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Factors contributing to stress and anxiety in undergraduate medical students.

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ABSTRACT... Objectives: To determine the contextual factors responsible for stress and anxiety in undergraduate medical students. **Study Design:** Qualitative Study. **Setting:** Islamic International Medical College, Al Mizan Campus, Riphah University, Rawalpindi. **Period:** 04th April 2019 to 03rd October 2019. **Material & Methods:** This qualitative exploratory study was conducted at Islamic International Medical College Rawalpindi from April to October 2019 with the help of semi structured interviews each lasting for about thirty minutes conducted from final year medical students and the data was analyzed to establish the factors responsible for stress in medical students. **Results:** The study revealed academic and non academic reasons for stress in medical students' time of graduation. Fear of examinations came at the top of the list of stress causing factors followed by hectic time tables, challenging clinical environment, lack of feedback by clinicians, lack of structured clinical training, non conducive learning environment, time management issues, peer pressure, pressure from parents to achieve academic excellence, less number of leisure hours, lack of sleep and finally the issues of attendance. **Conclusion:** Majority of final year students experienced stress in their medical life which was due to social factors, academics reasons and non academic issues.

Key words: Contextual, Medical Students, Stress, Under Graduate.

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INTRODUCTION

Stress is the body's reaction to any change that requires an adjustment or response.¹ The body reacts to these changes with physical, mental and emotional responses. A person develops stress in his life due to multiple causes which may be environmental, occupational, and personal or socio cultural.² Stress is mostly negative and has deteriorating effects on a person's health and well being. It hampers an individual's productivity and causes hindrance in his or her optimal performance and being one of the emerging modern epidemics, everyone becomes a part of it at some stage in his or her life. It is associated with many harmful effects which include agitation, tension and compromised health.³

Medical education is also perceived as a stressful event. The continued high level of stress may have a negative impact on cognition and learning abilities of students in a medical college.

Therefore medical students are no exception to this phenomenon in experiencing stress in their academic life at one stage or another.⁴ Medical studies are demanding and the students are expected to be extremely hardworking and energetic so that they can deal with different challenging situations in their academic life. Of the students in institutes of higher education, medical students appear to have more emotional challenges, physical and psychosocial hazards, and mood disorders as they keep thinking of their future progress and professional goals.⁵ The excessive amount of stress in medical training may lead to negative consequences such as diminished attention and concentration, increased incidence of errors, negligence, absenteeism, self-medication and cheating during examinations. Medical education has been reported throughout the world as one of the most stressful academic curricula, which negatively affects the physical and mental health of medical students, especially

in final year the burden of studies and clinical clerkships increases and students often feel anxious. The stress keeps on accumulating and students keep getting affected by anxiety.⁶

Stress-associated mental health impairment in medical students has been an important issue in recent international research. Psychological distress can be viewed as body's reaction to particular demands in general or specific situations. Stress arises when individuals perceive that they cannot adequately cope with the demanding situations and circumstances in their workplace and academic environment. The published literature provide the evidence that medical students experience increased symptoms of psychological distress, depression, anxiety and professional burnout as compared to the average population in the same age bracket of students.⁷

The recent studies in the same field have established the fact that the continued exposure to stressful conditions lead to emotional, physical and mental disturbance of the students. Persistent stress leads to low self-esteem of students, difficulty in handling different situation, sleep disorders, decreased attention span and abnormal appetite which eventually effects the academic achievement and personal growth of students. Stress in medical life may affect a physician's performance in the clinical environment and may adversely affect patients care in the future.⁸

The study was designed to look into the factors which are responsible for stress and anxiety in medical students and ultimately give recommendations on how to cope with stress so that students focus on their studies in a comparatively relaxed manner and show better academic performance.⁹

MATERIAL & METHODS

This qualitative exploratory study was conducted at Islamic International Medical College Rawalpindi for six months in the year 2019. A total of ten students from final year MBBS were selected through non probability purposive

sampling technique. The written informed consent to was obtained prior to participation in the study. Students from all other classes were excluded. Semi structured interviews were conducted and then transcribed data was hand coded and major themes were summarized using content analysis. Ethical approval was taken from the institution ethical committee before commencing the study.

RESULTS

A total of three major themes were identified, subdivided into fourteen subthemes, which was based on the rounds of axial and vertical coding. Different codes identified in students perceptions about different stress factors were linked together.

Students ranked pressure of studies as the most important factor causing them stress and anxiety. They were of the opinion that vast syllabus and load of many lengthy topics was overwhelming for them and they could not cope with the work load easily. Fear of examinations came in second in which the students described assessment as distressing and caused them to be anxious. Assessment and examinations were linked with grades and marks and acquiring a low grade in an examination or a ward test was worrisome for the medical students as it would affect their final result. One of the students reported. 'We get tired cramming lengthy notes and memorizing detailed facts'.

Hectic and exhausting time table filled with back to back lectures, clinical rotations, evening classes in wards, case presentations and pod rotations made the students fatigued and they felt they need some break in between to recoup. Clinical environment was full of challenges and stressful situations as they had to deal with life and death situations, critically ill patients, demanding relatives of patients, ethical issues, etc and felt stressful during various stages lack of timely and constructive feedback which is the backbone of formative assessment was lacking in their institution and students often felt lost and confused as they could not judge their own performance and skill and needed proper feedback from their teachers to further improve themselves.

Major Themes	Sub Themes	Codes
Academic reasons	Pressure of studies	Memorizing long notes, difficult terminologies.
	Fear of examinations	Final professional exam, ward tests, class tests, assessments.
	Hectic time table	Back to back lectures, daily wards, evening ward classes.
	Challenging clinical Environment	Dealing with critically ill patients, dealing with nursing staff, interaction with consultants, case presentations.
	Lack of feedback by clinicians	Lack of constructive feedback, lack of formative assessment.
	Unsupervised clinical training	No guidance and supervision from seniors.
	Lack of structured clinical training	No concept of table of specification, haphazard time tables
	Non conducive learning environment	Noisy, dark, overcrowded, congested wards and OPDs .lack of demo rooms, lack of space and learning facilities in OPDs and wards.
	Time management issues	Less time to grasp lengthy syllabus, lesser time for preparation for exams. Inability to meet deadlines for assignments.
Social reasons	Peer pressure	Competition between class fellows, peers discourage to study.
	Pressure from parents to achieve academic excellence	High demands of parents and relatives for better grades,
Non academic reasons	Less time for leisure	No time for recreation. Less time for sports, TV and visit friends and family.
	Lack of sleep	Sleep deprivation, headache.
	Attendance issues	75 percent mandatory attendance in lectures and ward rotations.

Table-I. List of Codes, Sub themes and Themes derived from the Interviews

Another student quoted:

'We feel fatigued and exhausted because of rigorous routine with no time for relaxation in between to freshen our minds'.

Another dilemma which the students faced was peer pressure from fellow students and a fierce competition between students. The students which were not toppers and were mediocre, felt anxious because of the competitive environment. Students also complained that they had very less time for leisure and relaxation and their mind was overburdened with studies and clinical tasks. Another distressing factor identified by students was the non conducting learning environment as the wards and OPDs were overcrowded, noisy,

and dark with few facilities for food, prayer, and toilets, students felt irritable as they could not properly concentrate on clinical studies and tasks. There were no proper demo rooms in the OPDs and learning in the OTs was nearly impossible because the students could not look closely what were happening at the operation table.

A student was of the opinion:

'Our wards and OPDs are dark, untidy and have less space. There is issue of ventilation and we feel that teachers are not easily audible to students, during ward rounds and case discussions'

Lastly students felt that their clinical teaching was unstructured and unsupervised, the teaching

schedule was not properly documented and circulated to the students. Students were confused and mostly supervision of their history taking and physical examinations was either done by house officers or no one at all.

DISCUSSION

Our study has identified different sources of stress like academic, psychosocial and environmental factors have been identified from our study. From previous studies it has been identified that although assessment drives learning it is still the leading cause of anxiety in students as students fear failure and the shame associated with it.¹⁰ In a study done in Saudi Arabia students stated that pressure of studies was at the top of the list of the factors which contributed to their stress and affected their mental health and performance.¹¹ Several studies in the past have implicated that stress ratio is higher in females as compared to males because of various factors.¹²

A study done in a medical school in India also stated that stress due to academic reasons came first followed by inter and intra personal reasons and other environmental factors like living in a hostel. Teacher related stressors included lack of guidance provided by facilitators.¹³

A study stated that students felt that time table issues were also a perceived stressor in student's academic life.¹⁴ Another study stated that high parental expectation and competition among students was also seen as a leading stress factor in medical undergraduates.¹⁵ Our study which was conducted in a Pakistani setup revealed burden of demanding medical studies, fear of professional examinations, hectic study time tables and challenges in clinical environment as the leading causes of stress. The lack of guidance specially in clinical years, lack of feedback, peer pressure, less time for recreation, inappropriate learning environment and unstructured pattern of clinical training have also been identified which reinforces the factors found in our study.¹⁶ All these factors identified have given us an insight into the major dilemmas of medical education and their negative effects on student's mental health.¹⁷

Prior research has revealed that students experience dissatisfaction regarding content of curriculum, student teacher interaction and greater emphasis laid on memorizing facts and passing exams rather than gaining deep understanding of the subject matter and acquiring competencies and skills required for management of patients.¹⁸ Comparable studies have drawn attention to the fact that learning in medical colleges is mostly teacher centered as compared to being student centered and prioritization of educational activities needs major changes.¹⁹ Other researchers have also explained similar problems experienced by medical students in terms of facing challenging tasks in clinics and have perceived the medical college environment as tense and stressful.²⁰

There are certain medical colleges in the United States have initiated programs for students for improvement in their mental health.²¹ We also need to inculcate stress reducing techniques in our medical colleges so that students feel relaxed and concentrate on their studies. When they will feel relaxed automatically their academic performance will enhance and their results will improve. This is extremely important and will impart extremely beneficial results on student's health, well being and productivity.²²

We recommend that the student support department should be established in every medical college so that problems of students are identified and students are counseled and told how to cope with the stressful medical environment and become competent professionals. A healthy mind is a healthy body. When the minds of students will be relaxed free of tensions and worries they would be able to learn better and ultimately perform better in their clinical rotations. Students should be encouraged to adopt stress reduction strategies and indulge into healthy recreational and leisure activities like sports and competitions like debates and dramatics.

CONCLUSION

Stress in medical education is a problem which is deep rooted and occurs at one stage or the other in a medical student's life, but efforts can be made to reduce it. Faculty development

programs should include training of teachers so that they can counsel students regarding various academic and social problems. Learning environment should be made conducive so that students gain maximum benefit out of their studies. Time should be allocated in between studies for healthy extracurricular activities and sports. Student's feedback should be taken regularly and reforms should be made wherever necessary. Examination system should be streamlined. More stress should be laid on formative assessment and environment in the clinics should be tailored as student friendly. The students need to be guided at every point of their clinical training. Teacher student interaction needs to be improved. The main limitation of this study was that this study was carried out in a single private sector institute and therefore has a low generalizability. Future research should be done on exploring the coping strategies which should be adopted by medical students to reduce their stress levels.

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REFERENCES

1. Kötter T, Wagner J, Brühem L, Voltmer E. **Perceived medical school stress of undergraduate medical students predicts academic performance: An observational study.** BMC Med Educ. 2017; 17(1):1–6.
2. Sharma B, Wavare R, Deshpande A, Nigam R. **A study of academic stress and its effect on vital parameters in final year medical students at SAIMS Medical College, Indore, Madhya Pradesh.** 2011; 22(3):361–5.
3. Cecil J, McHale C, Hart J, Laidlaw A. **Behaviour and burnout in medical students.** Med Educ Online. 2014; 19:25209.
4. Qamar K, Khan NS, Rizwan M, Kiani B. **Factors associated with stress among medical students.** 2014; 753–5.
5. Bergmann C, Muth T, Loerbroks A. **Medical students' perceptions of stress due to academic studies and its interrelationships with other domains of life: A qualitative study.** Med Educ Online [Internet]. 2019; 24(1):1–10. Available from: <https://doi.org/10.1080/10872981.2019.1603526>
6. Imran S, Shah A, Mumtaz A, Chughtai AS. **Subjective happiness and academic procrastination among medical students: The Dilemma of Unhappy and Lazy Pupils.** 2017; 1–7.
7. Lai NM, Nalliah S, Jutti RC, Hla YY, Lim VK. **The educational environment and selfperceived clinical competence of senior medical students in a Malaysian medical school.** Education for Health. 2009 Aug 1;22(2):148.
8. Garg K, Agarwal M, Dalal PK. **Stress among medical students: A cross-sectional study from a North Indian Medical University.** Indian journal of psychiatry. 2017 Oct;59(4):502.
9. Kikuchi T. **Psychological stress.** Vol. 58 Suppl 1, Nippon rinsho. Japanese journal of clinical medicine. 2000. p. 671–4.
10. **(PDF) The Wounded Healers_ a qualitative study of stress in medical students.**
11. Buch RS, Vyas SN, Moitra M. **Documenting factors related to examination stress among school children in Surat city.** Int J Community Med Public Heal. 2019; 6(4):1788.
12. Abdulghani HM, AlKanhil AA, Mahmoud ES, Ponnampuruma GG, Alfaris EA. **Stress and its effects on medical students: a cross-sectional study at a college of medicine in Saudi Arabia.** Journal of health, population, and nutrition. 2011 Oct;29(5):516.
13. Gupta S, Choudhury S, Das M, Mondol A, Pradhan R. **Factors causing stress among students of a medical college in Kolkata, India.** Education for Health. 2015 Jan 1;28(1):92.
14. Sohail N. **Stress and academic performance among medical students.** 2013; 23(1):67–71.
15. Ruzhenkova V V., Ruzhenkov VA, Lukyantseva IS, Anisimova NA. **Academic stress and its effect on medical students' mental health status.** Drug Invent Today. 2018; 10(7):1171–4.
16. Article O. **Depression, stress and anxiety in medical students: A cross-sectional comparison between students from different semesters.** 2017; 63(1):21–8.
17. Erschens R, Herrmann–Werner A, Keifenheim KE, Loda T, Bugaj TJ, Nikendei C, Lammerding–Köppel M, Zipfel S, Junne F. **Differential determination of perceived stress in medical students and high-school graduates due to private and training-related stressors.** PLoS One. 2018 Jan 31;13(1):e0191831.
18. Naseem S, Orooj F, Ghazanfar H, Ghazanfar A. **Quality of life of Pakistani medical students studying in a private institution.** J Pak Med Assoc. 2016; 66(5):579–83.

19. Yusoff MS. **Stress management for medical students: A systematic review. In Social sciences and cultural studies-issues of language, public opinion, education and welfare 2012 Sep 19.** IntechOpen.
20. Bala S, Das S, Jatana R, Pundeer R, Kundu P, Kaur R. **The study for sources of stress and management among medical students.** Int J Basic Clin Pharmacol. 2018; 7(5):961.
21. Shankar PR, Balasubramaniam R, Ramireddy R, Diamante P, Barton B, Dwivedi NR. **Stress and Coping Strategies among Premedical and Undergraduate Basic Science Medical Students in a Caribbean Medical School.** Education in Medicine Journal. 2014 Dec 1;6(4).
22. Altemani AH, Merghani TH. **The quality of the educational environment in a medical college in Saudi Arabia.** 2017; 128-32.

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1	Manya Tahir	Principal author, Wrote abstract, introduction and conducted the whole study.	<i>Manya Tahir</i>
2	M. Wajih Uddin Butt	Did data collection and analysis.	<i>wajih butt</i>
3	Seema Gul	Created the title and wrote discussion.	<i>Seema</i>
4	Gul Muhammad Sheikh	Did referencing of the article.	<i>Gul Muhammad</i>
5	Rahila Yasmeen	Created the questions asked in interviews to collect data.	<i>Rahila</i>
6	Tahira Raza	Proof read the article.	<i>tahira</i>