian region affecting predominantly younger age group. In this study, most of the study participants belonged to 16-30 years age group. This depicts the loss of younger generation to suicides which can be prevented after taking proper interventions.

The impact of urbanization, industrialization, economic liberalization and changing values of people had profound effects on the health of communities. This can be addressed by regular screening for mental health at primary health care level and regular counselling sessions for the cases with attempted suicides after evaluating their mental health. Hence there is an urgent need to address the above mentioned risk factors and frame policies with proper interventions which should be accessible to all in order to lead a mentally healthy and peaceful life.

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