

Frequency of and Potentiating Risk Factors for Suicidal Ideation Among Medical Students of Rawalpindi Medical University in the Year 2021

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Abstract:-

➤ *Background:*

According to the World Health Organization, more than 800,000 people die from suicide each year. Doctors have the highest rate of suicide among all the professionals. No detailed study investigating the frequency of suicidal ideation and its associated risk factors among medical students has been conducted in Pakistan. This is the first study of its kind to be conducted among medical students of Pakistan. The aims and objectives of the study were to find the frequency of suicidal ideation among the medical students of RMC in the year 2021, to find out the most common associated risk factors, and to suggest interventions and recommendations.

➤ *Methods:*

The study was carried out at the Old and New teaching blocks of the Rawalpindi Medical University. The screening questionnaire used for phase 1 was "Suicide Behaviors Questionnaire-Revised (SBQ-R)" with the cut-off score of > 7. For phase 2, a questionnaire containing twenty-eight questions detailing the potentiating risk factors based on internationally standardized questions was developed. Data analysis was done using SPSS version 22.

➤ *Results:*

The sample size was 862 using stratified sampling technique. The frequency of suicidal ideation among medical students of RMC in 2021 was 20.2%. This translates to roughly 1 in every 5 students. The mean frequency of male students was significantly higher than that of the females (24.7% vs 19.4%), with no significant difference between the mean frequencies associated with the boarding status. Third year students reported the highest percentage of suicidal ideation at 26%, with fourth year having the highest mean score of 11.59, denoting the maximum severity. The three most common potentiating factors across all academic years were communication problems, academic failures, and risky

activities. In third year, 60% students with suicidal ideation were unaware about the availability of the campus mental health resources.

➤ *Conclusion:*

A significant percentage of medical students in Rawalpindi Medical University report suicidal ideation, which should be recognized, acknowledged, and addressed at an early stage by the University administration and the mental health department.

Keywords:- Suicide, Suicidal Ideation, Potentiating Factors, Rawalpindi Medical University, Mental Health.

I. INTRODUCTION

According to the World Health Organization more than 800,000 people die from suicide each year which corresponds approximately to 1 death every forty seconds. It is considered to be the 3rd leading cause of death among those aged 15-44 years, and the second leading cause of death in the 10-24 years age group.¹ As compared to the general population, physicians and medical students are found to have an increased risk of committing suicide.² The incidence of suicide is rising in Pakistan,³ but authentic data of suicidal rates is still lacking as this area has not been given due importance due to various social, cultural, legal, and religious factors.

Various studies have been done on suicidal ideation and the factors responsible for it among medical students in developed countries but very few are available from developing countries. In USA, suicidal ideation was found to be higher in medical students than in the general population.⁴ According to another study from Portuguese, suicidal ideation was found to be approximately four times higher in medical students than in the general population.⁵ No detailed study investigating the frequency of suicidal ideation and its associated risk factors among medical students has been conducted in Pakistan. A pilot study in AKU was conducted, but it does not detail the possible associated risk factors.⁶

Accounts of suicidal deaths by medical students are frequently reported in Pakistan,⁷ however, not much formal research has been conducted on this topic. Our research study aims at bridging this gap in the research literature by finding the frequency of suicidal ideation among medical students of Rawalpindi Medical University, and the potentiating factors that lead to such ideation. The objective of the study is to find the common and the most frequently incurred potentiating factors, so that due and proper intervention can be carried out and the factors corrected as a practical application of this research study to reduce the frequency of suicidal ideation among the medical students of Rawalpindi Medical University.

This is the first study of its kind to be conducted among medical students of Pakistan.

II. PATIENTS AND METHODS

➤ *Our Study was Conducted in Two Phases:*

- *Phase 1: Screening:* to find out the frequency of suicidal ideation among the medical students of RMU
- *Phase 2: Factors:* to find out the possible correlation between different potentiating risk factors and suicidal ideation among the students reporting such ideation

The aims and objectives of the study were to find out the frequency of suicidal ideation among the medical students of RMU in the year 2021, to find out the most common associated risk factors, and to suggest interventions and recommendations. Some of the operational definitions are as follows:^{8,9}

- ✓ *Suicide:* an intentional, self-inflicted act that results in death.
- ✓ *Suicidal ideation:* Thinking about, considering, or planning for suicide.

➤ *Potentiating Risk Factor:*

A factor associated with a person contemplating suicide at one point in time over a long term e.g. unemployment or recent financial difficulties, divorced/separated/widowed, social isolation, prior traumatic life events, previous suicidal behavior, chronic mental illness, and chronic debilitating physical illness.

The study was conducted in the Old and New Teaching Blocks of Rawalpindi Medical University, the study population being only the medical students of RMU. It took 8 months for the study to be completed, from February through September of 2021. It was a cross-sectional study, and the sampling technique used was stratified sampling. The total sample size was 1500 students, however, only 862 students duly filled the questionnaires, so the effective sample size was 862. Only undergraduate medical (MBBS) students of RMU were included in the study, and house officers (foundation year students) and BSc students of RMU were excluded. Structured questionnaires were used, the data collection tool being closed-ended questions with pre-determined options (MCQs) for a quantitative analysis.

The questionnaire consisted of three portions. The first portion consisted of questions related to the socio-demographic profile. The second portion consisted of four questions related to suicidal ideation according to the Suicidal Behaviors Questionnaire-Revised (SBQ-R). The score can range from 3-18. For Adult General Population the cut off score is equal to or greater than 7. The third portion of the questionnaire (phase 2) consisted of questions related to the potentiating risk factors of suicidal ideation. For phase 2 we used another questionnaire in which we observed the frequencies of the potentiating risk factors for suicidal ideation. Phase 2 questionnaires were filled by only those students who were found to have suicidal ideation. There were 28 questions in this questionnaire. 11 questions had further sub parts.

Data entry and analysis were done using SPSS 22. Cross-tab between each of the background variables (age, gender, boarder/non-boarder status, year of study in MBBS) and the three most common potentiating risk factors was done to find out the relationship between each of the background variables and the common factors.

Since the nature of the research project was sensitive and the questions in the questionnaire were direct and personal, the purpose and procedure of the research project were explained to the participants in detail prior to the distribution of the questionnaires. A fully informed consent was taken from the participants, who could choose to withdraw from the process by not filling the questionnaire. Only relevant information was taken from the participants; their contact information was not taken. Whereas their names were required to fill out the consent form, this particular variable was not used anywhere in the study, and was detached from the questionnaires later. Whereas no compensation was provided to the participants, the study posed no risk of harm to them, whether in physical, social, or mental form. Complete confidentiality and anonymity of the participants were observed throughout the study. Only the five investigators had access to the collected data. The data were stored till the graduation of the final year class.

III. RESULTS

Amongst 862 students who duly filled our questionnaire for phase 1, there were 706 (81.9%) female students and 150 (17.4%) male students, 6 (0.7%) students did not mention their gender. There were 351 (40.7%) boarders and 493 (57.1%) non-boarders, 18 (2.2%) students did not mention their boarding status. Age range of students was from 17 to 29 with mean age of 20.9 years (S.D +1.7 years).

➤ *Phase 1:*

Based on the Suicidal Behaviors Questionnaire-Revised SBQ-R for our first phase, suicidal ideation was present in 174 students' i.e. 20.2%. This translates to roughly 1 in every 5 students.

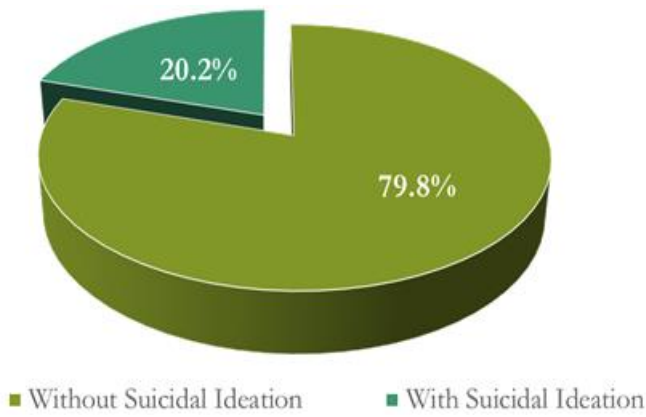


Fig 1 Frequency of Suicidal Ideation Among Medical Students of RMC, 2014

When the comparison of those with suicidal ideation was done based on gender status and boarding status, no statistically significant difference was observed with p-values of 0.14 and 0.10 respectively, the difference of proportion being displayed in figure 2.

Among those who had suicidal ideation there were 137 (78.7%) female students and 37 (21.3%) male students, and when compared for their residential status 81 (47.1%) boarders had suicidal ideation as compared to 91 (52.9%) non boarders.

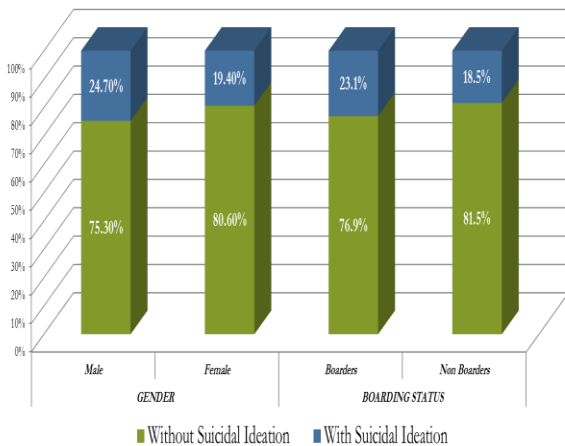


Fig 2 Gender and boarding status association

Interestingly, the comparison of the mean scores of suicidal ideation revealed highly statistically significant difference (p-value 0.001) with higher mean value of 5.97 (SD + 4.44) in male students and comparatively lower value of 4.90 (SD +3.18) among female students. However, the mean scores of suicidal ideation were 5.33(SD +3.64) and 4.92 (SD +3.28) for boarders and non-boarders respectively, with a non-statistically significant difference with p-value of 0.09.

When suicidal ideation was compared for each academic year, no statistically significant difference was observed with a p-value of 0.23, but proportion of those with suicidal ideation was observed to be highest comparatively amongst third year students as shown in table 1:

Table 1 Comparison of Suicidal Ideation in Students of RMU based on their Academic Year

Academic Year	Without Suicidal Ideation F (% Age)	With Suicidal Ideation F (% Age)	Total
1 st year	142 (78.9%)	38 (21.1%)	180 (100%)
2 nd year	117 (79.6%)	30 (20.4%)	147 (100%)
3 rd year	127 (74.3%)	44 (25.7%)	171 (100%)
4 th year	135 (83.3%)	27 (16.7%)	162 (100%)
5 th year	166 (82.6%)	35 (17.4%)	201 (100%)
Total Count	687 (79.8%)	174 (20.2%)	861 (100%)

The difference of mean scores of suicidal ideation of students of different academic years was also found to be statistically non-significant with a p-value of 0.90 on ANOVA.

➤ Phase 2:

Although there were 174 (20.2%) students with suicidal ideation from all academic classes, only 88 students filled the second phase questionnaire from four classes. No student of 2nd year filled the questionnaire.

The three most common potentiating risk factors were found to be communication problems with others 50 (58.8%), recent academic failure 48 (54.5%), and risky behavior (carrying a weapon/fighting/rash driving/rarely wearing seat belts) 40 (45.5%). When these most common factors were looked into separately for all academic years, information was missing for second year, but for the remaining four years, statistically significant association were observed with p-value of 0.034 for academic failure. However, no statistical association was observed for problems in communicating feelings with others and risky behavior with the status of academic year in these students with p-values of 0.715 and 0.392 respectively.

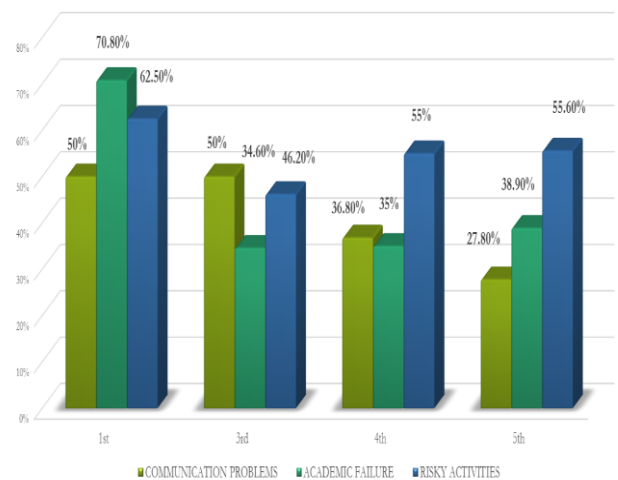


Fig 3 Distribution of the three Most Common Factors Among Four Academic Years

In 3rd year, the class with the highest frequency of suicidal ideation, the most common factor was the awareness about a recent (past 12 months) celebrity suicide; however, 96% were coping well with this information. 60% students with suicidal ideation were unaware about the availability of the campus mental health resources.

Comparison of the severity of suicidal ideation shows that it was the highest in 4th year, as revealed by the mean scores in the following figure:

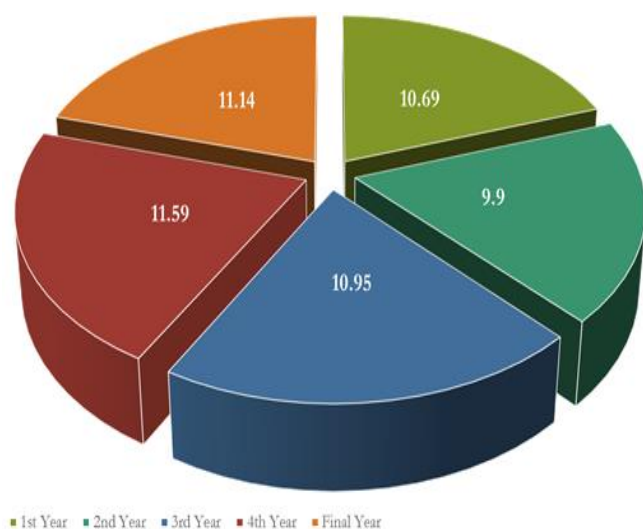


Fig 4 Academic Year Variation in Mean Scores

IV. DISCUSSION

This is the first study of its kind among the government medical colleges of Pakistan, although a similar study, considered to be the pilot study in Pakistan, has been conducted in a private medical college, the Aga Khan University (AKU). However, the aforementioned study focuses mainly on the frequency of suicidal ideation and does not try to investigate the possible associating risk factors that could potentiate such ideation. Our study explores in detail the possible risk factors that could be associated with such ideation. Given the novel nature of this study, it is bound by some constraints; however, there are many interesting findings of this research. The overall reported rate of suicidal ideation among medical students of Rawalpindi Medical University is 20.2%, which is lower than the rate in the study by the Aga Khan University (31.4%).⁶ Internationally, the rate is lower than that found among medical students of Delhi (53.6%) and of South Africa (32.3%). The comparison with AKU might be important in signifying the difference between stress levels in private and government medical colleges, and that with students of Delhi is important since both countries have similar cultures, and it is expected that some of the potentiating factors for suicidal ideation would overlap. The comparison with the students of South Africa signifies the fact that cultural factors alone do not determine the frequency of suicidal ideation, and points towards the universality of some associated factors for suicidal ideation among medical students across different cultures.

It is important to note here that the resulting figure of 20.2% does not merely represent the current suicidal ideation. Each of the four screening questions assesses a different value: Q1 taps into lifetime suicidal ideation, Q2 assesses the frequency of suicidal ideation over the past twelve months, Q3 assesses the threat of suicide attempt, and Q4 evaluates self-reported likelihood of suicidal behavior in the future. Therefore, this figure denotes not only the current, but also the past and the future (lifetime) suicidal ideation frequency.

A comparison of ideation frequency between genders reveals no significant gender difference; nevertheless, males reported a higher percentage than females, which is in contrast with the study at AKU.⁶ Similarly, no significant difference was observed as associated with the boarding status; however, boarders reported a higher percentage than non-boarders, again in contrast with the study at AKU.⁶

A comparison of the ideation among different academic years reveals that the 3rd year students had the highest frequency. It is also important to note that out of all the factors, the potentiating factor of academic failure had a statistically significant value when year-wise variation is considered. Therefore, it can be postulated that the third-year students faced most of the academic problems, as a result of which academic failure had such a profound effect on them. Another important angle here is that, although this study formally does not take into account the severity of suicidal ideation, the highest severity in terms of the mean scores was found among 4th year students. Therefore, whenever, and in case, an intervention is planned based on this study, it should be the 4th year students and not the 3rd year students who should be addressed first.

The three most common potentiating factors for suicidal ideation as revealed by the study were communication problems, academic failure, and risky behavior. Overall, across all the academic years, students had a problem with expressing their feelings and in communicating with each other. This was followed by academic failures and risky behavior, such as carrying a weapon, fighting, rash driving, or rarely wearing seat belts.

It is important to study the results of the third year separately. Individually, among the third-year students, the most frequent potentiating factor was the knowledge about the death of a celebrity in the past 12 months. It could be assumed that the students were adversely affected by this news or even mentally traumatized. However, since the majority of the students were coping well with news, this factor can be sidelined. The next most common factor for such ideation among the third-year students was the lack of awareness about the availability of and access to a mental health facility on campus. Despite such a facility right at hand, the students were unaware as to whom to approach for help or intervention.

As there is no other study on this topic for any other government medical college, it is not possible to compare the suicide ideation frequency of RMU with any other government medical college.

V. CONCLUSION

A significant percentage of medical students in Rawalpindi Medical University report suicidal ideation. The mean score of suicidal ideation is also significantly high. The college administration and campus mental health institute should make an effort to recognize this problem early on and carry out an active intervention to reduce this alarming figure, and create awareness among medical students across the University. At least the three most common potentiating factors should be addressed. It is recommended that a 3rd phase of this research should be undertaken, which is beyond the scope of this study, in which active intervention should be done according to the severity for those who have shown suicidal ideation in phase 2 of this study.

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