

# Prevalence of Suicidal Ideation and Planning in Senior Medical Students

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## ABSTRACT

**Objective:** Medical students have considerably higher prevalence rates of depression and suicidal thoughts as compared to their age-fellows from the general population. Only a limited number of studies have previously investigated the suicidal thinking/planning in Pakistani medical students. The aim of this study was to assess the prevalence rates of suicidal thoughts and planning in medical students studying at a private medical college in Lahore, Pakistan.

**Place and duration:** Fourth year and final year medical students at Azra Naheed Medical College, Lahore were invited to voluntarily take part in this study. The study was conducted from 15<sup>th</sup> of June to the 15<sup>th</sup> of July 2022.

**Study design:** Cross-sectional descriptive study

**Methodology:** Suicide behavior questionnaire revised (SBQ-R) was used as the study instrument. Data collection was anonymous and the study was approved by the local institutional review board. The study was approved by the Institutional review board of Azra Naheed Medical College, Lahore. Descriptive statistics were employed to report the findings and SPSS version 26 was used to store and analyze the data.

**Results:** A total of 248 medical students (51.5% female) participated in the study. The prevalence of suicidal thoughts/plans in the past was 36.3% and the prevalence of suicidal thoughts in the past year was 31%. More than 16% of students communicated their intent to commit suicide to someone else in the past and 7% of the students reported that it was likely, rather likely or very likely that they will attempt suicide in the future.

**Conclusions:** The prevalence of suicidal thoughts/ planning in medical students is worryingly high. Medical teachers should routinely assess their students for the presence of depressive symptoms/suicidal thoughts and offer support for students who screen positive for these.

**Key words:** Suicide, Medical students, Prevalence

## INTRODUCTION

Suicide is a serious public health concern as globally, more than 700,000 individuals take their own life each year. There are more deaths each year by suicide than by war, homicide, AIDS, malaria and breast cancer. More than one in every 100 deaths in 2019 was due to suicide<sup>1</sup>. The global suicide rate in 2019 was 9/100,000, with rates varying from less than 2 to 80/100,000. The global suicide rate for males (12.6/100,000) is 2.3 times higher than the suicide rates for females (5.4/100,000)<sup>1</sup>. The actual prevalence of suicide is likely to be considerable higher as there are many factors such as stigma related to suicide death and the tendency to classify suicide as accidental or natural death which favor under-documentation of suicide related deaths.

Suicidal ideation is more prevalent in medical students as compared to their age fellows in the community. A systematic review of seventeen studies from 13 different countries which comprised of 13,244 medical students reported a wide variation in suicide rates (from 1.8% to 53.6%). The risk factors identified in this systematic reviews associated with suicidal thoughts were depressive symptoms, past diagnosis of psychiatric disorder, financial problems, parental neglect and previous history of substance misuse<sup>2</sup>. Another systematic review of 37 studies reported that the prevalence of suicidal ideation in medical students ranged from 4.4 to 23.1%, and the prevalence of suicidal attempt ranged from 0.0 to 6.4%<sup>3</sup>. Rotenstein and colleagues conducted a systematic review and meta-analysis of 183 studies on the prevalence of depression in medical students from 43 different countries (n= 122, 356) and reported a prevalence rate of 27.2% for depression in medical students. They also conducted a meta-analysis of 24 studies on the prevalence of suicidal ideation in medical students (n=21,002) and found an overall prevalence of 11.1%. Only a minority of medical students (15.7%) who screened positive for depression sought psychiatric advice<sup>4</sup>.

More than three-fourths of suicides are reported in low and middle-income countries. Suicide is the fourth leading cause of death in young people (aged 15-29 years) after road traffic accidents, tuberculosis and interpersonal violence<sup>1</sup>. There are only

a limited number of studies that have investigated suicidal thoughts, planning and behavior in Pakistani medical students previously. The aim of the current study was to study the prevalence of suicidal thought and planning among medical students at a private medical college in Lahore, Pakistan.

## MATERIALS AND METHODS

In this cross-sectional descriptive study, fourth and final year MBBS students were invited to complete the suicide behavior questionnaire-revised (SBQ-R). The inclusion criterion for the study was all students currently studying in 4<sup>th</sup> and final year MBBS at Azra Naheed Medical College, Lahore. Students of all other MBBS classes were excluded from the current study as the objective was to study the prevalence of suicidal ideation and planning in senior medical students. A survey form was developed on Google form which contained a number of demographic questions as well as the items of the SBQ. The form was circulated through official WhatsApp groups of both the classes and a brief rationale for the study was provided to students. Three reminders were sent to students for completing the questionnaire. Data were collected from 15<sup>th</sup> of June to 15<sup>th</sup> of July 2022. The sample size for this study was calculated using the sample size calculator at [openepi.com](https://www.openepi.com).

<https://www.openepi.com/SampleSize/SSPropor.htm>. A total sample size of 196 was calculated using a confidence limit of 5%, design effect of 1.0 and an anticipated frequency of 15%

The suicide behavior questionnaire-revised (SBQ-R) is a validated and reliable measure of assessing suicidal thoughts and plans currently and in the future. It is also found to have good internal consistency<sup>5</sup>. The first question on the SBQ-R assess lifetime suicidal thoughts and attempts, the second question addresses the frequency of suicidal thoughts in the past year, the third questions is about the communication of suicidal thoughts or plans to others and the fourth question is about the future risk of suicide attempts.

Confidentiality of data was ensured during the whole process of data acquisition, analysis and reporting. Email addresses of

students were not collected and the researchers were not able to identify individual students from the information collected. Formal approval of the study was received from the institutional review board of Azra Naheed medical college, Lahore. Data was analyzed by the research team members and at no stage anyone from outside the research team was granted access to the data. Descriptive statistics were used to report the frequencies and percentages of students' individual responses. .

Frequencies, means and percentages were reported for the data gathered and descriptive statistics were employed to describe the results. SPSS version 26 was used for reporting, storing and analyzing the data.

**RESULTS**

A Total of 248 medical students participated in this study. There were 127 (51.2%) female students and 121 (48.8%) male students. A vast majority of the students (92.7%; n=230) were in the age range of 22-26, 15 students (6%) were 17 to 21 years old and only students (0.4%) was in the age range of 27-31. The number of fourth year medical students was 88 (35.5%) while the number of final year medical students was 156 (62.9%). Nearly half of the students (46.4%; n=115) identified themselves as belonging to a mixed rural and urban background, 43.1% (n= 107) belonged to predominantly urban background while 10.5% of the students belonged to rural background (n=26). (Table 1).

Table 1: Number of students with percentages for the demographic attributes of gender, age, study year and residential background

Demographic attribute	Number of students (percentages)		
	Gender	Males	Females
	121 (48.8%)	127 (51.2%)	
Age range	17-21	22-26	27-31
	15 (6%)	230 (92.7%)	1 (0.4%)
Study year	4 <sup>th</sup> year MBBS	Final year MBBS	
	88 (35.5%)	156 (62.9%)	
Residential background	Urban	Rural	Mixed
	107 (43.1%)	26 (10.5%)	115 (46.4%)

The SBQ-R consists of four questions that inquire about current and past suicidal thoughts as well as any future intent or plan. In response to the first question, which is about previous thoughts or attempts to harm oneself, 158 students (63.7%) of the students answered that they never thought about or attempted to harm themselves in the past, 43 students (17.3%) said it was just a brief passing thought, 21 students (8.5%) said they had a plan to harm themselves but did not carry it out, 18 students (7.3%) said they had a plan at least once and really wanted to die, 3 students (1.2%) said they had attempted to kill themselves in the past but did not want to die, and 5 students (2%) said they attempted to kill themselves in the past and really wanted to die.

The second question on SBQ-R was about the frequency of suicidal thoughts in the past year. To this question, 171 students (69%) said they have never had such thoughts, 37 students (14.9%) had these thoughts rarely (at one time), 22 (8.9%) had them sometimes (2 times), 6 (4.2%) had them often (3 or 4 times) and 12 (4.8%) had these thought very often (5 or more times). (Figure 1)

The third question on SBQ-R is about the communication of suicide planning to someone else. In response to this question, 206 students (83.7%) of the students said they had never told anyone about such plans, 21 (8.5%) students stated they communicated their plan to someone else at one time but did not want to die, 13 students (5.3%) stated they communicated their plan to someone else at one time and really wanted their plan to someone else more than once but did not want to die and 5 students (2%)

communicated their plans to others more than once and really wanted to die (figure 2).

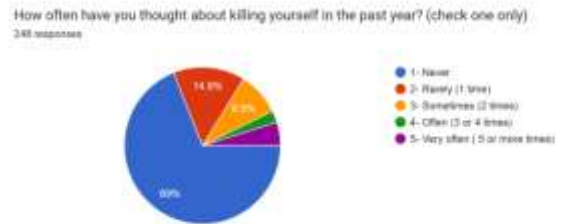


Fig. 1 : Students' responses to the second question on the SBQ-R

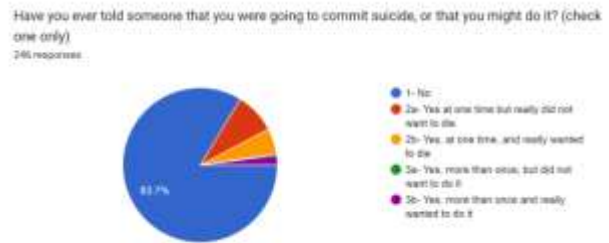


Figure 2: Students' responses to the third question on SBQ-R

The last question on SBQ-R is about the future risk of suicidal attempts. To this question, 185 (74.6%) said they will never attempt suicide, 21 students (8.5%) said there was no chance of this happening, 15 students (6%) said it was rather unlikely, 12 students (4.8%) said it was unlikely, 8 students (4.2%) stated it was likely, 1 student (0.4%) stated it was rather likely, and 6 students (2.4%) stated it was very likely (figure 3).

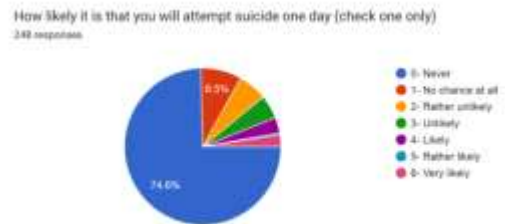


Figure 3: Students' responses to the fourth question on SBQ-R

**DISCUSSION**

In this study of fourth year and final year medical students the prevalence of suicidal thoughts/attempts in the past was 36.3% and the prevalence of suicidal thoughts in the past year was 31%. More than 16% of the students had previously communicated their intent to carry out a suicidal act to someone else while 7% of students said it was likely, rather likely or likely they will carry attempt suicide one day.

A previous study from Dow University of health sciences, Karachi reported findings very similar to our study. In this study the prevalence of suicidal ideation in the past year was 35% and the prevalence of past suicidal attempt was 4.9% <sup>6</sup>. A study from two medical colleges from Bangladesh reported that 17.6% of the students had planned or attempted suicide since their admission to the medical college <sup>7</sup>. A study of 4<sup>th</sup> year and final year Portuguese medical students reported considerably lower prevalence of suicidal behavior as compared to our study (3.9%) <sup>8</sup>. Witt and colleagues conducted a systematic review of 39 studies on the effectiveness of programs for the prevention of suicidal behavior and stress among medical students and noted that these relatively

brief programs (mean=4.9 days) were effective in reducing anxiety, depression and stress levels but the effect of suicidal ideation and behavior was undetermined<sup>9</sup>. Researchers from Brazil reported that 7.2% of the medical students had suicidal ideation and that suicidal ideation was associated with living alone, moderate to severe depression, obsessive-compulsive disorder and thoughts of abandoning the course<sup>10</sup>.

A Spanish study reported that the prevalence of depressive symptoms in medical students was 39.1% and the prevalence of recent suicidal ideation was 15.8%<sup>11</sup>. A study from Tunisia found that 7.9% of the medical students were at increased risk of suicide and 2.8% had attempted suicide one or more times in the past<sup>12</sup>. Pham and colleagues studied medical students in Vietnam and found a prevalence rate of 7.7% for suicidal ideation and of 15.2% for depression in their study participants. They noted that having financial difficulties and non-self-determined motivation were risk factors associated with suicidal ideations<sup>13</sup>.

The prevalence of reported suicidal ideations and planning in medical students reported in our study is high as compared to other studies conducted in medical students from other parts of the world. It is also a matter of significant concern that 7% of medical students state that they are likely or very likely to attempt suicide in the future. There is an urgent need to investigate the reasons and risk factors associated with suicidal thoughts and planning in medical students. This is essential not only for the future well-being of students, but also to ensure safety of patients and the community at large in general. It is important to screen medical students for the presence of depression and suicidal ideations and to take all measures possible to commence treatment for depression and other psychiatric disorders at an early stage so that prevention of any suicidal acts can be ensured.

## CONCLUSION

The current as well previous studies conducted in Pakistani medical students have reported a high prevalence of suicidal ideation and planning as compared to their age fellows in the general population. Awareness about symptoms of depression, strategies to manage stress and to cope with suicidal ideation should be provided to all medical students soon after entry to medical college. Further research is urgently needed to investigate the causes and management strategies for high prevalence of suicidal ideation among medical students.

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