

Assessment Of Factors Influencing The Mental Health Of Different Professional Year Medical Students

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ABSTRACT

Background: Mental health is an integral and essential component of health. High level of stress in medical education may have a negative effect on cognitive as well as learning capabilities of students.

Aims and Objectives: 1.To assess various triggering factors for mental stress among medical students 2.To compare the influence of various factors on mental health of different year students of MBBS.

Materials and Methods: The study was conducted among 600 medical students of both male and female from North Bengal medical college . They were divided into four groups according to professional year. Completed questionnaires had been sent to them in google form. They responded through online. The Kessler 10 Psychological Distress instrument (k10) was used to determine level of stress. Logistic regression analysis done using SPSS Software considering 95% confidence interval and p value ≤ 0.05 as significant.

Result: Among the 600 medical students , 62.7% were males and 37.3% were females. Age group (17-22 years) constitute 75.13%of the sample and age group (23-27 years) constitute 24.87% of the sample.1st Professional: 14.51%, 2nd Professional: 54.92% , 3rd Professional Part 1: 12.95%, 3rd Professional Part 2: 17.62%. It was observed that following factors had significant impact on stress level: Socioeconomic status, history of mental health issues, living in campus, history of anxiety or depression, smoking habit, drinking habit.COVID 19 significantly affected the quality of life and taking care of personal wellness . Educational language and residential factors were also important to increase stress level among medical students- history of staying in hostel ,fluency in local language, language barrier were among them .Change in MBBS Curriculum. Recent curriculum changes, academic performances also had significant effect on mental health of medical students.

Conclusion: Socioeconomic and personal factor, educational, language and academic performances were important risk factors which significantly affected mental health of medical students.

Keywords: Mental health, stress, socioeconomic status, MBBS curriculum, language barrier.

INTRODUCTION

Mental health is an integral and essential component of health. The WHO constitution states: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." An important implication of this definition is that mental health is more than just the absence of mental disorders or disabilities.(who) Generally, medical students carry an increased burden of depression, anxiety, and mental stress compared to nonmedical peers of the same age⁽¹⁾. Stress levels between peers can differ due to variable factors such as debt burden,previous history of mental health issues, Smoking habit, Drinking habit, staying in hostel, Fluency in local language, Language barrier, Change in MBBS Curriculum, Academic performances^(2,3). Student mental health concerns can manifest in several forms. Among medical school graduates showed that psychological distress was associated with suboptimal quality of patient care, patient safety and professionalism⁽⁴⁾.The multitude of trials (i.e., intense academic rigor, financial debt, sleep deprivation, lack of control, continual exposure to sickness and death, and training mistreatment) has the potential to explain the higher prevalence of psychological

disorders within the medical student population compared to age-matched peers outside of the field ⁽⁵⁾. Given the existing mental health trends among medical students at baseline, it can be concluded that the COVID-19 pandemic has exacerbated the stress, anxiety, and depression associated with medical education ⁽⁵⁾. Even though medical students are at a disproportionate risk of mental health conditions and suicidal ideation, they receive minimal training in terms of how to access support or mental health resources ⁽⁶⁾. This is further complicated by the fact that medical students are unlikely to seek help for mental and/or emotional distress due to a variety of factors, including the perceived “invincible” role of the physician, concerns regarding being seen as unfit to practice, and fears of compromised career progression ⁽⁶⁾.

MATERIAL AND METHODS

Methodology Six hundred students of both male and female from North Bengal medical colleges were divided into 4 groups:

Group I: Phase I- MBBS students

Group II: Phase II- MBBS students

Group III: Phase III part-I MBBS students

Group IV: Phase III part-II MBBS students

Completed questionnaires had been sent to them in google form. The students were allowed to respond in their own time and privacy within a specified time period. The participation were entirely voluntary.

Instruments- We used the Kessler 10 Psychological Distress instrument (k10) developed by Kessler and colleagues ⁽⁷⁾. The questions were collected to obtain a total score and the scores were interpreted as follows: a score of less than 20 were considered not to represent stress of any level, score Of 20-24 represented mild stress, 25- 29 represented moderate stress and 30-35 represented severe stress. The questionnaire will also had additional questions related to “Academic achievements”, “Sources of stress”, “Any perceived medical illness” etc.

Analysis

Statistical analysis was done by using SPSS software.

Study Plan

Permission for the study was obtained from the IEC (Institutional Ethics Committee) of North Bengal Medical College and Hospital.

1. **Study Area & Setting:** The study has been done in the Department of Pharmacology, North Bengal Medical College, Darjeeling.
2. **Duration of Study:** 9 months

Study period: Duration of study is 9 months

Activity	Jan 23	Feb 23	March 23	April 23	May 23	June 23	July 23	Aug 23	Sept 23
Proposal submission									
Clearance and approval									
Planning and Preparatory work									
Data collection									
Data entry and analysis									
Preparation of final									

report and submission										
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3. Definition Of Population & Sample Size: Six hundred students of both sexes of all medical students of North Bengal Medical college of West Bengal, divided into 4 groups (200 students in each group) were invited to complete the k10 self-administered, anonymous questionnaire.

4. Inclusion Criteria: Students who falls under the following risk factors:

- a) Changes in individual social environment
- b) Individual Economical pressure
- c) Individual language barrier
- d) Impact of Curriculum Related Changes

5. Exclusion Criteria:

- a) Those Who Doesn't Falls Under the Above-Mentioned Risk Factors.
- b) Students Who Are On Antipsychotic and Antidepressant Medications As Per The Prescription.

6. Study Design:

- a) Study Type: Cross Sectional Analytical Study.

Risk Factors

- 1. Changes in Individual Social Environment
- 2. Individual Economical Pressure
- 3. Individual Language Barrier
- 4. Impact of Curriculum Related Changes

Statistics

Logistic regression analysis through SPSS Software.

RESULTS

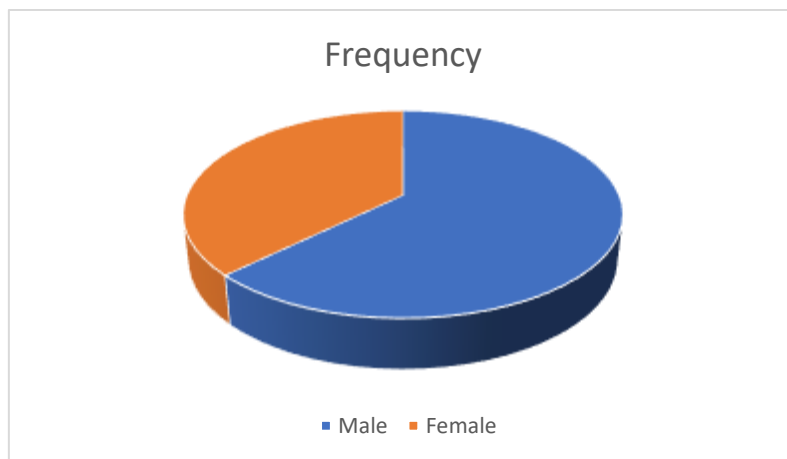


Diagram 1

The Male student: Feamble student ratio in this study is;

Male: 62.7%

Female: 37.3%

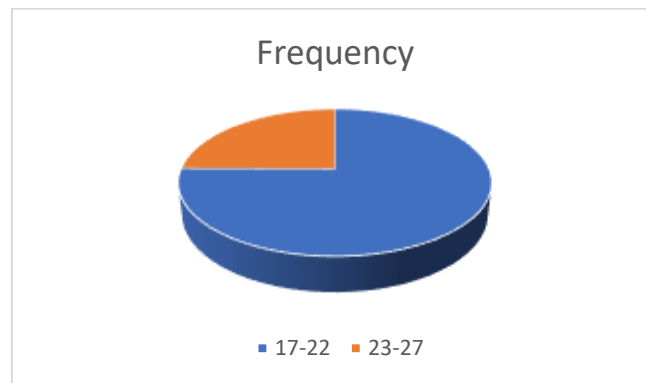


Diagram 2

The age group (17-22 years) constitute 75.13% of the sample and age group (23-27 years) constitute 24.87% of the sample.

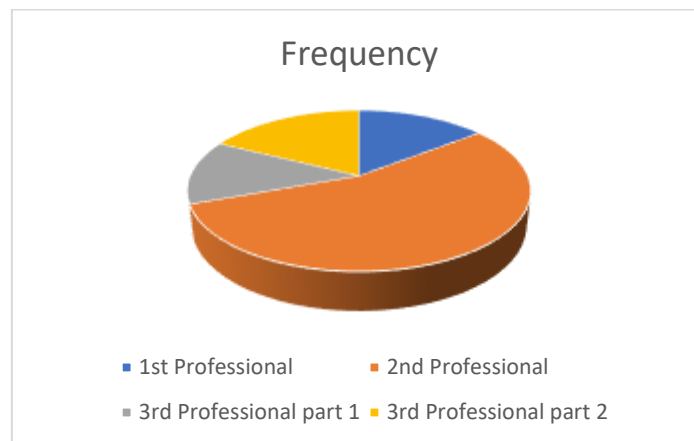


Diagram 3

The distribution of students within the study sample according to their study level:

1st Professional: 14.51%

2nd Professional: 54.92%

3rd Professional Part 1: 12.95%

3rd Professional Part 2: 17.62%

Table 1: Socioeconomic & Personal Factors

Factos	Coefficient	P Value
Socioeconomic status of MBBS students	0.13436	0.013270
Quality of relationships with other hostel boarders	0.05838	0.212804
Quality of foods available in hostel campus	0.05781	0.222811
History of mental health issues	0.12202	0.034379
Living in Campus	0.133434	0.02347
History of Anxiety or Depression	0.134578	0.002674
Smoking	0.2011	0.003364
Drinking alcohol	-0.14036	0.024699

The above table analysed the impact of socioeconomic factors upon stress level and it shows that following factors having significant impact on stress level:

1. Socioeconomic status
2. History of mental health issues
3. Living in campus
4. History of anxiety or depression
5. Smoking habit
6. Drinking alcohol habit

Table 2: Covid 19 Effect

Factors	Coefficient	P value
Quality of life	-0.08154	0.000385
Feeling of depression	-0.03538	0.209191
Feeling of distress/anxiety	-0.03673	0.218697
Enjoying leisurely activity	-0.045321	0.096542
Taking care of wellness	-0.06148	0.005785
Exercise time	0.395629	0.53855
Sleeping time	0.02085	0.397374
Loneliness	-0.05538	0.209187

Table 2 analyzed the effect of COVID 19 among students which shows that quality of life and taking care of personal wellness are significantly affected.

Table 3: Educational Language and Residential factors

Factors	coefficient	P value
Difficulty in studying due to language	0.05242	0.150105
History of staying in a hostel before MBBS	0.07653	0.016357
Fluency in the local language	-0.10896	0.003058
Proficiency in English language	0.06125	0.060198
Language barrier	0.13417	0.001267
Comfortable in staying in hostel	-0.03834	0.224924
Change in MBBS curriculum	0.03663	0.048147*
Online learning resources	0.04889	0.254439

Table 3 shows that following factors having a significant effect on stress level

1. History of staying in hostel
2. Fluency in local language
3. Language barrier
4. Change in MBBS Curriculum

Table 4: Curriculum & Academic Performances

Factors	coefficient	P value
Recent curriculum changes for time management	-0.08568	0.020751
Recent curriculum changes affecting mental stress levels	0.04421	0.297366
Recent curriculum changes affecting academic performance	0.05875	0.137008

Recent curriculum changes affecting social life	0.04490	0.432899
Academic performance on mental health	0.59437	0.000169
Academic performance is not up to expectations and stress	0.17596	0.011045
Comfortability in talking to teachers or professors about mental health	0.01451	0.70687
Comfortability in talking to classmates about mental health	-0.05331	0.151321

Table 4 shows the academic and curriculum changes impact on stress.

Factors significantly affecting stress are as follows:

1. Recent curriculum changes
1. Academic performances

DISCUSSION

The aim of this study was to assess various factors involved in mental stress of Medical students of various levels in North Bengal Medical College, Darjeeling. Medical education is very well known for its rigor and intensity. For MBBS students, the pressure to perform academically while managing a heavy curriculum can significantly impact their mental health. MBBS students face a multitude of stressors that can adversely affect their mental health ⁽⁸⁾. The socioeconomic status of MBBS students shows a significant correlation with stress. This implies that higher socioeconomic status is associated with comparatively less stress ⁽⁹⁾. The relatively low p-value indicates that this relationship is statistically significant, meaning that socioeconomic status likely plays a critical role in shaping the experiences and performance of MBBS students. The quality of relationships with other hostel boarders has affected but is not statistically significant. This indicates that, although good relationships might contribute positively, they do not have a strong or significant impact on stress.

A history of mental health issues shows a positive correlation with stress, with a coefficient of 0.12202 and a p-value of 0.034379. This suggests that students with a history of mental health problems might have a notable impact on stress, and this relationship is statistically significant ⁽⁵⁾. It highlights the importance of addressing mental health proactively among MBBS students.

Living on campus has a positive and significant correlation with stress, indicated by a coefficient of 0.133434 and a p-value of 0.02347. This implies that residing on campus is likely beneficial for students, potentially due to easier access to resources, support networks, and reduced commuting stress.

Smoking exhibits a strong positive correlation with stress, with the highest coefficient of 0.2011 among the factors considered and a p-value of 0.003364. This significant relationship suggests that smoking is a notable factor influencing stress, potentially highlighting a coping mechanism or stress-related behavior prevalent among some students ⁽¹⁰⁾.

Unlike the other factors, drinking alcohol shows a negative correlation with stress, with a coefficient of -0.14036 and a p-value of 0.024699. This significant negative relationship implies that alcohol consumption may adversely affect stress, suggesting that alcohol might be detrimental to the students' overall performance or well-being.

The academic pressure, workload, high expectations, and the demanding nature of medical studies. The curriculum changes have a positive mean effect size of 0.04421 on mental stress levels, with a p-value of 0.297366. This suggests a small increase in stress levels, although it is not statistically significant. The data implies that while the changes have had a marginal effect on stress, they have not substantially exacerbated

it.Changes in the curriculum have some effect on academic performance with a slight improvement in academic performance, though not statistically significant. It implies that the curriculum adjustments are beginning to bear fruit in terms of academic outcomes, but more robust changes may be needed for a significant impact.The relationship between academic performance and mental health is highlighted by a strong mean effect size of 0.59437, with a highly significant p-value of 0.000169. This suggests that better academic performance is strongly associated with improved mental health among MBBS students⁽³⁾. Conversely, when academic performance does not meet expectations, the mean effect size on stress is 0.17596 with a p-value of 0.011045, indicating a significant positive correlation. These findings underscore the critical need for academic support systems to alleviate stress and promote mental well-being.The Socioeconomic status of MBBS students is a important factor as for staying out a person needs money for everything including daily maintenance. The academic performance is a very important and common factor of stress in Medical students , their expectations even with own previous performances is not at par tomake them satisfied. This is also seen in previous studies also. The changes in curriculum is a big factor as in medical studies always students learn and take advices from their seniors in every hazel in studies, staying in hostel, in a very sense to become a complete DOCTOR. But with changes in curriculum makes students very much confused what to do and from where they can get help.

CONCLUSION

Several socioeconomic and personal factors significantly impact MBBS students outcomes. Notably, socioeconomic status, history of mental health issues, living on campus, history of anxiety or depression, smoking, and alcohol consumption are significant predictors. Addressing these factors through targeted interventions could improve the overall well-being and academic performance of MBBS students.The discussion reveals a complex interplay between curriculum changes, academic performance, and the mental health of MBBS students. While recent curriculum changes have had some impact on academic performance and mental stress levels, the effects are not uniformly significant. The strong correlation between academic performance and mental health underscores the importance of academic success in fostering well-being among medical students. Furthermore, the lack of comfort in discussing mental health issues indicates a need for creating a more supportive and open environment within medical institutions.

To enhance the overall well-being of MBBS students, it is crucial to continue refining the curriculum, providing robust academic support, and fostering a culture that encourages open dialogue about mental health.

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