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Original Article

Assessment of Mental Stressors & Associated Factors with Trend Perspective Among the Medical Students in a Government Medical College in Bangladesh

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ABSTRACT

Introduction*: Addressing mental health issues properly among the medical students is important as because the condition is associated with progression, poor academic performance and other related consequences. The related burden may be manifested in the form anxiety, stress & depression. These manifestations are due to the academic as well as personal pressures. The trend of mental stress inducing factors in the medical students may vary from country to country and from time to time.* ***Objective****: The study tries to find the observed mental stressors in line with trend perspective, a medical student face (such as familial and personal relationship conflict, financial constraints, coping incapability, intense competition, lack of due guidance from seniors & teachers, feeling of uncertainty about professional integrity, fear about professional establishment, professional insecurity and politicization of medical education & profession) and to quantify the development of depression, anxiety and stress in relation to those observed stress factors.* ***Methods & materials:*** *The study was done to find out depression, anxiety & stress status among the medical students using DASS 21 Bangla version questionnaire alongside a pre-structured yes/no*

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questionnaire involving the stress inducing factors (as mentioned) to elicit and measure the development of depression, anxiety and stress. ***Result****: The results are suggestive of having association with the selected stress inducing factors for development stress, anxiety and depression.* ***Conclusion****: These predictable factors are remediable by proper counselling and addressing the mental stressor issues through proper guidance and support. Researchers hope that the study would help to carry further researches on eliciting cause of depression, anxiety and stress among the medical students to find ways for improvement of medical education, prevention of mental stress and its consequences.*

Keywords*: DASS 21, Mental Stress and Stressors, Medical Students*

INTRODUCTION

World Health Organization described mental health as fundamental to human health. It also states that 1 in every 8 people in the world live with a mental disorder and such disorders may involve disturbances in thinking, emotional regulation, or behaviour[1]. Addressing mental health issues properly is important as because the condition is associated with progression, difficulties in therapeutic management and raising global burden[2,3]. The mental stressors may affect not only general populations but also specific professionals or members of specific disciplines due to presence of specific igniting factors within the discipline or profession. These mental health issues (e.g. depression, anxiety & stress) are created upon oneself due to coping incapability in face of different life situations. Various lifestyle and personal factors being implicated with the development of these mental health issues have been described through various studies[4,5].

Mental health problems such as, depression, anxiety & stress, consequent to mental stressors in medical students as well as medical professionals are more than expectation than general population think. The mental stressors with consequent mental health problems in undergraduate medical students are more confronted than their peers in non-medical disciplines[6,7,8,9].

A report published under American Medical Association reveals that stress, burnout, and depression are risk factors for medical students, with severe consequences[6,7]. It also states that medical students are three times more likely to die by suicide than the general public. Failure to tackle these hidden mental sufferings within medical students may be manifested in different forms, such as 'poor progress in study', 'withdrawal from study' or 'remain isolated during study period', 'disruptive' or 'being aggressive or disruptive in face of academic challenge', 'addiction to gaja (cannabis) or other addictive material', 'impulsive sexual behaviour' etc.[8]

The related burden due to the academic as well as personal pressures are the inciting factor for the development of anxiety, stress, depression and their consequences. Previous studies performed citing various stressors for med-

ical students, such as academic stress, issues with work-life balance, poor student guidance or support, financial constraints, uncertainty about the future and professional establishment, the need to be successful etc.[10,11] A review article on the issue described six major factors associated with student distress such as adjustment, ethical concerns, exposure to patient death and suffering, student mistreatment, personal life events, and educational debt[12].

The trend of mental stress inducing factors in the medical students may be shuffled with time or it may vary from country-context. So, to assess the overall stressors a medical student face, this study set few questions to elicit the academic as well as personal stressors, such as familial and personal relationship conflict, financial constraints, coping incapability etc. faced by medical students along with various anticipated and observed factors such as intense competition (academic life and after graduation), lack of due guidance from seniors & teachers, feeling of uncertainty about professional integrity, fear about professional establishment, professional insecurity and politicization of medical education and profession. The observed trend as mentioned intensified mental health challenges in context of current situation faced by medical students.

These mental health issues and consequent agony are almost hidden most of the time. The major barriers for medical students for seeking help with psychological illness issues are the stigma over psychological management, fear of academic deferment or impact on academic record, fear of non-confidentiality and existing academic stresses[10].

Ultimately the issues may pose a bad impact over their psychological status with behavioural outcome as well as academic performance. The impact of these mental issues may be expressed in terms of depressive illness, anxiety, mental stress, burnout and their consequences[13]. These may compel a student to invest more time in study but with less performance. Additionally, they may also contribute to the development of physical illness. But these predictable factors among the medical students is remediable by proper counselling and addressing the mental stressor issues through proper guidance and support.

It is necessary to assess the mental stressors and their trends in Bangladesh perspective. Keeping this in mind, this study was conducted to generate statistics regarding the depression, anxiety and stress status as well as sought for relation to the inciting factors in line with existing trends in Bangladesh. Researchers hope that this would help to carry further researches on cause of depression, anxiety and stress among the medical students to find ways for improvement of medical education, prevention of mental stress and cure.

METHODS & MATERIALS

The intent of the work is an initiative to study medical student wellness in regard to mental health, attitude to the selected mental stressors in pursuing their study and after graduation, coping capacities of different life situations, addressing the barriers in seeking care and pick opinions or suggestions regarding the stressors of different life situations and their remedy. We used two questionnaires comprising both quantitative (questionnaire – 1) and qualitative items (questionnaire – 2).

Questionnaire – 1 was the DASS 21 Bangla version questionnaire[14]. DASS 21 is a self-reporting questionnaire designed to measure the severity of depression, anxiety and mental stress symptoms. The questionnaire is available online in different languages. We used Bangla version as it is. The total score represents overall distress, with higher scores indicating more severe distress or a greater number of symptoms. The categories are mild/subclinical, moderate and severe. In the DASS score-sheet, each category have definite score range for each of the symptoms (e.g. stress, anxiety & depression). But for simplification and our limitation, we set score of 30, equal to or above (≥ 30) which we considered as critical for comparative analysis with the positive responses in questionnaire – 2.

The questionnaire – 2 was constructed with nine yes/no (positive/negative) response questions. In case the answer is 'yes' to a question, each question also included option to write 'one opinion' or 'suggestion' to change or improve the situation. Ideally, DASS score measures the three components (e.g., depression, anxiety and stress) separately. But due to limitation, the study conducted using cut-off score as 30, which is not ideal. The set cut-off point for positive responses of questionnaire – 2 is also not ideal.

The topic of the questions (questionnaire – 2) were supposed to act as risk factor for development of mental stress among the medical students. The questions were selected in accordance with the assumptive mental stressors when pursuing the course in context of observed situation in Bangladesh. The questions under investigation supposed to create mental stress were regarding familial and personal relationship conflict, financial constraints, coping incapability etc. faced by medical students along with various anticipated and observed factors such as intense competition (academic life and after graduation), lack of due guidance from seniors & teachers, feeling of uncertainty about professional integrity, fear about professional establishment & professional insecurity and politicization of medical education and profession.

This cross-sectional descriptive type of observational study was conducted among the medical students of 2nd, 3rd, 4th and 5th year MBBS students of SSKMC. The total number of students participated in the study were 172. First year and foreign students were excluded in the study. The period of study was

from 22nd February, 2024 to 30th Aug, 2024.

The study was conducted to generate statistics regarding the depression, anxiety and stress status as well as sought for relation to the inciting/risk factors in line with existing trends in Bangladesh that may act as mental stressors for medical students. Additionally, we used analytical epidemiology to yield 'odds ratio' (OR) & 'risk ratio/relative risk' (RR). OR is a measure of the strength of association between risk factor (number of positive responses ≥ 5 in questionnaire – 2) and outcome (DASS 21 score is ≥ 30). An odds ratio greater than 1 implies there are greater odds of the event happening in the exposed versus the non-exposed group. An odds ratio of less than 1 implies the odds of the event happening in the exposed group are less than in the non-exposed group. An odds ratio of exactly 1 means the odds of the event happening are the exact same in the exposed versus the non-exposed group[15]. RR is the estimation of disease risk (e.g., DASS scorer ≥ 30) associated with the exposure to risk factors (≥ 5 positive responders in the study). A relative risk of one implies there is no difference of the event if the exposure has or has not occurred. If the relative risk is greater than 1, then the event is more likely to occur if there was exposure. If the relative risk is less than 1, then the event is less likely to occur if there was exposure[16].

This study was approved by the Ethical Review Committee of SSKMC. Students were invited through respective class monitors at the Department of Public Health & Community Medicine to complete the questionnaires. Students were invited to participate in the study through the respective class monitors on their wish. Students were explained about the objective of the study and prior written consent taken accordingly. No physical or psychological risk was associated with the study. They were assured that all responses must remain confidential and not to be linked academically. At the time of fill-up, the questionnaire, light refreshment was arranged on behalf of the authors. Data were entered and analyzed by SPSS version 20.0. The study focuses on depression, anxiety and stress status of medical students using DASS Bengali version score-sheet (DASS 21 BV; questionnaire – 1) and at the same time elicited relationship with the positive responders to fixed stress inducing elementary questions or 'risk factors' (≥ 5) with those of high DASS scorers (≥ 30).

RESULTS

Among the 172 medical students, 79 (45.9%) were male and the remaining 93 (54.1%) were female. DASS score ≥ 30 was found among 44 (25.5%) students and < 30 was in 128 (74.4%) students. Students also delivered their own suggestion, opinion and observation (through questionnaire – 2) about the prevention of mental stressors, care and current trend outlined in **Table I**.

Table – I: Opinions and Suggestions Obtained through Questionnaire – 2

S/N	Description
1	More post to be created within the government sector
2	Self-skill should be increased for future competition
3	Can't cope with academic stress, so trying to be rigid to cope with
4	There must be safe working environment as well as apply good patient management & counselling
5	Student politics should strictly be prohibited
6	Familial pressure for female student should be minimized and familial cooperation is sought to continue the study as well as profession
7	Number of teachers and educational facilities should be increased
8	Clinical ward activities should be more skillful
9	There should be provision for solving financial incapability
10	Provision of time to be avail relax period
11	Campus should be free from jealousy and hostility
12	Excess number and worthless private medical colleges should be shut
13	Teachers and seniors should be more cordial, cooperative & friendly
14	Medical education to be structured more delightful

Exposure rate among the DASS Scorer (≥ 30) was 72.7% and among the scorers < 30 was 49.2% (**Table II**).

Table – II: Distribution of Students According to DASS Score and Exposure to Risk Factors

	DASS Score		Total *n*=172
	Yes (≥ 30)	No (< 30)	
*Exposed (≥ 5)	a (32)	b (63)	95
**Not exposed	c (12)	d (65)	77
Total	44	128	172
Exposure rate among the scorers ≥ 30 = a/ (a + c) = 32/44 = 72.7%			
Exposure rate among the scorers < 30 = b/ (b + d) = 63/128 = 49.2%			
Frequency rate of DASS score ≥ 30 among exposed (≥ 5 positive responders) = a / (a + b) = 33.6%			
Frequency rate of DASS score ≥ 30 among not exposed (< 5 positive responders) = c / (c + d) = 15.5%			

*Positive response in questionnaire – 2 (≥ 5); **Positive response in questionnaire – 2 (< 5)

Frequency rate of DASS score ≥ 30 among those with 'yes' or positive response ≥ 5 was higher (33.6%) than among positive responders < 5 (15.5%) (**Table II**). It is evident from the Table I that the frequency rate of scorer ≥ 30

was higher among the students exposed to risk factors ≥ 5 (33.6%) than among exposed to < 5 risk factors (15.5%). Calculation of odds ratio (**Table III**) reveals that students exposed to the risk situations (risk factors) of 5 ≥ have a risk of having DASS score ≥ 30, are 2.75 times that of scorers < 30. Similarly, we derived relative risk/risk ratio 2.16 (**Table III**), which implies that the DASS score ≥ 30 are more likely to occur in those students due to exposure to risk factors (≥ 5 positive responders). The important proposals or opinions or suggestions were, more post creation within the government sector, Self skill improvement for cope with future competition, demand for safe working environment, prohibition of student politics, sought for familial and peer cooperation, provision for solving financial incapability, sufficient relaxation period, free from jealousy and hostility all through, shutting of undue and worthless private medical colleges shut, cordial behavior from teachers and seniors and making delightful of medical education.

Table III: Calculation of Odds Ratio and Relative Risk

	DASS Scorer (≥ 30)	
	Yes	**No**
*Exposed (≥ 5)	a (32)	b (63)
**Not exposed	c (12)	d (65)
Odds ratio = ad/bc = 2.75		
Relative Risk = {Scorers of ≥ 30 among ≥ 5 positive responders}/ {Scorers of < 30 among < 5 positive responders} = {a / (a + b)} / {c / (c + d)} = 2.16		

DISCUSSION

There was no article found online regarding the elicitation of relationship using DASS 21 Bangla questionnaire with the mental stress provoking current trend questions among medical students of Bangladesh. Probably this is the first study in Bangladesh to determine depression, anxiety & stress score using DASS 21 questionnaire and simultaneous use of qualitative questionnaire. From our context and perspective, we set tentatively score of 30 as being cut-off point (not ideal at all) for development of alert of the teachers, administrators, guardians, policy-makers and concerned personnel to take steps for prevention of further deterioration of the situation. Out of 172 medical students, 79 (45.9%) were male and the remaining 93 (54.1%) were female. This difference in the number supposed to be non-significant as the students were invited on their will. Exposure rate among the DASS Scorer (≥ 30) was 72.7% and among the scorers < 30 was 49.2%. The frequency rate of scorer ≥ 30 was higher among the students exposed to risk factor ≥ 5 than those exposed to risk factor < 5. Both these findings deserve evidence that the studied risk factors may act as mental stressors. Odds ratio are suggestive of risk to students exposed to the risk factors more for development of

high DASS score with its consequences than those with less exposed. Calculation of relative risk/risk ratio also reveals risk of association with more exposure to risk factors coincides with development of high DASS score. Alongside, the suggestions, opinions and observations mentioned by the students' points clue for solving the mental stressor factors to lead a happy and delightful academic and professional life for the medical incumbents.

Conclusions

The study results revealed that a significant number (33.6%) of medical students within a government medical college are probably fighting with mental stress and its consequences. Suffering from depression, anxiety and stress are not uncommon among the medical students which demands immediate attention of the authority as well as all concerned. The findings of the study warrant a need for proper counseling and support services for vulnerable students. The suggestions and opinions made by students must be addressed with due attention.

Limitations

The study involved only a single medical college, so the report may not conclusive. For the reason, simultaneous involvement of most of the government medical colleges is necessary to reach conclusion about the trend of risk for mental stress. DASS 21 scoring was not quantified properly due to same limitation and funding problem as well as observation difficulty. Odds ratio and relative risk are actually calculated in case of case-control and cohort studies respectively. But here it is shown as to highlight and draw attention about the issue.

Data Availability Statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication.

Author Contributions

M A Sattar: conceptualization, formal analysis, investigation, project administration, visualization, and writing. AK: conceptualization, investigation & methodology. AKS: sorting of data. SB: calculation and tabular arrangement. MR: generation of statistics. SCB and GMM: supervision, analysis & discussion. All authors contributed to the article and approved the submitted version.

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Conflict of Interest

The authors declare no conflict of interest.

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