



Original Research



The Prevalence of Suicidal Thoughts among Medical students of Islamic Azad University, Kerman branch in the Academic Year 2021-2022

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ABSTRACT

Suicide among university students is undoubtedly an important issue and understanding its underlying risk factors may provide a suitable solution to prevent this ominous phenomenon. Therefore, this study aimed to determine the prevalence of suicidal thoughts and the related risk factors among medical students of Azad Kerman University in 2021. In a cross-sectional survey study, medical students were included in the study. The prevalence of suicidal ideation was assessed by using the Standard Beck Scale for suicidal ideation (BSSI) questionnaire and its association was evaluated with subject variables including age, gender, educational levels, place of residence, marital status, religiosity level, history of psychiatric diseases in family members, smoking and previous psychiatric visiting. The collected data were analyzed using t-test, chi-square, and unconditional binary logistic regression. 101 medical students participated in this study. Their average age was 22.90 ± 2.66 years and most of them (61.4%) were women. The prevalence of suicidal ideation among them was estimated at 39.6%. Furthermore, people who are younger or had a previous psychiatric consultation showed a higher prevalence of suicidal ideation. Based on the obtained results, the prevalence of suicidal ideation in the studied sample of medical students is relatively high. Also, the results of the analysis showed that people who are younger or had a history of previous psychiatric consultation had higher scores of suicidal ideations. Therefore, medical students with such characterizations should be given more attention in the planning of suicide prevention.

Keywords: Medical students, Prevalence of suicide, Related factors, Suicidal ideation.

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INTRODUCTION

Suicide is one of the major public health issues and is defined as someone attempting or tendency to take his/her own life (1). Suicidal ideation (SI) represents a wide range of mental states that focus on taking own life. This idea may potentially result in attempts to commit suicide (2). Increasing SI and attempts among young people have become a global concern (3). Based on the WHO report, suicide is the third cause of death among 15–29-year-olds (4). More than 700,000 people take their own life every year. It was shown that low and middle-income countries have a high rate of suicide incidence (5). Many factors are associated with the incidence of suicide including social and environmental factors, biological aspects, psychological and clinical factors (6). Among the general population, university students face more risk factors such as being away from home, academic demands, exams, financial concerns, etc. that may increase the risk of committing suicide (7). Otherwise, the medical field is another factor that may increase the risk of suicide in students. Suicide death, which is considered a major occupational hazard for doctors, is caused by long working hours, wrong lifestyle, and high academic workload (8). A previous systematic review has shown that among medical students poor mental health outcomes including burnout, depression, mental illness, and stress are more major risk factors for suicidal ideation (SI) and suicide attempt (SA) (9). Another study conducted on 4,840 participants from medical students has revealed that the prevalence of SA was 8.94%. Risk factors were the usage of tobacco, family history of suicide, homosexuality, female gender, low income, childhood or adult trauma, and suicidal thoughts within the last month (10). The combination of all these factors makes medical

students a good candidate for suicidal exposure. Al-Imam *et al.* have demonstrated that suicidal thoughts are very prevalent among Iraqi medical student. They showed predictive role of four factor in SI including severity of depression, personal history of mental illness, previous psychiatric consultation, and family history of suicidality (11). In sum, given the high rates of suicide, particularly among medical students, gaining insight into the fundamental causes of suicide can facilitate the development of effective preventive strategies. Therefore, this study was designed with the aim of determining the prevalence of SI and related risk factors among medical students of Islamic Azad University, Kerman branch.

MATERIAL AND METHODS

The current study was cross-sectional and descriptive-analytical research conducted to investigate the prevalence of SI among medical students of Islamic Azad University, Kerman branch in 2021-2022. The sample size was 101 respondents. The sampling technique was convenience sampling. The data was collected through online questionnaires using the Survey Monkey tool. The data collection tool in this study consisted of two parts: The first part includes collecting demographic information and basic variables such as age, gender, educational level, place of residence, marital status, religiosity level, history of psychiatric diseases in family members, smoking, and previous psychiatric consultation. The second part included the use of the standardized Beck Scale for Suicide Ideation (BSSI). This questionnaire is a 19-question self-assessment tool designed to measure a person's attitude, thoughts, and plans for suicide during the last week.



Statistical methods

SPSS version 16, GraphPad version 9, and MedCalc version 18 statistical software were used in the data analysis of this study. Major analyses and statistical tests were performed with SPSS software. For analytical analysis, chi-square test and independent t-test were used. To investigate the effect of variables on SI prevalence, the binary logistic regression model was used and the odds ratio and 95% confidence intervals were reported. Statistical significance was defined as a value of $P < 0.05$.

Characterization of study subject

In the study, 101 medical students of Azad University were investigated, and the average age was 22.90 ± 2.66 years and the frequency of women (61.4%) was more than men (38.6%). Single people (84.2%) were more than married people (15.8%). Most of the students were outside the dormitory (58.4%), not smoker (73.3%), moderately religious (47.5%). 35.6% of people had a history of previous psychiatric consultation and 30 people (29.7%) had a history of psychiatric illness in the family (Table 1).

Table 1

Characteristics of the study subject

Characteristics		Number or mean \pm SD	(%)
Age		22.90 \pm 2.66	
Gender	male	39	38.6
	female	62	61.4
religiosity group	Non- religious	21	20.8
	Moderately religious	48	47.5
	Highly religious	32	31.7
Marital status	single	85	84.2
	married	16	15.8
Type of Residence	Dormitory	42	41.6
	Out of Dormitory	59	58.4
smoking history	No	74	73.3
	yes	27	26.7
previous psychiatric consultation	No	65	64.4
	yes	36	35.6
History of psychiatric illness in the family	No	71	70.3
	yes	30	29.7
Grade	Basic Science	36	35.6
	Physiopathology	43	42.6
	Stager	11	10.9
	Internship	11	10.9



The level of SI and its prevalence

The prevalence of SI among study subjects was estimated at 39.6% with a 95% confidence interval between 29.9 and 49.3. Based on this analysis, 12.9% (13 people), 15.8% (16 people) and 10.9% (11 people) had low, high, and very high SI, respectively.

The frequency of SI according to study subject variables

The prevalence of SI was investigated according to age and gender, and the results of this analysis were summarized in Table 2. Based on these results, people with an age of less than 23 years had significantly more SI prevalence than those older than 23 years. Also, the score of SI was examined according to gender, and the results showed that there was no suicide in the average score according to gender. Although the prevalence of SI was higher in singles than in

married ones, the observed difference was not statistically significant. The results showed that the students living in the dormitory have slightly more ideation of suicide (although the observed difference was not statistically significant). The results of the prevalence of SI according to the level of education are also shown in Table 2 and the observed difference was not statistically significant. Furthermore, cigarette smokers and people who partially believed in religious issues have a higher prevalence of SI, although the observed difference was not statistically significant. The current results also showed that students who have a history of psychiatric consultation have a higher prevalence of SI and the difference was statistically significant. However, the prevalence of SI based on the history of psychiatric illness in the family was no statistically significant difference.

Table 2
the frequency of SI according to study subject variable

Characteristic		No suicidal thought		With suicidal thought		P value
		number	%	number	%	
age	≤23	36	53.7	31	46.3	<0.05
	≥23	25	73.5	9	26.5	
Gender	male	24	61.5	15	38.5	>0.05
	female	37	59.7	25	40.3	
Marital status	single	51	60	34	40	>0.05
	married	10	62.5	6	37.5	
religiosity group	Highly religious	12	57.1	9	42.9	>0.05
	Moderately religious	27	56.3	21	43.8	
	Non- religious	22	68.8	10	31.3	
Type of Residence	Dormitory	24	57.1	18	42.9	>0.05
	Out of Dormitory	37	62.7	22	37.3	
smoking history	No	47	63.5	27	36.5	>0.05
	yes	14	51.9	13	48.1	



previous psychiatric consultation	No	44	67.7	21	32.3	<0.05
	yes	17	47.2	19	52.8	
history of psychiatric illness in the family	No	43	60.6	28	39.4	>0.05
	yes	18	60	12	40	
Grade	Basic Science	22	61.1	14	38.9	>0.05
	Physiopathology	24	55.8	19	44.2	
	Stager	6	54.5	5	45.5	
	Internship	9	81.8	2	18.2	

The most important factors affecting the prevalence of suicide

The results of this analysis are summarized in Table 3 and two important and significant

variables, age and previous psychiatric consultation, are effective in the prevalence of suicide.

Table 3

Investigation of the most important factors related to the prevalence of suicide

Characteristic		Odds ratio	95% Confidence interval		P value
Age	≤23	3.76	1.10	12.87	<0.05
	>23	Ref			
Gender	male	Ref			>0.05
	female	1.12	0.34	3.67	
Marital status	single	1.82	0.43	7.62	>0.05
	married	Ref			
religiosity group	Highly religious	Ref			>0.05
	Moderately religious	1.68	0.46	6.10	
	Non- religious	0.96	0.21	4.59	
Type of Residence	Dormitory	Ref			>0.05
	Out of Dormitory	1	0.36	2.75	
Smoking history	No	Ref			>0.05
	yes	1.8	0.55	5.88	
previous psychiatric consultation	No	Ref			<0.05
	yes	3.24	1.19	8.83	
History of psychiatric illness in the family	No	1			>0.05
	yes	1.02	0.38	2.74	
Grade	Basic Science	1.79	0.24	13.03	>0.05
	Physiopathology	2.75	0.42	14.74	
	Stager	4.35	0.49	16.43	
	Internship	1			



DISCUSSION

Researchers have associated various factors with the prevalence of SI. In our study, among the variables investigated, age and previous history of mental disorders were important factors affecting the prevalence of SI. Analysis showed that the chances of people aged less than 23 years are significantly higher for the prevalence of suicide. Also, people who had a history of previous psychiatric consultation showed a higher chance of SI. The prevalence of any disease and disorder is strongly dependent on time and place, and for this reason, we may face a wide range of prevalence of SI at different times or places. In our study, the prevalence of SI was estimated about 39.6% which indicates the high prevalence of SI in our study population. The results of our study were in line with the study of Mirzaei et al. who estimated the prevalence of SI in medical students of Kurdistan University of Medical Sciences to be about 42.7%. They estimated the prevalence of suicide among all students to be 37.2% and showed that the prevalence of SI is higher in medical students (12). The study by Janghorbani et al. showed that 6.2% of medical students at Isfahan University of Medical Sciences had SI. it showed a much lower prevalence compared to our study. The reason for the difference can be related to the time of their study. Their study was conducted in 2013, when the social and economic conditions, as well as the level of hope for the future, were very different at that time compared to the current time (13). In a study conducted by Eskin et al. on more than 5000 students from twelve countries, about 29% of them had SI, and 7% had suicide attempts (14). In a previous study performed on 13,244 medical students from different countries, SI was reported from 1.8% to 53.6%. the major related risk factors were previous psychiatric

disorders, depression, financial difficulties, a history of drug use, and neglect by parents (15). The observed rates and their differences in different countries indicate the differences in culture, religion, attitudes, and the way of life in the societies of those countries.

One of the parameters involved in the prevalence of SI that has been discussed in many studies is the degree of religious level. However, in our study, this variable did not affect the prevalence of SI. Religious beliefs are an important point that should not be neglected. Lawrence *et al.* have indicated that while religious belief did not decrease the prevalence of SI, it may provide some protection against suicide attempts (16). Mirzaei *et al.* also reported SI in students who performed their religious duties to a lesser extent (12). Of course, in our study, the results were almost the opposite of these studies, but in general, there was no significant relationship which may be due to the small sample size in highly religious subgroups. Furthermore, the prevalence of SI in women was slightly higher than in men, but the observed difference was not statistically significant. Although our result indicated no significant difference between genders, Calvo *et al.* have shown that both ideation and history of committing suicide were more in female students. Spending more than eight hours a day alone, and sexual assault were factors that were strongly associated with SI (17). Smoking was another variable that its association with SI was evaluated in our study. However, it did not have a significant effect on SI which may be due to the homogeneity of the studied sample. Conversely, Hughes has shown smoking is correlated with suicide which may be related to the fact that smoking reduces serotonin and monoamine oxidase levels and smokers often



have a history of some experience that increases the risk of suicide (18).

In the present study, there was no significant relationship between marital status or the place of residence and the prevalence of SI. Conversely, it was shown that being married is related to a lower risk for SI. Married people with an age under 30 years have a lower risk for SI (19). The difference may be related to the lower number of married students recruited in this study. Although it was not significant it seems that the people who lived in the dormitory are more at risk of suicide. It was in agreement with a previous report (20).

Despite other variables, age and history of previous psychiatric consultation affect the prevalence of SI significantly. One of the important and influential variables in the prevalence of SI was the history of previous psychiatric consultation. Among the measured variables, this variable was considered the most important variable related to the prevalence of suicide. So, the chance of these people compared to others to have SI was about 3 times. In the majority of research, the connection of various psychiatric diseases with the high rate of student suicide is clearly seen. In this regard, in a systematic review, Sutar et al reported a sixteen-fold increase in suicide rate in patients with mental disorders such as somatic illness, anxiety, personality, and sleep disorders (21). In our study, although the age range of the students was not large and they were all in the same age group, however, it was seen in the analysis that in this same age group, younger people (less than 23 years old) have a higher chance of committing suicide. Also, other studies have emphasized the higher prevalence of suicide in younger people (22). In sum, as shown in the current report, people with a history of psychiatric illness had a higher chance of having SI. Therefore, in a future study, it is

recommended to investigate what factors like the type of psychiatric illness, the side effects of taking psychiatric drugs, or others exactly exacerbate a higher prevalence of SI in such people. It is also suggested Future study should be conducted in a larger sample size or in different sub-groups.

Ethical considerations

The current study was performed according to the guidelines of the Declaration of Helsinki for humans and approved by the Ethics Committee of Islamic Azad, Kerman branch (IR.IAU.KERMAN.REC.1401.054).

Transparency declaration

The authors declare no conflict of interest.

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