

## Gloomy faces behind the white coats: perceived stressors by medical students and suicidal behaviors

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**Objective:** To explore the predictive relationship of stressors with the suicidal ideation and behaviors in medical students.

**Methodology:** In this cross-sectional study, 400 medical students was selected by simple random sampling from different medical colleges of Lahore. A reliable and valid indigenous scale "Perceived Stress Scale for Medical Students (PSSMS) "was used for evaluation of stressors and "Suicide Behaviors Questionnaire Revised (SBQ-R) was administered for measurement of suicidal behaviors.

**Results:** We found that medical students' life is full of stressors. The regression Analysis showed that

PSSMS total score and its subscales of social stressors, mistrust, academic stressors and burnout showed very high level of significance ( $p < 0.001$ ) with the suicidal behavior among students in medical colleges of Lahore, Pakistan.

**Conclusion:** The total score of PSSMS significantly predicted about suicidal behaviors in medical students. A highly significant predictable relationship was evident in all sub scales of social stressors, mistrust, academic stressors and burnout. (Rawal Med J 202;45:951-954).

**Keywords:** Suicidal behaviors, stressors, medical students.

### INTRODUCTION

Stress is well known contributor to mental health disorders like anxiety, depression and ultimately suicide. The long term persistence of stress leads to mental health problems.<sup>1</sup> People especially in the medical profession are affected by strong and abundant stress factors as they face high level of stress than their same age counterparts. This suggests that medical education itself contribute to student's distress.<sup>2,3</sup> Undergraduate medical studies and training is associated with high expectations by parents and teachers, academic pressure, peer pressure, lack of leisure time, financial burden, social relationship issues and crucial role of media in affecting mental health of the students.<sup>4,5</sup>

Students perceived stress which negatively influences their lives and can lead towards more serious consequences like suicidal ideation and suicidal attempts.<sup>6</sup> Stress affects mental and physical health, sleep, academic functioning, clinical performance, learning abilities and social functioning. All these stressors can add to already existing depression and can starts a vicious cycle which, if not assessed and dealt with, may result in suicide.<sup>7</sup> Multiple studies revealed significantly high

level of stress in medical profession from multiple countries, spanning different continents.<sup>8-10</sup>

Student's social, emotional and physical as well as family problems also play a crucial role in their mental health.<sup>11,12</sup> Hence, factors responsible for stress in medical student not only comprises the academic burden but also interpersonal issues, inferiority feelings, inaccessibility of social, emotional and psychological support in their surroundings. Mistrust on faculty and administration, teacher's student discord and lack of appreciation also play crucial role.<sup>13</sup> Prevalence of suicidal ideation in medical students has been reported from 31.4% to 35.6 % Karachi, Pakistan,<sup>14,15</sup> and from the last few years prevalence has increased gaining attention of researchers to explore the stressors in lives of medical students. The current study addressed this issue that how stressors perceived by the medical students predicts the suicidal behavior in them.

### METHODOLOGY

This cross-sectional study was conducted from May to October 2019. The sample was selected through the simple random sample technique which is

probability sampling. It is a sampling technique where every individual in the population has an even chance and likelihood of being selected in the sample. The sample comprised of 400 participants (200 males & 200 females). From each year, 100 students (50 males & 50 females) were selected. First year students of MBBS were excluded in data collection because students were in initial phase of studies. Researcher aims to target that population who were in medical college more than a year. Sample size was based on confidence intervals. The participants were medical students of three private medical colleges from the city of Lahore.

Perceived Stressors in medical students were measured by the Perceived Stress Scale for Medical Students (PSSMS; Mansoor, 2019) through four subscales of *Social Stressors*, *Mistrust*, *Academic Stressors*, and *Burnout*. Scale was coded with Likert scale of five choices from "strongly disagree" to "strongly agree. Cronbach's alpha for PSSM items was 0.89. Cronbach alpha for Stressors subscale was 0.847, 0.773 for Mistrust and 0.740 for Burnout subscale. Convergent validity was supported through significant positive correlations with the Perceived Stress Scale (PSS) and Medical Students Stress Scale (MSSS). The details of these four subscales are given below:

- i. ***Social Stressors***. This sub scale comprises of 13 items which includes items relevant to interpersonal issues, social media issues, inferiority complex regarding social comparisons, and fear of negative evaluation from others.
- ii. ***Mistrust***. The 10 items in this subscale aims to assess mistrust relevant to social group, faculty, authorities of institute, and examination system.
- iii. ***Academic Stressors***. The 10 items describes the stressors relevant to curriculum, frequent examinations, academic competition, fear of low grades, attendance deficiency, lack of time for personal life, uncertainty about future job and scope.
- iv. ***Burnout***. The 7 items in this subscale evaluate tendencies of burnout in medical students, including lack of interest in their professional field, use of passive coping

strategies like drugs, uselessness of life, religion and medical profession.<sup>16</sup>

*Suicide Behavior Questionnaire Revised (SBQ-R)* was used to identify at-risk individuals and specific risk behaviors. It has only four items assessing the four different dimensions of suicide. Item 1 taps into lifetime suicide ideation or suicide attempt. Item 2 assesses the frequency of suicidal ideation over the past twelve months. Item 3 assesses the threat of suicide attempt. Item 4 evaluates self-reported likelihood of suicidal behavior in the future. Cutoff score for general adult population is >7. Cronbach's alpha for the SBQ-R items was 0.80. Construct validity was supported through significant positive correlations with the HADS-Anxiety and Depression subscales, and the GHQ-12.<sup>17</sup>

**Statistical Analysis:** SPSS version 19 was used for analysis. The descriptive statistics and regression analysis were used for analysis of predictive relationship between perceived stressors and suicidal behavior.  $p < 0.05$  was considered significant.

## RESULTS

The study included 400 students (Table 1). The total score of PSSMS significantly predicted about suicidal behaviors in medical students. Similarly highly significant predictable relationship was evident in all sub scales of social stressors, mistrust, academic stressors and burnout. In social stressors inferiority complex, low self-esteem leads to anxiety and depression which plays crucial role in suicide. In this sub-scale of "social stressors", role of social comparison on social media was also new addition (Table 2). Among the common negative effects of social media use are stress, anxiety, depression, addiction, cyber-bullying, hacking, scams, relationship problems, drug abuse and even suicide.

**Table 1. Distribution of Sample across gender and year of studies.**

Year MBBS	Male	Females
Second Year	50	50
Third Year	50	50
Fourth Year	50	50
Fifth Year	50	50
Total	200	200

**Table 2. Descriptive statistics of PSSMS and Revised SBQ-R.**

Scales	N	Range	LL	UL	Mean	S.E	S.D
PSSMS	400	123.0	53.00	176.0	122.3	1.04	21.68
Social-S	400	49.0	14.0	63.0	35.06	.473	9.47
Mistrust	400	49.0	.00	49.0	36.17	.33	6.63
Academic -S	400	39.0	10.0	49.0	33.89	.37	7.51
Burnout	400	24.0	7.0	31.0	17.23	.25	5.12
SBQ	400	19.00	1.00	20.0	5.75	.15	3.01

**Table 3. Summary of regression analyses with perceived stress scale total score as predictor of suicide behavior with revised SBQ-R.**

Factors	R	R <sup>2</sup>	Adjusted R <sup>2</sup>	F	p	Durbin-Watson
PSSMS Total	.314	.098	.096	43.350	.000	1.919
Social-S	.262	.068	.066	29.16	.000	1.858
Mistrust	.179	.032	.030	13.150	.000	1.860
Academic -S	.228	.052	.049	21.673	.000	1.912
Burnout	.227	.077	.074	32.996	.000	1.897

The total score of SSMS ( $p < 0.000$ ) and all sub-scales of Social Stressors ( $p < 0.000$ ), Mistrust ( $p < 0.000$ ), Academic Stressors ( $p < 0.000$ ) and Burnout ( $p < 0.000$ ) demonstrated statistically significant high predictive relationship with Revised SBQ-R (Table 3).

## DISCUSSION

The results of this cross-sectional study revealed that perceived stressors by the medical students significantly predicted about the suicidal ideation and behaviors in them. In Pakistan, recently high incidence of suicide were reported among medical students as 35.6% medical students thought about the suicide in past one year and 4.8% attempted in their life time.<sup>14</sup> Similar pattern was visible from reports from India, Austria and Turkey.<sup>18,19</sup>

Few researches in this area highlighted some factors like drug abuse, parental neglect and previous history of psychiatric disorders as contributing factors in suicidal ideation.<sup>15</sup> Lack of social and emotional support from friends, difficulty in making new friends and wishing to become popular among students are experienced by the medical students.<sup>20</sup> In another Indian study, Garg et al found faculty short comings, lack of feedback and valuable interaction with faculty was critical stressor among medical students of India.<sup>20</sup> Academic stressors including frequent examinations, tough study

routine, lack of time for personal, family and social life is one of the significant factors leading toward the suicide.<sup>21</sup>

As one of the research by Hill et al revealed that struggle in balancing academic as well as clinical work with their other life responsibilities was very stressful for the medical students of Florida, USA.<sup>21</sup> Lot of research literature supports that burnout is prevalent in medical students and one of the crucial factor leading toward suicidal behavior among medical students.<sup>22,23</sup>

## CONCLUSION

The total score of Perceived Stress Scale by medical students significantly predicted about suicidal behaviors in medical students. Similarly, highly significant predictable relationship was evident in all sub scales of social stressors, mistrust, academic stressors and burnout.

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