Suicidal Intent in Young Adults Attending the Suicide Prevention Clinic at a Tertiary Care Centre in Kerala, India

Rajeev Kattuparackal Madhavan[1], Rekha Mathew[2], Jaimon Plathottathil Michael[3], Aravind Karunakaran[4], Ganga Gangadhara Kaimal[5], Binu Abraham[6]

[1, 2, 3, 4, 5] Department of Psychiatry, Government Medical College, Kottayam, Kerala, India.
[6]Department of Paediatrics, Government Medical College, Kollam, Kerala, India.

ABSTRACT

BACKGROUND

Suicide attempts in young adults in the age group 18 - 25 years have grown exponentially across the globe in the last three decades. Suicide is the third leading cause of death among young adults worldwide and is the second leading cause of death in 15 – 29-year-olds. The studies on the factors affecting suicidal intent among young adult suicide attempters are few from the Indian context and young adult group is of utmost importance. So, this study was done to estimate the suicidal intent among young adult suicide attempters and to assess the various factors associated with suicidal intent among young adults.

METHODS

The study was an analytical cross-sectional study, which was carried out at the Suicide Prevention Clinic of the Department of Psychiatry at a Tertiary Care Centre in Kerala, India over a period of 1 year from October 2015 to September 2016. The consecutive 160 young adult suicide attempters were interviewed. Beck's suicide intent scale was used to assess the severity of suicide attempts. Statistical significance of socio-demographic factors and suicidal intent score was assessed by independent student t test and one way analysis of variance (ANOVA).

RESULTS

Out of the 160 participants, 50 (31.2 %) had low suicidal intent, 71 (44.4 %) had medium suicidal intent and 39 (24.4 %) had high suicidal intent. The study showed significant association between marital status ($t = 2.515$, $P = 0.011$), Occupation ($F = 7.991$, $P < 0.001$), previous suicide attempt ($t = -2.586$, $P = 0.011$), mode of attempt ($F = 7.228$, $P < 0.001$) and psychiatric disorder ($F = 11.218$, $P < 0.001$) with the suicidal intent score. The study has found a significant association between the caregiver and suicidal intent score ($F = 4.339$, $P = 0.006$) which needs to be researched further.

CONCLUSIONS

Our study showed significant association between the socio-demographic variables like occupation, marital status, caregiver, mode of attempt, previous attempt and psychiatric diagnosis with the suicidal intent scores of young adult suicide attempters attending the suicide prevention clinic. This finding throws light to the factors contributing to high suicidal intent among young adults. The suicidal rates among the young adults are on the rise and we as the health professionals should be aware of these factors which will help in preventing young adult suicides.

KEYWORDS

Suicidal Intent, Young Adults, Suicide Prevention Clinic, Suicidal Behaviour, Kerala

Corresponding Author:
Dr. Rekha Mathew,
Assistant Professor,
Department of Psychiatry,
Government Medical College,
Gandhinagar, Kottayam - 686008,
Kerala, India.
E-mail: rekhamathew89@gmail.com

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BACKGROUND

Suicide attempts in young adults have grown exponentially across the globe in the last three decades. Suicide is the second leading cause of death for those between the ages of 25 and 29 years worldwide. According to world health organization (WHO), every year, an estimated 804,000 people died from suicide in 2012 and 20 times more people attempted suicide; representing an annual global age standardized suicide rate of 11.4 per 100,000 population (15.0 for males and 8.0 for females). On an average, 1 death every 40 seconds and 1 attempt every 3 second occurs worldwide.[1] Research carried out by mental health professionals in different populations and in various countries indicate that attempted suicides occur about 8 to 20 times more frequently than completed suicides. Attempted suicides occur more frequently among young people. Rates of attempted suicides tend to be 2 to 3 times higher in women than men.[2]

Deliberate self-harm (DSH) is defined as an act with non-fatal outcome, in which an individual deliberately initiates a non-habitual behaviour that, without intervention from others, will cause self-harm, or deliberately ingests a substance in excess of the prescribed or generally recognized therapeutic dosage.[3] Suicidal behaviour among young adults is a public health and social issue globally.[4,5] Suicide is one of the leading causes of death among young adults and non-fatal suicidal behaviour is more common in younger age groups.[6]

Suicidal intent is characterised as "an individual's desire to bring about his or her own death"[7] specifically excluding the motives for attempting suicide. Individuals in the age group of 18 - 25 years are referred to as young adults.[8] In May 2013, the sixty-sixth world health assembly adopted the first ever mental health action plan of the WHO. Suicide prevention is an integral part of the plan, with the goal of reducing the rate of suicide in countries by 10 % by 2020.[1]

Age of self-harming attempt varies between 6 and 75, of these, 60 % are between the ages of 16 and 25 although higher prevalence of self-harm behaviour was reported. Self-harm behaviour is found to be correlated with low level of education. High risk factors for apparent suicidal attempt in self-injurious behaviour is presence of strong suicidal ideas, absence of co-morbid psychiatric disease and utilization of a highly lethal method.[9] Suicide is responsible for about 6 % of all deaths among young adults.[10] An Indian study has shown that the suicide rate was highest in the 15 - 29 years age group (38 per 100,000 population) followed by the 30 - 44 years age group (34 per 100,000 population). The suicide rates were 18 per 100,000 in those aged 45 - 59 years and 7 per 100,000 in those aged > 60 years.[11]

Young adults in the age group 15 - 29 years accounted for the largest proportion (34.5 %) of suicides followed by individuals in the age group 30 - 44 years (34.2 %). A psychological autopsy study from India found that the young adults are at increased risk of suicide with age 20 - 24 years followed by 25 - 29 years showing the highest rates of suicide.[12] Another study had identified persons in the age group 15 - 39 as the most vulnerable group for suicides.[13]

Adolescence and young adulthood are the periods with major physiological, psychological and behavioural changes with changing patterns of social interactions and relations. These changes may be accompanied by significant stress for subjects belonging to these age groups and those who interact with them.

It is also a period of impulsivity and also of changes in perception and practice. It is also the time to develop decision making skills, along with acquisition of new emotional, cognitive, and social skills. Knowledge of the risk factors for suicidal behaviour in young adults has improved in the past 20 years. Converging evidence points to psychiatric or mental disorders as well as a past history of suicidal behaviour as the strongest predictors of suicidal behaviour and death by suicide. Although there are many studies regarding the suicidal behaviour among young adults and the associated factors in the literature, studies on the factors affecting suicidal intent among young adult suicide attempters are few from the Indian context and young adult group is of utmost importance so that intervention at different level has to be taken into consideration. Assessment of suicidal intent is important as it may be a strong predictor for a repeated attempt later in the life.

So, this study was done to estimate the suicidal intent among young adult suicide attempters and to assess the various factors associated with suicidal intent among young adults.

METHODS

The study was an analytical cross-sectional study, which was carried out at the Suicide Prevention Clinic of the Department of Psychiatry at a Tertiary Care Centre in Kerala, India over a period of 1 year from October 2015 to September 2016. The study was approved by the Scientific Review Committee and the Institutional Review Board. Individuals admitted to the hospital with alleged history of attempted suicide were being referred to the psychiatry department by the concerned specialties. These individuals were registered at the suicide prevention clinic and are evaluated in detail by the psychiatrists once their physical condition is stable.

Sample size was calculated using the formula

$$\frac{z^2{}_{1-\alpha/2} \times p \times q}{d^2}$$

(p = 40 %) with a precision of 20 %. The sample size thus calculated was 144. Considering a non-response rate of 10 %, the sample size was taken as 160.

The young adults with suicide attempt cases attending the suicide prevention clinic, department of psychiatry between 18 - 25 years of age who gave written informed consent were recruited for the study. Young adults with intellectual disability and cognitive impairment were excluded from the sample. Consecutive 160 young adult suicide attempters who satisfied the inclusion and exclusion criteria were included in the sample.

The individuals recruited in the study were interviewed by the principal investigator and the details were collected in the specially designed semi-structured proforma for collecting and documenting socio-demographic variables and details of the current suicide attempt. The socio demographic variables included age, gender, educational level, occupation, religion, marital status, type of family, domicile and socio-economic status. The history of previous suicide attempts, mode of attempt, psychiatric diagnosis and the caregiver were the variables included in the details of current DSH. Beck's suicide intent scale, which is a validated tool, was used to assess the severity of suicide attempts.[14] The scale consists of 20 questions which are scaled from 0 to 2, which take into account both the logistics of the suicide attempt as well as the intent. Repeated attempters will have higher scores than those who only attempted once. The suicide intent scores are classified as low intent (15 - 19 points), medium intent (20 - 28 points) and high intent (29 points or more).

Statistical Analysis

Variables and scores obtained were electronically entered into Microsoft Excel. Descriptive statistics of variables were expressed as frequency and percentages. Statistical significance of socio-demographic factors and suicidal intent score was assessed by independent student t test and one way ANOVA and P value of less than 0.05 was considered as significant.

RESULTS

During the study period, 568 individuals who have attempted suicide were referred to the department of psychiatry and were registered in the suicide prevention clinic. 264 (46.5 %) were males and 304 (53.5 %) were females. Out of this, 198 (34.9 %) were young adults in the age group of 18 - 25 years. Among the 198 young adult suicide attempters, 80 (40.4 %) were males and 118 (59.4 %) were females. From 198 individuals, 160 (80.8 %) consecutive young adult suicide attempters who satisfied inclusion and exclusion criteria were recruited into the study.

Out of the 160 participants, 72 (45 %) were males and 88 (55 %) were females. The mean age of the participants is 21.75 years with a standard deviation of 2.685. The mean score of suicidal intent among the participants is 23.59 with a standard deviation of 6.332. The frequency and percentages of young adult suicide attempters with respect to the socio-demographic variables and severity of suicidal intent are given in Table 1. The caregiver for the young adults attempted suicide were mothers for 110 (68.8 %), husbands for 26 (16.2 %), fathers for 16 (10 %) and wives for 8 (5 %) study participants.

Regarding the mode of attempt, high dose medication use was seen in 78 (48.8 %) participants followed by poisoning in 70 (43.8 %), cutting body parts in 8 (5 %) and partial hanging in 4 (2.5 %) individuals. Depressive disorder was contributing to 60 (37.5 %) of the suicidal attempts followed by personality disorder in 30 (18.8 %) individuals. Out of the 160 participants, 50 (31.2 %) had low suicidal intent, 71 (44.4 %) had medium suicidal intent and 39 (24.4 %) had high suicidal intent.

Variables	Total (n = 160)	Low Suicidal Intent (n = 50)	Medium Suicidal Intent (n = 71)	High Suicidal Intent (n = 39)
Gender	Males (n = 72, 45 %)	18 (36 %)	34 (47.9 %)	20 (51.3 %)
	Females (n = 88, 55 %)	32 (64 %)	37 (52.1 %)	19 (48.7 %)
Education	School education (n = 121, 75.6 %)	37 (74 %)	54 (76 %)	30 (76.9 %)
	Degree education (n = 24, 15 %)	9 (18 %)	8 (11.3 %)	7 (17.9 %)
	Professional (n = 15, 9.4 %)	4 (8 %)	9 (12.7 %)	2 (5.2 %)
Occupation	Unemployed (n = 66, 41.2 %)	18 (36 %)	25 (35.2 %)	23 (59 %)
	Student (n = 44, 27.6 %)	23 (46 %)	18 (25.4 %)	3 (7.7 %)
	Employed (n = 50, 31.2 %)	9 (18 %)	28 (39.4 %)	13 (33.3 %)
Religion	Hindu (n = 109, 68.1 %)	32 (64 %)	50 (70.4 %)	27 (69.2 %)
	Christian (n = 45, 28.1 %)	15 (30 %)	19 (26.8 %)	11 (28.2 %)
	Muslim (n = 6, 3.8 %)	3 (6 %)	2 (2.8 %)	1 (2.6 %)
Marital status	Unmarried (n = 112, 70 %)	41 (82 %)	49 (69.1 %)	22 (56.4 %)
	Married (n = 48, 30 %)	9 (18 %)	22 (30.9 %)	17 (43.6 %)
Family type	Nuclear (n = 158, 98.8 %)	49 (98 %)	70 (98.6 %)	39 (100 %)
	Joint (n = 2, 1.2 %)	1 (2 %)	1 (1.4 %)	0 (0 %)
Socioeconomic status	BPL (n = 154, 96.2 %)	49 (98 %)	67 (94.4 %)	38 (97.4 %)
	APL (n = 6, 3.8 %)	1 (2 %)	4 (5.6 %)	1 (2.6 %)
Caregiver	Husband (n = 26, 16.2 %)	6 (12 %)	12 (16.9 %)	8 (20.5 %)
	Wife (n = 8, 5 %)	0 (0 %)	3 (4.2 %)	5 (12.8 %)
	Father (n = 16, 10 %)	9 (18 %)	4 (5.6 %)	3 (7.7 %)
	Mother (n = 110, 68.8 %)	35 (70 %)	52 (73.2 %)	23 (59 %)
Mode of attempt	High dose medicine (n = 78, 48.8 %)	33 (66 %)	32 (45.1 %)	13 (33.3 %)
	Partial hanging (n = 4, 2.5 %)	0 (0%)	1 (1.4 %)	3 (7.7 %)
	Poisoning (n = 70, 43.8 %)	14 (28 %)	33 (46.5 %)	23 (59 %)
	Cutting Body parts (n = 8, 5 %)	3 (6 %)	5 (7 %)	0 (0 %)
Previous attempt	Single (n = 141, 88.1 %)	47 (94 %)	61 (85.9 %)	33 (84.6 %)
	Repetitive (n = 19, 11.9 %)	3 (6 %)	10 (14.1 %)	6 (15.4 %)
Psychiatric diagnosis	Impulsive act (n = 45, 28.1 %)	24 (48 %)	18 (25.4 %)	3 (7.7 %)
	Depressive disorder (n = 60, 37.5 %)	5 (10 %)	31 (43.7 %)	24 (61.5 %)
	Anxiety disorder (n = 13, 8.1 %)	6 (12 %)	4 (5.6 %)	3 (7.7 %)
	Personality disorder (n = 30, 18.8 %)	12 (24 %)	14 (19.7 %)	4 (10.3 %)
	Psychotic disorder (n = 12, 7.5 %)	3 (6 %)	4 (5.6 %)	5 (12.8 %)

Table 1. Frequency and Percentages of Young Adult Suicide Attempters with Respect to the Socio-Demographic Variables and Severity of Suicidal Intent

The association between the socio-demographic variables and suicidal intent score are illustrated in Table 2. There are significant association between the suicidal intent scores and occupation, marital status, previous DSH, mode of suicidal attempt and psychiatric diagnosis. The caregiver for the young adult suicide attempters were husband, wife, father, and mother. Our study has found a significant association between the caregiver and the suicidal intent scores.

Variables		Beck's Suicidal Intent Scale Score			
		Mean	SD	Statistical Value	p Value
Gender*	Males (n = 72)	24.40	6.452	T = 1.479	0.141
	Females (n = 88)	22.92	6.189		
Education†	School education (n = 121)	23.72	6.360	F = 0.116	0.891
	Degree education (n = 24)	23.29	6.963		
	Professional (n = 15)	23.00	5.318		
Occupation†	Unemployed (n = 66)	24.88	6.581	F = 7.991	< 0.001
	Student (n = 44)	20.48	5.484		
	Employed (n = 50)	24.62	5.852		
Religion†	Hindu (n = 109)	23.75	6.276	F = 0.368	0.693
	Christian (n = 45)	23.47	6.615		
	Muslim (n = 6)	21.50	5.753		
Marital status*	Unmarried (n = 112)	22.78	6.074	t = 2.515	0.013
	Married (n = 48)	25.48	6.578		
Family type*	Nuclear (n = 158)	23.61	6.354	t = 0.356	0.722
	Joint (n = 2)	22.00	5.657		
Socioeconomic status*	BPL (n = 154)	23.60	6.387	t = 0.100	0.921
	APL (n = 6)	23.33	5.164		
Caregiver†	Husband (n = 26)	24.12	5.901	F = 4.339	0.006
	Wife (n = 8)	30.00	7.151		
	Father (n = 16)	20.50	6.077		
	Mother (n = 110)	23.45	6.134		
Mode of attempt†	High dose medicine (n = 78)	21.95	6.039	F = 7.228	< 0.001
	Partial hanging (n = 4)	33.25	6.397		
	Poisoning (n = 70)	25.10	6.005		
	Cutting body parts (n = 8)	21.50	5.043		
Previous attempt*	Single (n = 141)	23.12	6.238	t = - 2.586	0.011
	Repetitive (n = 19)	27.05	6.096		
Psychiatric diagnosis†	Impulsive act (n = 45)	19.71	4.610	F = 11.218	< 0.001
	Depressive disorder (n = 60)	26.82	5.485		
	Anxiety disorder (n = 13)	22.85	6.890		
	Personality disorder (n = 30)	22.27	6.040		
	Psychotic disorder (n = 12)	26.08	7.391		

Table 2. Association between the Socio Demographic Variables and Suicidal Intent Score

* Independent Student t Test, † One Way ANOVA Test, Results in bold indicate significant P value at 0.05

DISCUSSION

The adulthood period in life is characterized by changes and transitions from one state into another in several domains at the same time. Young adults have to make decisions regarding important directions in their life during this period. They need to address new challenges regarding their own identity, developing self-esteem, acquiring responsibility and independence and making new intimate relationships. Risk factors of young adult suicide can be seen as factors that prevent this support or hinder access to these resources, whereas protective factors strengthen and protect these resources and serve as a buffer against risk factors. Numerous factors can contribute to suicide attempts and each suicide attempt is caused by a highly unique, dynamic and complex interplay of genetic, biological, psychological and social factors.[15] It is possible to identify different types of factors that are clearly associated with an increased risk of young adult suicide which is highly relevant with regard to its prevention.

Young adult suicidal behaviour was found to be associated with females who have not attended school or college, individuals incapable of making independent decisions, physical abuse at home, lifetime experience of sexual abuse, and probable common mental disorders in a study from India. Suicide attempt rates are estimated to be 20 times higher than that of suicides in which females demonstrate a disproportionately higher rate of suicide attempts compared to males. The male to female ratio of age standardized suicide rates globally is 1.9.[1] The gender paradox of suicidal behaviour phenomenon is that men complete suicides more frequently than females and females engage more frequently in suicide attempts.[16,17] Studies addressing the gender differences in suicidal intent have reported no significant differences between males and females[18,19] whereas few other studies revealed significant associations between suicide intent and gender.[20,21] Our study has not found any significant difference in the suicidal intent scores and gender (P = 0.141) which reflects the high literacy rate and equality of opportunities among both males and females in the state of Kerala, India.

Educational level among young adults is an approximate marker of intelligence, but drawing conclusions on the association of suicidal intent and level of education is difficult. Persons with intellectual disability will be less efficient in coping with stress and the neurodevelopmental abnormalities can increase the risk of psychiatric disorder.[22] In a study of attempted suicide from India, 55.5 % were uneducated[23] and another study has shown that, 54 % of suicide attempters had received high school education or higher.[24] In our study, only 5.2 % individuals with high suicidal intent were having professional education. There is no significant association between the level of education and suicidal intent score in our study (P = 0.891) which may be the result of accessible education to the youth in our state.

Our study found that there is a significant association (P < 0.001) between the occupational status and suicidal intent scores among young suicide attempters. There is significant correlation between gender and marital status in our study. The suicidal intent among the unemployed youth will always be higher than that of employed youth because unemployment increases the suicidal risk through factors such as poverty, social deprivation, domestic difficulties, and hopelessness. Moreover, people with psychiatric disorders are at higher risk of suicide and are also more likely to be unemployed. One study from India found 46 % of suicide attempters were unemployed[23] and another study found that more than 50 % of suicide attempters were employed, 12 % were unemployed and some were either students or housewives.[24] There was no significant association between the religion and the suicidal intent (P = 0.693). The secular nature in the state gives equal opportunities for all people and the religiosity and personal belief has got a protective role from suicidal risk.

The association between the marital status and suicidal intent scores (P = 0.011) are highly significant in our study. Young adults living alone are at increased risk of suicide. Divorced, separated, widowed, and single persons are more likely to commit suicide than married people. The protective effect of marriage was seen more for men than for women and young widowers were at highest risk. Lower rates of suicide among married compared to unmarried women may be explained by sociological theories based on marital status integration and social integration. In an Indian study, 70.4 % of all suicide victims were married and 21.9 % were unmarried. Divorcees and individuals who were separated accounted for about 3.4 %, while widows and widowers comprised 4.3 % of the total suicide victims which shows that the protective role of marriage in suicide is less in developing countries.[25] There are contrasting studies which

show higher attempted suicides among unmarried persons while others show a higher rate among married persons.[23,24] The quality of relationship with the partner, emotional warmth, family support, and ability to cope with the stresses related to marriage and child rearing are more important than marital status in suicidal behaviour among young adults.

Our study has shown that the association between the family type and suicidal intent scores is insignificant (P = 0.722) which reflects that the individual factors are more important in the severity of suicidal intent among young adults rather than family factors which requires further research. All the individuals in our study were from rural domicile so the association of suicidal intent with urban versus rural residence could not be assessed. Majority of the participants (93.8 %) in our study belonged to below poverty line (BPL) families. So, the association of socio-economic status on the suicidal intent is insignificant (P = 0.921). This needs to be further researched with adequate number of participants from different strata of economic class.

The association between the caregiver and the suicidal intent scores are also significant with a P value of 0.006. None of the earlier studies were studied regarding the impact of the caregiver in contributing to the suicidal behaviour and the suicidal intent. The strength of relationship will be more from mothers and this will have a protective role in suicidal behaviour. The suicidal intent is more if the caregiver is the partner and it may be due to the adjustment problems and lack of understanding regarding the mental status of the spouse. This finding points us to do further research about the relationship issues and other reasons for this association.

The individuals using more lethal methods are having high suicidal intent and most of the impulsive suicidal attempts are by wrist slashes which are having low intent. The mode of attempted suicide clearly had a significant association with the suicidal intent scores (P < 0.001) which implies that young adults with lethal suicide attempts should be closely followed up and managed for prevention of further suicidal behaviour.

Young adult suicide attempters with previous attempt also score significantly higher in suicidal intent scores with P = 0.011. About 25 – 33 % of all cases of suicide were preceded by an earlier suicide attempt, a phenomenon that was more prevalent among boys than girls.[26] Researchers found that boys with a previous suicide attempt have a 30-fold increase in suicide risk compared to boys who have not attempted suicide. Girls with previous suicide attempts have a threefold increase in suicide risk. In prospective follow-up studies, it was found that 1 – 6 % of people attempting suicide die by suicide in the first year.[27]

Our study observed that 115 (71.9 %) young adult suicide attempters had psychiatric disorders. The most common mental disorder diagnosed was depressive disorder in 60 (37.5 %). Psychiatric disorders contribute to around 47 to 74 % of suicide risk[28-30] Our study revealed that 18.8 % of participants had personality disorder. Anxiety disorder and psychotic disorders also contribute to suicidal risk among young adults. Impulsivity was a contributing factor in 45 (28.1 %) participants. Our study demonstrated a strong association between the suicidal intent score and the psychiatric diagnosis (P < 0.001) which make us more cautious in managing young adults with various psychiatric disorders carefully and we should take adequate measures to protect the life.

CONCLUSIONS

Our study showed significant association between the socio-demographic variables like occupation, marital status, caregiver, mode of attempt, previous attempt and psychiatric diagnosis with the suicidal intent scores of young adult suicide attempters attending the suicide prevention clinic. This finding throws light to the factors contributing to high suicidal intent among young adults. The suicidal rates among young adults are on the rise and we as health professionals should be aware of these factors which will help in preventing young adult suicides. It is our duty to educate the community regarding the risk factors of young adult suicide. We should also enlighten the society to prevent suicide attempts of our young generation.

Limitations of Our Study

Our study was conducted only in the suicide prevention clinic of a tertiary care level hospital and hence cannot be generalised to general population. The study could have a Berksonian bias as only referred cases were studied. Further research with a control group can get more valid results.

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com.
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REFERENCES

[1] World Health Organization. Preventing suicide: a global imperative. WHO, 2014.
[2] Angle CR, O'Brien TP, McIntre MS. Adolescent self-poisoning: a nine year follow up. Journal of Developmental and Behavioural Pediatrics 1983;4(2):83-87.
[3] Platt S, Bille-Brahe U, Kerkoff A, et al. Parasuicide in Europe: the WHO/EURO multicentre study on parasuicide. Introduction and preliminary analysis for 1989. Acta Psychiatrica Scandinavica 1992;85(2):97-104.
[4] Kolves K, de Leo D. Adolescent suicide rates in 1990-2009: analysis of age group 15 to 19 years worldwide. J Adolesc Health 2016;58(1):69-77.
[5] Robinson J, Hetrick SE, Martin C. Preventing suicide in young people: systematic review. Aust NZ J Psychiatry 2011;45(1):3-26.
[6] Michelmore L, Hindley P. Help-seeking for suicidal thoughts and self-harm in young people: a systematic review. Suicide Life Threat Behav 2012;42(5):507-524.

[7] Hasley JP, Ghosh B, Huggins J, et al. A review of "Suicide intent" within the existing suicide literature. Suicide Life Threat Behav 2008;38(5):576-591.
[8] Jekeilek S, Brown B. The transition to adulthood: characteristics of young adult ages 18-24 in America. Kids Count/PRB/Child Trends Report on Census 2000.
[9] Peterson BS, Zhang H, Lucia SR, et al. Risk factors for presenting problems in child psychiatric emergencies. Journal of American Academy of Child and Adolescent Psychiatry 1996;35(9):1162-1173.
[10] Gururaj G, Isaac MK. Epidemiology of suicides in Bangalore. Bangalore: National Institute of Mental Health and Neuro Sciences 2001. Publication No. 43.
[11] Khan FA, Anand B, Devi MG, et al. Psychological autopsy of suicide-a cross-sectional study. Indian J Psychiatry 2005;47(2):73-78.
[12] Vijayakumar L, Rajkumar S. Are risk factors for suicide universal? A case-control study in India. Acta Psychiatr Scand 1999;99(6):407-411.
[13] Pillai A, Andrews T, Patel V. Violence, psychological distress and the risk of suicidal behaviour in young people in India. Int J Epidemiol 2009;38(2):459-469.
[14] Beck RW, Morris JB, Beck AT. Cross-validation of the Suicidal Intent Scale. Psychol Rep 1974;34(2):445-446.
[15] Patton GC, Coffey C, Sawyer SM, et al. Global patterns of mortality in young people: a systematic analysis of population health data. Lancet 2009;374(9693):881-892.
[16] Canetto SS, Sakinofsky I. The gender paradox in suicide. Suicide Life Threat Behav 1998;28(1):1-23.
[17] Schrijvers DL, Bollen J, Sabbe BGC. The gender paradox in suicidal behaviour and its impact on the suicidal process. J Affect Disord 2012;138(1-2):19-26.
[18] Denning DG, Conwell Y, King D, et al. Method choice, intent and gender in completed suicide. Suicide Life-Threat Behav 2000;30(3):282-288.
[19] Moscicki EK. Gender differences in completed and attempted suicides. Ann Epidemiol 1994;4(2):152-158.
[20] Kumar CTS, Mohan R, Ranjith G, et al. Gender differences in medically serious suicide attempts. A study from South India. Psychiatry Res 2006;144(1):79-86.
[21] Aghanwa H. The determinants of attempted suicide in a general hospital setting in Fiji Islands: a gender-specific study. Gen Hosp Psychiat 2004;26(1):63-69.
[22] Gunnell D, Magnusson PKE, Rasmussen F. Low intelligence test scores in 18 year old men and risk of suicide: cohort study. BMJ 2005;330(7484):167.
[23] Srivastava MK, Sahoo RN, Ghotekar LH, et al. Risk factors associated with attempted suicide: a case control study. Indian J Psychiatry 2004;46(1):33-38.
[24] 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(1):26-30.
[25] Schmidtke A, Bille-Brahe U, DeLeo D, et al. Attempted suicide in Europe: rates, trends and socio-demographic characteristics of suicide attempters during the period 1989-1992. Results of the WHO/EURO Multicentre Study on Parasuicide. Acta Psychiatr Scand 1996;93(5):327-338.
[26] Jena S, Sidhartha T. Non-fatal suicidal behaviors in adolescents. Indian J Psychiatry 2004;46(4):310-318.
[27] Cooper J, Kapur N, Webb R, et al. Suicide after deliberate self-harm: a 4-year cohort study. Am J Psychiatry 2005;162(2):297-303.
[28] Bridge JA, Goldstein TR, Brent DA. Adolescent suicide and suicidal behavior. J Child Psychol Psychiatry 2006;47(3-4):372-394.
[29] Pelkonen M, Marttunen M. Child and adolescent suicide: epidemiology, risk factors and approaches to prevention. Paediatr Drugs 2003;5(4):243-265.
[30] Palmer BA, Pankratz VS, Bostwick JM. The lifetime risk of suicide in schizophrenia: a re-examination. Arch Gen Psychiatry 2005;62(3):247-253.