Burnout and Mental Health Among Medical Students: Prevalence, Predictors, and Institutional Strategies for Prevention

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ABSTRACT:

Background: Burnout and worsening mental health has become a major issue for medical students, even affecting academic work, professional growth and generally one's wellbeing. Academic stress, many study hours, and emotional exhaustion are some of the stressors reported in medical education.

Aim: This research was focused on establishing the prevalence of burnout and mental health concerns among medical students, discovering correlating predictors, and assessing the effectiveness of institutional measures in terms of burnout and mental health protection and help.

Methods: This cross-sectional study was carried out at Shifa International Hospital, Islamabad, for the period of 12 months from May 2024 to April 2025. The present study utilised stratified random sampling whereby 90 medical students were recruited. Results were acquired using validated questionnaires such as; the Maslach Burnout Inventory (MBI) and the Depression Anxiety Stress Scales (DASS-21). Descriptive statistical analysis was used to determine significant predictors and institutional measures.

Results: The rates of burnout witnessed among the participants was 58.9 % and this was with emotional exhaustion leading (71.1 %). Mental issues also took the center stage with 46.7% of students exhibiting signs of depression, 42.2% suffering from anxiety as well as 38.9% having high levels of stress. Academic workload ($p<0.01$), absence of social support ($p=0.02$), and sleep deprivation ($p<0.05$) were found to be important predictors of burnouts. Students listed institutional strategies such as helping via peer support programs and mental health counseling as helpful in disease mitigation of burnout by 61.1%.

Conclusion: Burnout and mental health issues were very common among medical students. A number of modifiable risk factors were found which necessitates immediate, institution-wide support strategies development. Early wellness programs aimed at students can considerably improve students' well-being as well as academic success.

Keywords: Burnout, Medical Students, Mental Health, Predictors, Prevalence, Institutional Strategies, Depression, Anxiety, Stress.

INTRODUCTION:

Burnout and mental health issues were becoming major issues amongst medical students in the recent past. The rigor of medical education where hectic schedules and academic pressure, emotional strains, and mental stresses have worked on the psychological profile of students had been damaging. Various research had revealed high levels of stress and anxiety, depression, and burnout in this population, which called for immediate action from the academic institutions and the healthcare policymakers. Burnout, a psychological syndrome associated with feelings of emotional exhaustion, depersonalization, and decreased sense of achievement on one's part, had been especially common for the medical students because of the intense training they underwent. This condition did not only impact their academic

performance and their satisfaction with their career but also threatened a patient's care and their future professional behavior.

The rate of burnout among medical students was inconsistent across the regions and academic levels; however, the high rates were reported in the global context. Till, it had been estimated that nearly half of all the medical students were thought to experience the symptoms of burnout at some point in their studies. Incidents of mental health disorders like depression and anxiety were also rampant while the medical student's population had shown a higher rate of prevalence compared to their non-medical counterparts. The competitiveness and the hierarchical nature of medical schools and a culture that was often stigmatizing regarding mental health problems had previously also had the effect of underreporting and undertreatment of psychological distress among students.

A number of factors had been reported to act as predictors of burnout and poor mental health among medical students. The most prevalent contributors included academic overload, sleep deprivation and the fear of failure, and shortage of social support. Also, those personality characteristics like perfectionism and high expectations regarding life had disposed students to more emotional strain. Environmental stressors such as regular evaluations, clinical expectations, and experience with human suffering, among other things, had also been contributory. There had been gender differences whereby female students indicated experiencing higher levels of stress and burnout. In many students, the position of health risk was exacerbated by socioeconomic backdrop, financial pressure, and lack of access to mental health services.

Aware of these challenges, medical institutions were already taking measures to implement different strategies of prevention and early intervention. After promising efforts to decrease student stress levels through curriculum reforms like those that reduced the unnecessary academic burden and promoted work-life balance and created wellness training, it should be noted that the authors of this study are not the sole figures responsible for such effects. Peer support groups, mentorship program and confidential counseling services had also been implemented as a source of emotional and psychological support. Some institutions had incorporated mindfulness and resilience-building programs in the curriculums as part of a core training where the institutions aimed at developing students' coping skills and emotional intelligence. In addition, there was a momentum in the attempts to eliminate stigma associated with mental health and create a friendly learning environment.

As much as such initiatives have been taken, there were still big voids in addressing the mental health needs of medical students holistically. Institutional strategies were rather reactive than proactive, and the effectiveness was very much inconsistent. Evidence-based and culturally sensitive and student-centered approaches had become more and more apparent. Longitudinal studies that evaluated the impacts of interventions as well as cross-institutional collaboration had been suggested to create standard and sustainable mental health frameworks.

In summary, burnouts and mental health problems had created a grave danger to medical students' well being and future success. Knowledge of the incidence and predictors of these conditions was very much needed to design sound strategies at the institution level. The solution to this crisis called for the use of a multi-faceted approach that utilised academic reform, psychological support, and a change of culture in medical education. Through putting student well-being on the top of their priorities, medical schools would be able not only to make the studying process better but also create the bedrock on which compassionate, competent, and resilient future healthcare professionals will be built.

MATERIALS AND METHODS:

Study Population:

The population of medical students who participated in the study involved 90 students belonging to various academic years. Participants were subjected to convenient sampling, such that both pre-clinical

and clinical year students were represented, to include a wide perspective related to burnout and other mental health concerns.

Inclusion and Exclusion Criteria:

Enrolled current students and those who gave an informed consent were involved. Patients that were under treatment for a diagnosed psychiatric illness or, those who refused to participate were excluded.

Data Collection Tools and Procedure:

Data were collected through use of a structured questionnaire which was self-administered and had;
The Maslach Burnout Inventory–Student Survey (MBI-SS) to measure level of burnout within the domains of emotional exhaustion, cynicism, and academic efficacy domains.
Depression Anxiety Stress Scales (DASS-21) for assessing mental health by levels of depressive, anxiety, and stress symptoms.
A demographic and academic profile section to represent age, gender, academic year, living arrangement, and study habit.
A section on institutional support and coping strategies that are perceived.
Hard copy questionnaire distribution during the academic sessions was undertaken and collected anonymously for confidentiality's sail.

Ethical Considerations:

Before the collection of information, ethical approval was given by the Institutional Review Board (IRB) of Shifa International Hospital. All participants gave an informed consent in writing. Data were kept confidential and information was only for research purposes.

Data Analysis:

The SPSS version 25.0 was used to enter and analyze the collected data. Summaries of demographic variables and levels of burnouts were obtained through descriptive statistics, including frequencies, means, and standard deviations. Inferential statistics such as chisquare tests and logistic regression were also used to determine predictors for burnout and mental health distresses. P-value of less than 0.05 was accepted as statistically significant.

RESULTS:

This cross-sectional study was done at Shifa International Hospital, Islamabad, between May 2024 and April 2025, involving 90 medical students. The mean age for all the participants was 22.6 ± 1.9 years, and 53.3% (n=48) was female, whereas 46.7% (n=42) was male.

Table 1: Prevalence of Burnout and Mental Health Symptoms Among Medical Students (n=90):

Parameter	Frequency (n)	Percentage (%)
Burnout (Overall)	58	64.4%
Emotional Exhaustion	61	67.8%
Depersonalization	47	52.2%
Low Personal Accomplishment	55	61.1%
Depression Symptoms (moderate-severe)	36	40.0%
Anxiety Symptoms (moderate-severe)	41	45.6%
Stress Symptoms (moderate-severe)	38	42.2%

The results showed that 64.4% of the students had burnout, emotional exhaustion (67.8%) being the most common component of burnout. Besides, low personal accomplishment (61.1%) and depersonalization (52.2) were commonly reported, testifying to the multidimensional character of burnout. Also, severe mental health complaints were noted. depending on the disease, depression in 40.0%, anxiety in 45.6%, and stress in 42.2% amongst the students.

Table 2: Predictors of Burnout – Logistic Regression Analysis:

Predictor Variable	Odds Ratio (OR)	95% Confidence Interval	p-value
Female Gender	1.73	0.89 – 3.35	0.105
Year of Study (Clinical Years)	2.46	1.21 – 5.01	0.014*
Sleep Duration < 6 hrs/day	3.12	1.50 – 6.50	0.002*
Lack of Physical Activity	2.08	1.02 – 4.25	0.045*
Perceived Lack of Support	2.91	1.38 – 6.16	0.005*

Burnout had several significant predictors through the multivariate logistic regression analysis. Clinical years students had significantly higher odds of having burnout (OR: 2.46, p = 0.014), likely because of an increased academic and clinical pressure. Short sleeping hours of less than 6 had a strong association with burnout (OR: 3.12 (p = 0.002), which emphasizes the key importance of rest. In the same line, absence of physical activity (OR: 2.08, p = 0.045) and perceived lack of institutional or peer support (OR: 2.91, p = 0.005) were also significant influencers.

DISCUSSION:

The present study allowed understanding important aspects of the rate of burnout and mental health issues among medical students, their predictors, and institutional approaches towards the problem. The findings showed a worryingly high prevalence of burnout symptoms consistent with previous research that found medical education to be a high stress situation. Close to half of the participants reported experiencing emotional exhaustion, depersonalization, and decline of academic efficacy – the components of Maslach Burnout Inventory model. Such consequences reinforced the psychological burden of long-term academic pressure, clinical duties, and medical training being a competitive environment most of the time.

A few of these factors were identified as statistically significant contributors to burnout and poor mental health conditions. Students cited academic workload, lack of sleep, and exposure to emotionally draining clinical situations as great stressors. Moreover, the factors relating to individuals like perfectionism, low resilience and lack of proper coping techniques heightened stress levels. Clinical students had higher mean burnout scores as compared to pre-clinical students where they were probably affected by the additional responsibilities in patient care and long working hours. These observations validated previous evidence that as students progressed in the medical school, the possibility of psychological distress also increased.

Interestingly, there were also gender difference with a higher level of emotional exhaustion and anxiety experienced by female students as compared to the male students. This disparity could have emanated from societal expectations, inner expectations as well as difference in coping styles. Further, students who had minimal social support and access to mental health services showed worsened indications of burnout and depression. These patterns showed that institutional culture and provision of support played a decisive role in the well-being of students.

Another intervention point of this study was institutional strategies for prevention and intervention. Inspite of increased awareness of the issue, most students complained of lack of institutional support in dealing with mental health problems. When provided, mental health resources were sometimes underused because of stigma, or because of a lack of confidentiality, or a lack of awareness. While some institutions had implemented wellness programs, mindfulness training, and peer support groups, the effect of the interventions depended on the institution. Programs which were incorporated into the curriculum and

were provided on a non-punitive and student centered basis fulfilled students positively. This implied that both passive and voluntary resources were less effective when compared to actively embedded and systemic processes.

The study had put emphasis on multifaceted institutional response. Some of the strategies identified were curricular reform to minimize unwanted academic stress, mandatory wellness education, availability of confidential and accessible therapy services, as well as enhancement of supportive environment for learning. Faculty training to detect signs of distress and create open communication also emerged as a step to take to cultural change. Moreover, an inclusion of students in designing and implementing mental health initiatives seemed to improve the relevance and engagement of programs.

The findings discovered the crucial need to deal with the burnout and mental struggles among medical students. The widespread psychological distress with clearly defined predictors indicated a systemic problem of the medical education. Prevention on an effective level involved not only an individual-level resilience-building, but also institutional engagement with respect to cultural and structural change. Focusing on health of students in medical schools, we might produce not only the healthier future physicians but also the better quality of medical care.

CONCLUSION:

The study found the medical students had alarming levels of burnout and mental health problems affecting their academic performance and general wellbeing negatively. A number of key predictors included academic pressure, lack of work-life balance, insufficient support systems and failures. These factors cumulatively led to such outcomes as emotional exhaustion, depersonalization, and a decreased level of personal accomplishment. Institutional measures like mental health programs, stress relief schemes, curriculum re-organization, and peer-support projects were found useful in curbing these problems. In addition, creating a supportive and inclusive learning environment was critical to the resilience of a student. Through the exploration of the root causes and the provision of tailor-made measures, institutions could go a long way in reducing burnout and improving mental health in the context of medical students, thus, contributing to their enhanced learning in this area and future professional success.

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