

# A Web-Based Survey On Suicide And Risk Elements For Suicidal Ideation Among College Students

Srinitha Sridhar<sup>1</sup>, Manju Harichandran<sup>2</sup>, Venkateswaramurthy.N<sup>3\*</sup>

<sup>1,2</sup> Pharm.D, J.K.K.Nattraja College of Pharmacy, Tamilnadu, India.

<sup>3\*</sup> Professor, Department of Pharmacy Practice, J.K.K.Nattraja College of Pharmacy, Tamilnadu, India. Email: [nvmmurthi@gmail.com](mailto:nvmmurthi@gmail.com).

\*Corresponding Author: Venkateswaramurthy.N

**Abstract:** Suicide attempts and suicide ideation are more prevalent among medical students. Suicide is the 2<sup>nd</sup> leading cause of mortality among college students and the third major cause of mortality among 15 to 25-year-olds. This study aimed to analyze the risk elements and prevalence of suicide ideation among medical and non-medical College students in Tamilnadu.

**Materials and Methods:** An institution-based cross-sectional study was carried out from March to September 2021 web-based survey data were collected. Data were analyzed by using Statistical Package for the Social Sciences version 26. Chi-square and Spearman rho correlation was applied to appropriate data at the significance of  $p < 0.05$ .

**Results:** Out of 476 respondents, 86 were found to have the risk of suicide, and 390 were found to be not at suicidal risk among medical and non-medical.

**Conclusion:** Suicidal ideation was found to be associated with increased stress, decreased life satisfaction, and poor mental well-being in students' life, and these factors have a significant role in triggering suicidal ideation.

**Key Message:** As we know stress and other mental health disorders are some of the major public health problems among college students, however, other social factors, particularly economic adversity, are possible risk factors which reduce their satisfaction with life and lead to suicidal ideation. By doing this study prevalence and risk factors of suicidal ideation, will help to identify those at risk and provide timely counselling or support and prevent suicides.

**Key Words:** Students suicide, medical and non-medical, stress, suicidal ideation, satisfaction with life, positive psychology

## Introduction:

Suicide ideation is when a person thinks or plans to commit suicide. Recognition of suicide ideation can help in early intervention and prevention of suicide.<sup>1</sup> Suicide is among the top three causes of death among youth worldwide. According to the World Health Organization (WHO), there were 10.6 suicides per 100,000 people in 2016, with 80 percent of suicides occurring in low- and middle-income nations (young adults). Men were found to have a greater suicide rate (15.6 suicides per 100,000) than women (7.0 per 100,000).<sup>2</sup> According to the National Crime Records Bureau (Ministry of Home Affairs) in India (2019), students were responsible for 7.4% of all suicides.<sup>3</sup> In terms of student suicide rates, Tamil Nadu is ranked third in India, behind Maharashtra and Madhya Pradesh.<sup>4</sup> Academic stress, depression, hopelessness, sexual abuse, failure in examinations, broken families, rage, financial troubles, inefficient problem-solving abilities, feelings of loneliness and isolation were identified to be the top triggering factors for suicide among students, love problems, etc<sup>5</sup> Lower education

levels, lower-middle economic status has been reported to be associated with suicide attempts in Indian settings. The number of suicidal attempters was found to increase gradually with a decrease in the socioeconomic status of both sexes. Most of the studies in different countries have reported that lower social class is a major opportunity to attempt suicide.<sup>6</sup> This study aims to analyze the chances for suicidal ideation and associated risk elements among college students in Tamilnadu. Stress and other mental health disorders are some of the major public health problems among college students. However, other social factors, particularly economic adversity, are possible risk elements that reduce their satisfaction with life and lead to suicidal ideation. Analyzing the prevalence and risk elements of suicidal ideation, a predictor of suicide planning and attempts, among college students will help to identify those at risk and provide timely counseling or support and prevent suicides.

## Aims and Objectives:

To analyze the prevalence and risk elements of suicide ideation among Medical and Non-Medical

college students in Tamilnadu, India. To correlate the socio-demographic characteristics, stress, satisfaction with their life, and also socioeconomic status and mental well-being of the students with suicide ideation.

**Materials and Methods:**

A cross-sectional analysis based on institutions. From March to September 2020, a web-based poll will be performed. In our study, the inclusion criteria were college students of both genders between the ages of 18 to 30, those unwilling to engage in the study, and students from other than Tamil Nadu colleges were excluded. To obtain data, self-administered structured questionnaires were used. The bilingual (English and Tamil) survey form was circulated on social networking sites, requesting participation. The purpose of the survey was briefed in the description. E - Consent form was included at the beginning of the form to ensure voluntary participation. The questionnaire comprised 4 domains, namely, demographics and socioeconomic status (1st section), Satisfaction with Life (2nd section), mental well-being (3rd section), and suicide ideation and behavior (4th section). A motivation video on suicide was included in the survey form.

**The kuppuswamy socio-economic scale** was used to determine an individual's or family's socioeconomic level. The socioeconomic scale has a total score of 3 to 39 and divides families into five categories: the upper class (26-29), upper-middle-class (16-25), lower middle class (11-15), upper-lower (5-10), and lower below 5. All three points, namely education, occupation, and total family income, are added together to get the total score.<sup>7</sup>

**The Satisfaction with Life Scale** is a seven-point Likert scale. The Satisfaction with Life Scale was used to assess respondents' overall satisfaction with their lives. The SWLS has been demonstrated to link with mental health measurements and to predict future behaviors such as suicide attempts. The Satisfaction with Life Scale is a seven-point Likert scale. The possible range of scores is 3-35, with 20 indicating the scale's neutral point. Between 5 and 9 points, the respondent is severely dissatisfied with life, while between 31 and 35 points, the respondent is extremely satisfied.<sup>8</sup>

**Warwick-Edinburgh Well-being mental Scale** is a 14-item mental health scale that measures subjective well-being and psychological functioning. The item scale used to identify at-risk persons and particular risk behaviors were changed in the suicide behavior questionnaire.<sup>9</sup>

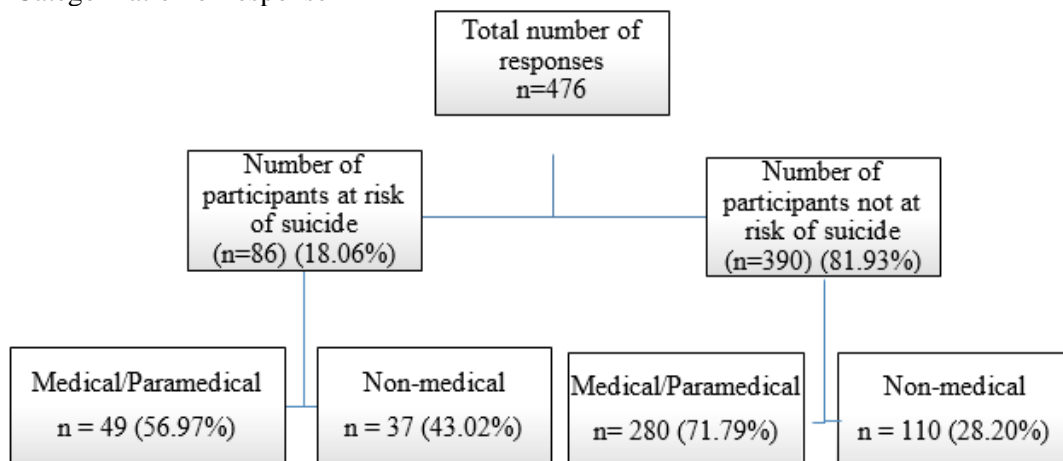
**The Suicide Behaviours Questionnaire** has been updated to examine the risk factors for adolescent suicide. It is made up of four parts. The overall score should be between 3 and 18. A score of 7 indicates that the person is at risk of suicide, whereas a score of 7 indicates that the person is not in danger of attempting suicide.<sup>10</sup>

Statistical analysis was done by using IBM SPSS statistics v 26 software, chi-square test and spearman rho correlation were applied to appropriate data at the significance (p<0.05)

**Results:**

Out of 476 participants, 86 (18.06%) were found to be at risk for suicide and specific risk behaviors and 390(81.9%) were not at risk of suicide behavior. Among the participants aged between 18 and, 21 were more at risk of suicide behavior in that medical 39 and non-medical 33. Figure (1)

**Figure 1** Categorization of response



Note: This figure represents on total number of response and classification of participants according to their score about suicide risk and not at risk

Female suicidal ideation is more prevalent when compared to male suicidal ideation. Medical students have a high prevalence of suicidal ideation

49(10.29%). Academic-related stress is mostly associated with an increased risk of suicide behavior that is 20(23.25%) Table 1.

**Table 1** Categorized Participants’ Response For There Are Of Stress

AREA OF STRESS	AT RISK OF SUICIDE FREQUENCY (N=86)		NOT AT RISK OF SUICIDE FREQUENCY (N=390)	
	MEDICAL PARAMEDICAL	NON- MEDICAL	MEDICAL PARAMEDICAL	NON- MEDICAL
ACADEMIC RELATED	20(23.25%)	9(10.46%)	120(30.76%)	25(6.41%)
FAMILY RELATED	15(17.44%)	15(17.44%)	97(24.87%)	27(6.92%)
FRIEND RELATED	14(16.27%)	7(8.13%)	41(10.51%)	9(2.30%)
HEALTH RELATED	13(15.11%)	11(12.79%)	54(13.84%)	12(3.07%)
MAJOR LOSS	6(6.97%)	6(6.97%)	20(5.12%)	6(1.53%)
ENVIRONMENTAL RELATED	7(8.13%)	6(6.97%)	42(10.76%)	11(2.82%)
SELF-ESTEEM RELATED	17(19.76%)	11(12.79%)	34(8.71%)	6(1.53%)
NO STRESS	9(10.46%)	10(11.62%)	100(25.64%)	52(13.33%)
NONE OF THE ABOVE	2(2.32%)	2(2.32%)	36(9.23%)	11(2.82%)

NOTE: This table demonstrate types of stress students are facing and their responses.

Based on the socio-economic status of participants upper class medical and non-medical 4(4.65%) and 1(1.16%), upper middle class medical and nonmedical 21(24.41%) and 13 (15.11%), lower-middle medical and non-medical 12(13.95%) and 12(13.95%), upper-lower medical and non-medical 12(13.95%) and 10(11.62%), lower non-medical 1(1.16%). There is no significant correlation between socioeconomic status and suicide (p-value 0.592). In medical/paramedical students, satisfaction with life scale above-average medical and non-medical 6 (6.97%) and 2 (2.32%), average medical and non-medical 34 (39.53%) and 22 (25.58%), below average medical and non-medical 7 (8.13%) and 6 (6.97%), very low medical and

non-medical 2 (2.32%) and 7 (8.13%). A significant negative correlation was found between suicide risk and life satisfaction (p-value 0.000). Participants' mental well was extremely satisfied medical and non-medical 5 (5.81%) and 1 (1.16%), satisfied medical and non-medical 14 (16.27%) and 9 (10.46%) slightly satisfied medical and non-medical 17 (19.76%) and 5 (5.81%), neutral non-medical 2 (2.32%), slightly dissatisfied medical and non-medical 7 (8.13%) and 8 (9.30%), dissatisfied medical and non-medical 4 (4.65%) and 9 (10.46%), extremely dissatisfied medical and non-medical 2 (2.32%) and 3 (3.48%) significant negative correlation was found between suicide risk and mental well-being (p-value 0.000) Table 2.

**Table 2** Categorized participants mental well-being status according to their score

MENTAL WELL BEING	AT RISK OF SUICIDE FREQUENCY (N=86)		NOT AT RISK OF SUICIDE FREQUENCY (N=390)		p-value
	MEDICAL PARAMEDICAL	NON- MEDICAL	MEDICAL PARAMEDICAL	NON- MEDICAL	
ABOVE AVERAGE	6(6.97%)	2(2.32%)	79(20.25%)	23(5.89%)	0.006
AVERAGE	34(39.53%)	22(25.58%)	162(41.53%)	61(15.64%)	
BELOW AVERAGE	7(8.13%)	6(6.97%)	18(4.61%)	17(4.35%)	
VERY LOW	2(2.32%)	7(8.13%)	18(4.61%)	7(1.79%)	

NOTE: This table demonstrate participant’s at-risk individuals and specific risk behaviours.

Prevalence of suicidal ideation was high among females when compared to males. The prevalence of suicidal plans was somewhat the same between both genders. p-value null hypothesis <0.01

**Discussion**

By analyzing the risk factors of suicidal ideation, a predictor of suicide planning and attempts, among college students will help to identify those at risk and provide timely counselling or support and prevent suicides. Suicidal ideation is an alarming problem in our society as it increases the risk of suicidal attempts. Medical students are more prone

to stress and depression due to overburdening academic responsibilities and various other factors hence they are more likely to experience suicidal thoughts. However, the prevalence of suicide risk reported in our study is lesser than that reported in a similar study conducted by Arun P et al., (2021) where the prevalence of suicide risk was found to be 29.6%.<sup>11</sup> Majority of the participants at risk of suicide belong to the age group of 18 – 21(73%) years old. Arria A et al., (2009) reported that women had higher levels of suicide ideation than men.<sup>12</sup> Similarly, various studies reviewed by Dyrbye LN et al., (2012)<sup>13</sup> Thompson et al., (2009)<sup>14</sup> have shown a very high prevalence of suicidal ideation in medical students, ranging from 9.1% to 48.2%.<sup>15, 16</sup> A similar study conducted by Saleh D et al., (2017) reported low self-esteem (57.6%), little optimism (56.7%), and a low sense of self-efficacy (62.7%).<sup>17</sup> Watson et al.,(2020) it was found that most of the students (55%) preferred friends as a source of help when needed. Another source of help was the teacher or counselor (22.5%).<sup>18</sup> In contrast to this, Kar N et al., (2010) stated that Lower education levels and lower-middle economic status have been reported to be associated with suicide attempts in Indian settings.<sup>19</sup> In a similar study by Koivumaa-HH et al., (2001) Life dissatisfaction has a long-term effect on the risk of suicide. Their higher mean life satisfaction scores indicated significantly greater dissatisfaction.<sup>20</sup>

In the review of Association of socio-economic position and suicide/attempted suicide in low and middle income countries in South and South-East Asia conducted by Knipe DW *et al.*, (2015) found Most studies suggest that lower levels of SEP (socio economic position) are associated with an increased risk of suicide/attempted suicide, though findings are not always consistent between and within countries. Over half of the studies included in this review were of moderate/low quality.<sup>21</sup> Seo EH *et al.*, (2018) Life satisfaction and happiness associated with depressive symptoms among university students: a cross-sectional study in Korea, The Satisfaction with Life Scale scores were significantly lower in the risk group than non-risk group.<sup>22</sup>

### Limitation

Although less likely due to the web-based survey, social desirability bias in the students' responses are still possible. It is highly possible that students wouldn't have genuinely reported suicidal ideation or attempts as it is a very sensitive and personal issue.

### Conclusion

Our study reported that 18.06% of students were at risk for suicide and specific risk behaviours according to The Suicide Behaviors Questionnaire-Revised (SBQ-R). Suicidal ideation was associated with increased stress, decreased life satisfaction, and poor mental well-being in students' lives, and these factors have a significant role in triggering suicidal ideation. Most of the participants were found to have academic-related stress. Our study emphasized the importance of regular identification of the population at risk of committing suicide and providing them with adequate support to overcome the triggering factors. This study recommends that measures be developed to identify and refer high-risk adolescents and young adults for mental health care and that they can be implemented effectively. To prevent suicidal thoughts among students, a multifaceted approach that includes mental health care services, academic support systems, mentoring, and counseling facilities is needed.

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## Appendices

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## Conflicts Of Interest

The authors whose names are listed immediately below report the following details of affiliation or involvement in an organization or entity with a financial or non-financial interest in the subject matter or materials discussed in this manuscript. The authors whose names are listed immediately below certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

## Author names:

Manju.H  
Srinitha.S  
Venkateswaramurthy.N

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