

Suicide attempts and related life events among suicide attempted patient 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.

Materials and Methods: The aim of the study is to assess the life events that provoked suicide attempt in a tertiary care centre. It was a cross-sectional study conducted among 476 patients with attempted suicide by convenient sampling method. Study was conducted from January 2016 to May 2017. Data was collected using a pre-tested, semi-structured questionnaire. Descriptive and Inferential statistics were used to analyse the data.

Results: Mean age of study participants was 30.65 ± 0.75 years. Among 476, 57.78% of them were males and 24.57% of study participants had family history of suicide. There is association between life events that led to attempt suicide and number of previous attempts of suicide. Among various life events, family problems were the most common factor irrespective of number of previous suicide attempts followed by financial crisis, work-related factors and personal factors.

Conclusion: Suicide and attempted suicides are becoming globally endemic. Socio-demographic factors and the nature of their living in a society plays a major role in this. Healthy living comes from healthy family and good working environment.

Keywords: Suicide, suicide intent, Socio-demographic factors, Life events, Family problems.

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.^{5,6}

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, trans-genders 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 al¹⁴ 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 the cause of present suicide attempt and socio demographic profile of suicide attempted individuals in a tertiary care centre.

Objectives

1. To assess the life events that provoked the patients to attempt suicide in a tertiary care centre.
2. To determine the socio-demographic profile in patients with attempted suicide in a tertiary care centre.

Materials and Methods

It was a cross-sectional study carried from January 2016- May 2017 in a tertiary care centre of Bengaluru among 476 suicide attempted patients.

Sample Size Estimation

Based on a previous study by of Gowda.N¹⁶ major risk factor suicidal attempts was family problems ($p=27.2\%$), with allowable error of 15%, sample size is calculated to be 476 using the formula $4pq/d^2$.

Inclusion Criteria

Among the Patients who gave consent for the study and got admitted in casualty, their health condition should be stable.

Exclusion Criteria

Patients whose condition was critical and got admitted in ICU.

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 cause of present intent of suicide 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. Presumptive Stressful life events scale is a validated scale and had been used by Gowda. N et al¹⁶ in their study. 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

Age-group Distribution of Study Subjects

In our study, mean age of the study subjects 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%) as shown in table 1.

Distribution of Socio-demographic Factors

Among the study subjects, 275(57.78%) were males and 201(42.22%) were females and 82.98% of them were Hindus. Urban locality (66.81%) was the most common place of residence. 68.9% of the study subjects were literates. Among the study subjects, 80.25% of the study subjects were employed and 4.20% were unemployed. Students, the age group being most vulnerable accounted for 9.24% of study subjects. Most of the study subjects (82.77%) belonged to nuclear family. 43.48% of the study subjects were unmarried and 40.33% of them were married. 9.66% of the study subjects were widow/widower and 6.51% of them were divorced/separated as depicted in table 2.

Distribution of Socio-economic Status

As per Revised Modified B.G. Prasad classification of SES 20-16, 51.68% of them belonged to upper middle class, 24.15% of them to upper class and 21.63% of them to middle class as mentioned in table 3.

Distribution of mode of Suicide attempt by Study Subjects

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 Organo-phosphorus 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%) as mentioned in table 4.

Association between Life Events and Previous Attempts

There is association between life events that led to suicide attempt and number of previous attempts. (Chi-square value 0.010 at degree of freedom 4.) as depicted in table 5.

Life events of Study Subjects that Provoked Suicide Attempt

There are total 52 life events in PSLES. For the study purpose and for data analysis purpose, we divided 52 events under headings like family problems, financial problems, work-related problems, personal problems and multiple which involves more than one factors. Family problems include marital conflict, death of spouse, death of close family member/spouse, lack of child, family conflict, illness of family member etc. Financial problems include more debts, financial loss by business. Personal factors include

extra-marital relation of spouse, love affair, marital separation, personal injuries or illness, pregnancy of wife (wanted/unwanted) etc. Work related factors include trouble at work place, unfulfilled commitments at work place, change or expansion of business etc. Multiple factors involves more than one factor as mentioned above. Among the study subjects if we see the life events that precipitated the suicide attempt, 42.43% of them had family problems followed by personal factors (23.74%), financial factors (18.06%) and work-related factors (10.72%) as depicted in Fig. 1.

Table 1: Age distribution of study subjects

Age Group	Frequency (N=476)	Percentage (%)
16-30years	319	67%
31-45years	112	23.5%
46-60years	30	6.3%
61-75 years	15	3.2%

Mean age group: 30.65 ± 0.75 years

Table 2: Distribution of Socio-demographic factors of study subjects

Socio-Demographic Factors	Frequency (N=476)	Percentage (%)	
Sex	Male	275	57.78%
	Female	201	42.22%
Religion	Hindu	395	82.98%
	Muslim	74	15.54%
	Christian	07	1.47%
Locality	Urban	318	66.81%
	Rural	158	33.19%
Education	Literate	328	68.90%
	Illiterate	148	31.09%
Occupation	Student	44	9.24%
	Employed	382	80.25%
	Unemployed	20	4.20%
	Retired	30	6.30%
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%

Table 3: Distribution of socio-economic class of study subjects

SES Class	Frequency (N=476)	Percentage (%)
Upper class	115	24.15%
Upper middle class	246	51.68%
Middle class	103	21.63%
Lower middle class	07	1.47%
Lower class	05	1.05%

Table 4: Distribution of mode of suicide attempt by study subjects

S. No	Mode of Attempt	Frequency [N=476]	Percentage (%)
1	Poisoning	374	78.57%
2	Medication overdose	69	14.49%
3	Burns	21	4.41%
4	Self-injury by Razor/Knife	08	1.68%
5	Partial Hanging	04	0.84%

Table 5: Association between life events and previous attempts

Factors		Previous attempts		Total (100%)	X2 [P value] (df)
		No previous attempts n = 312 (65.5%)	Previous attempts n=164 (34.5%)		
Life events	Family problems/events	141(69.8)	61(30.2)	202	13.347 [0.010]* (4)
	Financial factors	63(73.3)	23(26.7)	86	
	Work-related factors	24(47)	27(52.9)	113	
	Personal factors	71(62.8)	42(37.2)	51	
	Multiple factors	13(54.2)	11(45.8)	24	

*Chi-square test-p value < 0.05 is significant

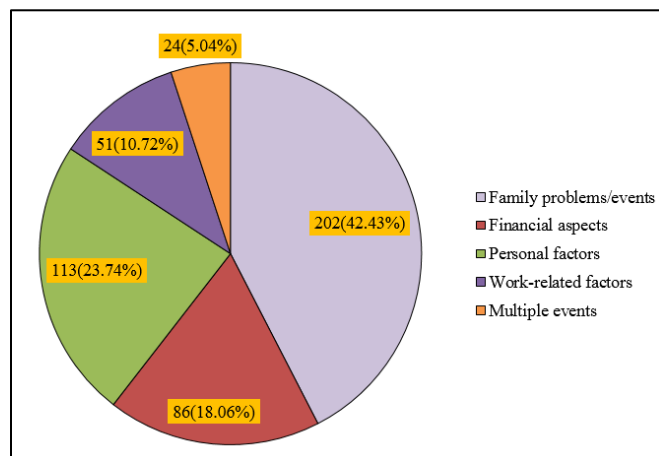


Fig. 1: Life events of study subjects that provoked suicide attempt

Multiple events involves more than one factors for a case of suicide attempt. Like a case of suicide attempter had both personal and family factors or can have all the above mentioned factors.

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 al¹⁷ showed that the mean age group was 31.5 yrs. Another study conducted by Gowda. N et al¹³ said mean age group of study participants was 30.41 years. Nilamadhab et al¹⁸ 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 al¹⁹ revealed that mean age group of

suicide attempters was 16.4±0.83 years and other study conducted by Siddhartha et al²⁰ 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 al¹⁷ showed that 56% of males and 44% of females were affected. Bhola et al¹⁹ also concluded that 57.5% of them were males and 42.5% were females. Gowda. N et al¹⁶ also said that 61.3% were males and 38.7% were females.

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 al¹⁷ said that married people (59%) were at higher risk of attempting suicide than unmarried. Gowda. N et al¹⁶ 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. Ramdurg et al¹⁷ concluded that 41% of suicide victims belonged to nuclear families. Bhola et al¹⁹ also showed that 72.4% of suicide victims were from nuclear families. Another study by Gowda. N et al¹⁶ said that 55% of nuclear families attempted suicide. But one study by Nilamadhab et al¹⁸ predicted that extended families

are at a higher risk of developing suicidal behaviour than nuclear families.

The most common method of suicide attempt was by Household poisoning (33.61%) followed by organophosphorus poisoning (28.51%) and the least common method was partial hanging (0.84%). Ramdurg et al¹⁷ concluded that corrosive poisoning (30%) was the most common mode followed by insecticide poisoning (22%). Gowda. N et al¹⁶ showed in his findings that 66.3% of suicide victims consumed organophosphorus compounds for attempt followed by medication overdose (17.83%). Another study by Siddhartha et al²⁰ showed that 26.8% of suicide victims took overdose of medicines followed by 25.8% of them consumed poisons. Indian report on suicide 2015¹⁰ also said that 29.5% of suicide attempters consumed poisoning. Nilamadhab et al¹⁸ 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.

In our study, 42.43% of study subjects had family problems as the main life event that provoked them for attempting suicide followed by personal problems which accounted for 23.74% of cases. A study conducted by Ramdurg et al¹⁷ concluded that 40% of suicide victims had family problems. Gowda. N. et al¹⁶ showed that 27.2% of study subjects had family problems followed by family illness which accounted for 27% of cases. Indian report on suicide 2015¹⁰ also said that 25.6% of suicide victims have family problems and 20.8% of them have illness.

There was a significant association between life events and the number of previous attempts. Family problems were the most common factor leading to suicide attempt irrespective of number of previous attempts. Gowda. N. et al¹⁶ also concluded that there was a significant association between suicide attempts and precipitating events like family problems, marital disharmony and financial problems.

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 intervention.

Conflict of Interest: None

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