

A Comparative Study of Attempted Suicide in Adolescent, Adult, and Elderly Population

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Abstract

Introduction: The risk factors of attempted suicide vary among different age groups and it varies very much between the adolescent and elderly population. Hence, identifying the suicide risk factors for each population will help in the development of suitable prevention strategies for each age group.

Aim: This study aims to analyze the differences in sociodemographic data and risk factors involved in adolescent, adult, and geriatric group.

Materials and Methods: A cross-sectional analytical study with 90 patients (30 adolescents, 30 adults, and 30 geriatric patients after a h/o attempted suicide) was taken. The duration of the study was 3 months (January–March 2018). Sociodemographic data, details of the suicide attempt, the precipitating stressors, and risk factors were analyzed by a semi-structured pro forma. The intent of the suicide attempt was analyzed by Beck's Suicide Intent Scale. The lethality of the attempt was analyzed by Risk-Rescue Rating Scale (Weismann and Worden, 1972). Psychiatric morbidity was found out from MINI plus and ICD 10 criteria were used to confirm the diagnosis. All the data obtained are analyzed statistically.

Results: This study helps us understand that suicide attempts are different in different age groups. In the younger group, the psychosocial stressors and the support available for handling them determine the attempts. In adults, the major problem was marital conflict and substance dependence and the prevention strategies should be directed toward it. Most of the geriatric suicides were planned not impulsive and they had a comorbid psychiatric illness. This stresses the importance of screening of mental illness in the elderly and adequate treatment of physical comorbidity as well.

Conclusion: This study finds that multiple factors warrant a broadly directed multimodal approach for intervention and the need for a tailored approach for each population.

Key words: Adolescents, Adults, Psychiatric disorders

INTRODUCTION

The term “suicide” has its origin in Latin suicidium with “sui” meaning “of oneself” and “Cidium” meaning “the act of destroying oneself.” Suicide is one of the most tragic events of human life causing psychological distress among the family members of the victim. The WHO defines

adolescence as a period ranging from 10 to 19 years of age.^[1] Suicide is one of the common causes of premature death among adolescents. Suicidal behavior is a matter of great concern for clinicians who deal with mental health problems in adolescents. The incidence of suicide attempts reaches a peak during midadolescent years and it is one of the leading causes of death in that age group. Psychological autopsy reveals that 90% of adolescent suicides occur in individuals with a preexisting psychiatric disorder present for several years. In adolescents, the most common disorders are mood disorders, substance abuse, alcohol abuse, and comorbid with a mood disorder in boys over 15 years of age.^[1] At a trait level, many of the suicide completers are known to be irritable, impulsive, volatile, and prone to

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outbursts of aggression. The common leading causes in the middle-aged population in our country are substance abuse in males and frequent marital conflict due to substance dependence. The spouses of the alcohol-dependent men have a variety of psychopathologies such as depressive disorders and anxiety disorders. There are studies showed that suicide rates among the elderly are higher than or as high as young people. Yet, suicide in old age is a neglected area.^[2] A study in South India found that the suicide rates in the population above 55 years of age are 189/100,000. About one in five of all successful suicides is committed by individuals above 65 years of age. Some predictors of geriatric suicide described by the previous studies are psychiatric disorders, physical illness, functional impairment, and stressful life events increase the risk for suicide in the elderly. The elderly mostly consult primary care physicians rather than mental health professionals for mental health problems. Knowledge about the suicide risk factors specific to the elderly population is required for early identification of those at risk.^[2]

Considering these issues, the present study was planned with the objective of comparing suicide risk factors between adolescent, adult, and elderly group to identify specific risk factors in each group.

Aim

This study aims to analyze the differences in sociodemographic data and risk factors involved in adolescent, adult, and geriatric group.

MATERIALS AND METHODS

The study was done at Chengalpattu Medical College and Hospital. It is a tertiary care center situated in a semi-urban area, but the patients are predominantly rural population. Ethical committee approval was obtained from the ethics committee of the institution. It was a cross-sectional analytical study with a sample size of 90 patients (30 adolescents, 30 adults, and 30 geriatric patients after a h/o attempted suicide). The duration of study was for 3 months (January–March 2018). All the patients were referred to psychiatric outpatients department after medical management of suicide attempt for psychiatric assessment. They were all interviewed on the day of discharge. Confidentiality of the information was assured and the information was obtained from patient and caregiver. Written informed consent was obtained from all the patients. For patients <18 years, consent was obtained from primary caregivers also.

Inclusion Criteria

1. Consecutive adolescent (10–19 years), adult, and geriatric patients (>60 years) who had been referred

- to psychiatric outpatient department after attempted suicide at Chengalpattu Medical College and Hospital
2. Those who were willing to give informed consent.

Exclusion Criteria

1. Those who were not willing to give informed consent
2. Those who were physically unstable for interview.

Sociodemographic data, details of the suicide attempt, the precipitating stressors, and risk factors were analyzed by a semi-structured pro forma. The intent of the suicide attempt was analyzed by Beck's Suicide Intent Scale.^[3] The lethality of the attempt was analyzed by Risk-Rescue Rating Scale (Weismann and Worden, 1972).^[4] Psychiatric morbidity was found out from MINI plus and ICD 10 criteria were used to confirm diagnosis.

All the data obtained are analyzed statistically by SPSS 10. Sociodemographic data and other risk factors were analyzed by percentage of frequencies. Association between them was analyzed by *t*-test and Chi-square test.

RESULTS

A total of 90 patients were taken: 30 adolescents, 30 adults, and 30 belonging to the geriatric group. Majority of the adolescents 60% are in the late adolescent (17–19 years). Around 40% of them belong to the midadolescent group. There were no cases found in the early adolescent group. Around 40% of adults belong to the age of 20–29 years followed by 36.7% belong to the ages of 30–39. 61.3% of the geriatric attempters belong to the age of 60–69 years. 66.7% of adolescents and 63.3% of the adults were females, but in the geriatric attempters, 54.8% were male. Most of the adolescent attempters had secondary education (70%). Most of the adults in the study had primary education (46.7). Most of the geriatric attempters (93.5%) were illiterate. Unemployment is highest in the geriatric group with 51.6%. With regard to the marital status, as shown in Table 1, among adolescents, 63.3% were single and unmarried and 30% were in a relationship. In the adult group, 43.3% had an arranged marriage and 16.7% had love marriage among the geriatric attempters, 51.6% were married, and there was separation in 16.1% and 32.3% were widow/widower.

With regard to the family type, 70% of the adolescents and 56.7% of the adults lived in nuclear families and 33.6% of the geriatric attempters were living alone compared to the other two groups. As shown in Table 2, 43.3% of adolescents and 43.3% of adults had a positive family history and 79.9% had a family h/o suicide in the geriatric group.

With regard to the family history of psychiatric illness, overall family h/o substance dependence was found to be the highest with 26.7% in adolescents and 16.7% in adults and 9.7% in geriatric groups. As shown in Table 3, the history of suicide attempts was highest 53.3% in the geriatric group and least (6.7%) in the adolescent group.

With regard to medical comorbidity, highest was in the geriatric group, 32.3% were diabetic and 25.8% had hypertension and 25.8% had a h/o stroke; previously, 12.9% had h/o heart disease and 3.2% had a h/o hearing

loss. In adults, there was a slight increase in the rates if infertility 6.7% and stroke 6.7% and 10.2% for diabetes.

As shown in Table 4, with regard to the mode of suicide attempt, tablet poisoning is found to be highest in adult (36.7) and geriatric groups (61.3%), followed by organophosphorus poisoning and for oleander seed poisoning was common in adolescents followed by tablet poisoning.

With regard to the cause of attempt, the most common cause of suicide in adolescents was interpersonal conflict

Table 1: Distribution of cross tabulation of marital status with suicide attempt

| Marital status | Adolescence (%) | Adults (%) | Geriatric (%) | Total | P |
|-------------------------------|-----------------|------------|---------------|-------|--------|
| Unmarried (single) | 19 (63.30) | 6 (20) | 0 (0) | 25 | 0.0001 |
| Unmarried (in a relationship) | 9 (30) | 2 (6.70) | 0 (0) | 11 | |
| Married (love) | 1 (3.30) | 5 (16.70) | 0 (0) | 6 | |
| Married (arranged) | 0 (0) | 13 (43.30) | 15 (51.60) | 28 | |
| Separated | 0 (0) | 2 (6.70) | 5 (16.10) | 7 | |
| Widow/widower | 1 (3.30) | 2 (6.70) | 10 (32.30) | 13 | |
| Total | 30 (100) | 30 (100) | 30 (100) | 90 | |

Table 2: Distribution of cross tabulation of a history of family suicide with suicide attempt

| History of family suicide | Adolescence (%) | Adults (%) | Geriatric (%) | Total | P |
|---------------------------|-----------------|------------|---------------|-------|-------|
| Nil | 17 (56.70) | 17 (56.70) | 6 (20.10) | 40 | 0.001 |
| Yes in father | 3 (10) | 7 (23.30) | 7 (23.30) | 17 | |
| In mother | 7 (23.30) | 3 (10) | 7 (23.30) | 17 | |
| Siblings | 3 (10) | 0 (0) | 0 (0) | 3 | |
| Spouse | 0 (0) | 3 (10) | 3 (10) | 6 | |
| Children | 0 (0) | 0 (0) | 7 (23.30) | 7 | |
| Total | 30 (100) | 30 (100) | 30 (100) | 90 | |

Table 3: Distribution of cross tabulation of a history of suicide with suicide attempt

| History of suicide | Adolescence (%) | Adults (%) | Geriatric (%) | Total | P |
|--------------------|-----------------|------------|---------------|-------|-------|
| Nil | 28 (93.30) | 16 (53.30) | 9 (30.60) | 53 | 0.001 |
| Once | 2 (6.70) | 8 (26.70) | 16 (53.30) | 26 | |
| Multiple | 0 (0) | 6 (20) | 5 (16.10) | 11 | |
| Total | 30 (100) | 30 (100) | 30 (100) | 90 | |

Table 4: Distribution of cross tabulation of mode of suicide attempt

| Mode | Adolescence (%) | Adults (%) | Geriatric (%) | Total | P |
|--------------------------|-----------------|------------|---------------|-------|------|
| Oleander seeds | 10 (33.30) | 4 (13.30) | 0 (0) | 14 | 0.02 |
| Rat killer | 2 (6.70) | 3 (10) | 1 (3.20) | 6 | |
| Crane killer | 2 (6.70) | 0 (0) | 2 (6.50) | 4 | |
| OPC | 6 (20) | 7 (23.30) | 8 (29) | 21 | |
| Kerosene | 1 (3.30) | 0 (0) | 0 (0) | 1 | |
| ALA | 1 (3.30) | 0 (0) | 0 (0) | 1 | |
| ANT killer | 1 (3.30) | 0 (0) | 0 (0) | 1 | |
| Tablet | 5 (16.70) | 11 (36.70) | 19 (61.30) | 35 | |
| Attempted hanging | 1 (3.30) | 3 (10) | 0 (0) | 4 | |
| Drowning | 1 (3.30) | 0 (0) | 0 (0) | 1 | |
| Cactus extract poisoning | 0 (0) | 1 (3.30) | 0 (0) | 1 | |
| Cut throat | 0 (0) | 1 (3.30) | 0 (0) | 1 | |
| Total | 30 (100) | 30 (100) | 30 (100) | 90 | |

OPC: Organophosphorus poisoning, ALA: Ala poisoning, ANT: ANT killer poisoning

(53.3%) followed by failure in examinations (20%) then break up/conflict in relationships (13.3%). In the adult population, the most common cause was marital conflict. In geriatric population, the attempt due to some underlying psychiatric illness is 22.6%.

The Beck's Suicide Intent Scale found that 66.7% of adolescents and 50% of adults had a low intent and 67.7% of the geriatric group had a medium intent. The Risk-Rescue Rating Scale, the chart shows that adolescents have low-moderate risk (46.7%) and in adults (40%) low-moderate risk and in geriatric group 43.4% moderate and 30% high-moderate risk. Table 5 shows the psychiatric morbidity, and in adolescents, 60% of the suicides are impulsive and do not have significant psychopathology, but psychiatric morbidity is as high as 83.9% in the geriatric group.

In adolescents, adjustment disorder was found in 16.7% and 6.7% had alcohol dependence. In adults, 16.7% had mild depression and 13.3% had a history of substance dependence and 6.7% had borderline personality and 10% had adjustment disorder and 6.7% had dysthymia. In the geriatric group, alcohol dependence was found to be 29% followed by 16.7% had dysthymia, 3.2% with delusional disorder, and 3.2% had substance-induced psychosis.

DISCUSSION

Suicide is the leading cause of premature death in young adults. Attempted suicide is 5–20 times more common than completed suicide (meta-analysis by Harris and Barraclough).^[5]

In our study, the majority of the adolescents belong to late adolescent period. The number of suicides increases with age. This is in accordance with the findings of Kotila and

Lonnqvist study 1982.^[6] The majority of suicide attempters were female in both adolescent and adult group. Similar findings were found in White.^[7] Girls mature first and face the problems of adulthood earlier than boys.

The majority of the suicide attempters in our study were Hindu, Tamil speaking, and upper lower socioeconomic status, these findings were not found to be statistically significant because the study was conducted in CMCH, a semi-urban area with the majority of Hindu population. Most of the adolescents completed their secondary education (70%). The geriatric group was less educated than younger counterparts; this might be due to the comparative lack of emphasis on education in the previous decades.

Adolescents 93.3% were unmarried; this is an expected result in this age group. Geriatric 51.6% were married, 16.1% were separated, and 32.3% were widow/widower. Bille-Brahe *et al.* study^[8] found that 43% of the interviewed were married or had a steady cohabitant. Examination of the marital status of attempted suicide subjects by Bland *et al.*^[9] showed that 57.8% were single and 26.3% were married.

The Rao^[10] study says that very few of the suicide attempters were from joint families; this correlates with our study. 70% of adolescent and 56.7% of adults belong to the nuclear family. 33.6% of the geriatric group are living alone.

In our study, 66.7% of the adolescent group have a history of suicide in peers. Some of the adolescents even informed their peers first regarding the suicide attempt. This area can be explored further by future studies.

Nearly 30% of the adult group and 22.6% of the geriatric group have the history of morbidity in spouse which has to be treated for the favorable outcome in the patients.

Table 5: Distribution of Psychiatric morbidity with suicide attempt

| Psychiatric morbidity | Adolescence (%) | Adults (%) | Geriatric (%) | Total | P |
|--|-----------------|------------|---------------|-------|-------|
| Nil/impulsive | 18 (60) | 9 (29) | 5 (16.70) | 27 | 0.002 |
| Moderate depression | 0 (0) | 1 (3.20) | 4 (13.30) | 6 | |
| Severe depression | 0 (0) | 1 (3.20) | 0 (0) | 4 | |
| Borderline personality disorder | 0 (0) | 2 (6.70) | 1 (3.20) | 4 | |
| Dysthymia | 0 (0) | 2 (6.70) | 5 (16.70) | 7 | |
| Delusional disorder | 0 (0) | 0 (0) | 1 (3.20) | 1 | |
| Adjustment disorder | 5 (16.70) | 3 (10) | 0 (0) | 8 | |
| Dissociative disorder | 3 (10) | 1 (3.30) | 0 (0) | 4 | |
| Alcohol dependence | 2 (6.70) | 4 (13.30) | 9 (29) | 15 | |
| Borderline intelligence | 1 (3.30) | 0 (0) | 0 (0) | 1 | |
| Substance-induced psychosis | 1 (3.30) | 0 (0) | 1 (3.20) | 2 | |
| Schizophrenia | 0 (0) | 1 (3.30) | 0 (0) | 1 | |
| Mild depression | 0 (0) | 5 (16.70) | 4 (13.30) | 9 | |
| Mild depression and alcohol dependence | 0 (0) | 1 (3.30) | 0 (0) | 1 | |
| Total | 30 (100) | 30 (100) | 30 (100) | 90 | |

In our study, 43.3% of adults and adolescents and 79.9% of the geriatric group have a family history of suicide. Brent *et al.*^[11] say suicidal behavior may be transmitted as a family trait and, in our study, we have found that 23.3% of the geriatric suicide attempters have a positive history of suicide in their children.

Pfeffer *et al.* study^[12] shows the association between substance abuse in the family and suicide attempt. In our study, in adolescent, 26.7% and 16.7% in adults had a positive history of substance abuse in the father. History of depression in mother was 6.7% in the adolescent group.

The proportion of adolescents who had repeated attempts of suicide was 14% (Hawton *et al.* study 1982).^[13] In our study, adolescents had a history of 6.7%.

Bancroft and Marsack^[14] say the risk of death increases when there are multiple suicide attempts in the past. In our study, 20% of adults and 16.1% of the geriatric group had multiple attempts of suicide.

In our study, 49% of the geriatric group had physical comorbidity. Poor physical health generates stress in life, increases the caregiver burden, causes family discord and drains financial resources.^[15] In our study, 32.3% of the geriatric group suffered from diabetes mellitus, 25.8% suffered from hypertension, and 25.8% suffered from stroke.

The method of suicide varies from country to country, culture to culture. The Ponnudurai *et al.*^[16] study says that poisoning is the most common cause and methods such as drowning, hanging, and jumping were rare. This correlates with our study as 33.3% of adolescents had oleander seed poisoning and the majority of adult and geriatric patients had tablet poisoning. The common tablets were over the counter analgesics and thyroxin tablets in adults and drugs prescribed for some physical ailment in the geriatric group. Measures can be taken to regularize the issue of such OTC medications. In adolescents, the common cause was oleander seeds. This is due to the easy availability of those plants near the residence and exposure in movies. Latha *et al.* 1996^[17] observed a similar trend and pointed out that violent methods such as drowning, hanging, and jumping were rare.

Nearly 53.3% of adolescents attempted suicide following the interpersonal conflict. The most common motive of adolescent to make a suicide attempt was to escape from a deadlock like situation.^[6]

Majority of the adolescent's suicides were impulsive, mostly immediately or within 24 h of the stressor and the geriatric

suicides were planned and less impulsive, this correlates with White *et al.* study.^[7] The intent was mostly found to be low in adolescents. Most of the geriatric suicides had a medium to high intent.

The lethality was also higher in the geriatric group compared to other groups they had higher rates of past h/o suicide and psychiatric morbidity and physical comorbidity.

Most of the geriatric attempters had a significantly higher rate of depression. Lack of recognition of depression in the geriatric population is because depression presents differently in elderly and confused with mental conditions.^[18] Many physicians miss or dismiss the telltale signs of depression in the elderly as normal complaints associated with aging. Depression presents differently in the elderly. It can present as fatigue, concentration deficit, change in sleep and appetite, somatic complaints, and diminished memory. Hence, this study highlights the screening of mental illness in geriatric population who present with a physical complaint to the primary care physician.

REFERENCES

1. Sadock BJ, Sadock VA. Kaplan and Saddock'S Comprehensive Textbook of Psychiatry. 10th ed. Philadelphia, PA: Lippincott Williams and Wilkins; 2000.
2. Michael GG, Gath D, Mayou R. Oxford Text Book of Psychiatry. 2nd ed. Oxford: Oxford University Press; 1989.
3. Beck AT, Kovacs M, Weissman A. Assessment of suicidal intention: The scale for suicide ideation. *J Consult Clin Psychol* 1979;47:343-52.
4. Weisman AD, Worden JW. Risk-rescue rating in suicide assessment. *Arch Gen Psychiatry* 1972;26:553-60.
5. Harris EC, Barraclough B. Suicide as an outcome for mental disorders. A meta-analysis. *Br J Psychiatry* 1997;170:205-28.
6. Kotila L, Lönnqvist J. Adolescent suicide attempts 1973-1982 in the Helsinki area. *Acta Psychiatr Scand* 1987;76:346-54.
7. White HC. Self poisoning in adolescents. *Br J Psychiatry* 1974;124:24-35.
8. Bille-Brahe U, Hansen W, Kolmos L. Attempted suicide in Denmark. *Acta Psychiatr Scand* 1985;71:389-94.
9. Bland RC, Newman SC, Dyck RJ. The epidemiology of parasuicide in Edmonton. *Can J Psychiatry* 1994;39:391-6.
10. Rao AV. Attempted suicide. *Indian J Psychiatry* 1965;7:253.
11. Brent DA, Bridge J, Johnson BA, Connolly J. Suicidal behavior runs in families. A controlled family study of adolescent suicide victims. *Arch Gen Psychiatry* 1996;53:1145-52.
12. Pfeffer CR, Newcorn J, Kaplan G. Suicidal behaviour in adolescent psychiatric inpatients. *J Am Acad Child Adolesc Psychiatry* 1998;27:357-61.
13. Hawton K, Saunders KE, O'Connor RC. Self-harm and suicide in adolescents. *Lancet* 2012;379:2373-82.
14. Bancroft J, Marsack P. The repetitiveness of self-poisoning and self-injury. *Br J Psychiatry* 1977;131:394-9.
15. Emanuel EJ, Fairclough DL, Slutsman J, Emanuel LL. Understanding economic and other burdens of terminal illness: The experience of patients and their caregivers. *Ann Intern Med* 2000;132:451-9.
16. Ponnudurai R, Jeyakar J, Saraswathy M. Attempted suicides in Madras. *Indian J Psychiatry* 1986;28:59-62.
17. Latha KS, Bhat SM, D'Souza P. Suicide attempters in a general hospital unit in India: Their socio-demographic and clinical profile emphasis on cross-cultural aspects. *Acta Psychiatr Scand* 1996;94:26-30.
18. Lantz MS. Depression in the elderly: Recognition and treatment. *Clin Geriatr* 2002;10:18-24.