ORIGINAL ARTICLE

Sources of Stress among Medical Students

MUDASAR ZIA[1], ANOOSH QAYYUM[2], SADIA MAJEED[3], MAHEEN SAAD[4], FARAH HANIF[5], SHAZIA RASHID[6]

[1]Assistant Professor, Department of Biochemistry, Ameerudin Medical College Lahore
[2]Assistant Professor, Department of Biochemistry, Ameerudin Medical College Lahore
[3]Assistant Professor, Department of Forensic Medicine & Toxicology, Continental Medical College Lahore
[4]Assistant Professor, Department of Biochemistry, Fazaia Medical College Islamabad
[5]Associate Professor, Department of Forensic Medicine & Toxicology, Sharif Medical and Dental College Lahore
[6]IBB student, University of Lahore
Correspondence to Dr. Sadia Majeed, Email: sadia.aimc@gmail.com

ABSTRACT

Aim: To find out the frequency and relative frequency of stress on medical students of a local medical college, Lahore.
Study Design: Cross sectional study
Place and Duration of study: Local Medical College with duration one month (Feb 2019)
Methods: The study was surveyed on 150 medical students of M.B.B.S part 1 & 11. Questionnaire was divided into three sections including environmental stress, family affairs stress and stress of studies.
Results: In the context of environmental stress features in medical students the highest odds of stress in students was problem in time management for study, followed by feeling of bullying and their current feelings of stress, feeling of uncomfortable at the time of dissection and conflict with other student. In the context of stress the highest odds of stress was due to family affairs in medical students was responsibility in regard to family problem, family issues, history of family depression and recently loss of family member. The last context was study related stress include the highest odds of stress in students who not fulfill self-expectations and fail to perform task followed by poor in the studies due disturbances by the class fellows, ineffective copying skills and non-serious attitude toward studies followed by emotional stress and sleeping.
Conclusion: It is concluded that good academic environment, as well as problem focused and emotion focused strategies may help to alleviate stress.
Keywords: Medical students, Relative frequency of stress.

INTRODUCTION

Medical education is professed as being stressful and this may have bad effects on education and mental level of students[1]. Stress in students is related to number of factors and it may be due to non-academic and academic factors, as well as environmental, social and psychological characteristics [2]. The most common mean of stress in medical student is related with their academics and psychological pressures. These pressures are usually from parents, vast course frequency of examinations, failure in examinatio, sleeping difficulties etc[3].

Non-academic factors associated with stress are college environment, student abuse, bullying, tough routines of study, lack of exercise. Others may be poor parental supervision, domestic violence and feeling of detachment. However, the exponential rise of multiple factors places even the most resilient student at high risk for burnout[4,5].

Parental pressures and expectations of teachers were linked with stress at the time of professional examinations. Joining of medical education due to parent interest is associated with fear of facing parent's sadness showed higher stress than the students of other professions[6].

Stress related medical education is, associated with signs of anxiety and depression and has an impact of academic performance and therefore, long lasting consequences. The high prevalence of depressive disorder in Pakistani male/ female is 25.5 and 57.5% respectively. According to – American Psychological Association,75% of adults experiencing moderate to high levels of stress in past to current year[7,8].

Stress disorders in medical students are major health issues with possibly harmful consequences that have a noteworthy influence on their personality and academic performance and on their future.

Study is therefore designed to explore the frequency and relative frequency of stress on medical students of a local medical college of Lahore.

MATERIAL AND METHODS

After getting permission from IRB, this study was surveyed 150 medical students of first and 11 Professional of local medical college. The age range of student was 19-20 year. Study duration was 1-2 months (March 2019 to May 2019). The cooperation of participants was 95% which yielded final sample size of 150 out of 200. Participants were selected by simple random sampling technique. Students on anti-depressant were excluded from the study. A Questionnaire was filled by consented participants. The final questionnaire was divided into three sections. Section 1 was related with environmental stress, section 2 was related with family affairs and stress, section 3 was based on stress and studies.

Statistical Analysis: Data was analyzed by CPSS 20. Frequency /relative frequency, odd ratio with 9% confidence interval were used to describe the problems of medical students. Chi square was used to compare the stress features of students. $P < 0.05$ is taken as significant

RESULTS

Distribution of environmental stress features in medical students (Table 1). There was substantial difference in types of environmental stress. The highest odds of stress was observed in students was problem in time management for study 22201 (95% CI 358268 followed by feeling of bullying and their current feelings of stress with odds 2.1, 0.44 (95% CI 3.3, 2.8). This showed a highly significant difference. The odds of feeling of uncomfortable at the time of dissection and conflict with other student were 0.68, 0.44 with 95% CI 1.08, 0.70. However the significant difference was only observed in case of conflict with students

Distribution of stress feature related with family affairs in medical students was tabulated as table 2. The highest odds of stress was observed in students was having responsibility in regard to family problem and under pressure due to family issues 0.33 and 0.25 (95% CI 0.53 & 0.4) followed by facing domestic problems, having history of family depression and facing a loss of family member recently with odds of 0.13, 0.14, 0.16 (95% CI 0.22, 0.23, 0.26). All these type of stress showed a highly significant difference.

Distribution of study related stress in medical students was tabulated as table 3. The highest odds 3.16 (95 % CI 5.06) of students were observed in the context of satisfied with the studies. The other major condition of stress was observed in students who not fulfill self-expectations and fail to perform task. Their odds were 1.45 and 1.71 with 95% CI 2.29 and 2.70. The next stress in student was reason of not doing well in the studies, which may include disturbances by the class fellows, ineffective copying skills and non-serious attitude toward studies and their odds are 0.25, 0.18 and 0.22 with 95 %CI 0.4, 0.3 and 0.35. Additionally the activity during stress was crying, eating continuously, and avoid to stress by sleeping with odds 0.01, 0.10, 0.15 and 1.0 with 95% CI 0.02, 0.18, 0.25, 1.57.

Table 1: Distribution of environmental stress in medical students

Type of stress	Agreed			Disagreed			P-Value
	Frequency & Relative frequency	Odd ratio	95 % Confidence Interval	Frequency & Relative Frequency	Odd ratio	95 % Confidence Interval	
Feeling of stress now a days	(90) 0.9 %	0.44	0.28	(60) 0.6%	2.25	3.57	P<0.006
Faced bullying or ragging in first/2nd day of M.B.B.S class	(95) 0.95%	2.1	3.3	(65) 0.65%	0.46	0.73	P<0.009
Problem in time management for study	(149) 1.49 %	22201	358268	(01) 0.001 %	0.000	0.0007	P <0.001
Feel uncomfortable at the time of dissection	(68) 0.68 %	0.68	1.08	(82) 0.82 %	1.45	2.29	P >0.1.06
Conflict with other students	(60) 0.6 %	0.444	0.70	90	2.25	3.57	P < 0.006

Table 2: Distribution of stress features related with family affairs in medical students.

Type of stress	Agreed			Disagreed			P- value
	Frequency & Relative Frequency	Odd ratio	95 % Confidence Interval	Frequency & Relative Frequency	Odd ratio	95 % Confidence Interval	
Under pressure due to family issues	(50) 0.5 %	0.25	0.4	(100) 01 %	4.0	6.46	P <0.001
Having any responsibility in regard to family	(55) 0.55 %	0.33	0.53	(95) 0.95%	2.98	4.77	P <0.001
Faced any kind of domestic problems	(40) 0.4 %	0.13	0.22	(110) 0.11 %	7.56	12.61	P <0.001
Have a history of family depression	(41) 0.41%	0.14	0.23	(109) 0.10 %	7.06	11.74	P <0.001
Faced loss of family member within the last one year	(43) 0.43%	0.16	0.26	(107) 0.10 %	6.19	10.21	P <0.001

Table 3: Distribution of study related stress in medical students.

Problems	Agreed			Disagreed			P- Value
	Frequency & Relative Frequency	Odd ratio	95 % Confidence Interval	Frequency & Relative Frequency	Odd ratio	95 % Confidence Interval	
Conditions of stress							
Not fulfill self-expectations	(82) 0.82%	1.45	2.29	(68) 0.68%	0.68	1.08	P>0.10
Fail to perform task	(85) 0.85%	1.71	2.70	(65) 0.64%	0.58	0.93	
Satisfied with the studies	(96) 0.96%	3.16	5.06	54	0.31	0.50	P <0.001
Reason of not doing well in the studies:							
Disturbances by the class fellows	(50)0.5%	0.25	0.40	(100) 1.0 %	4.0	6.46	P <0.001
Ineffective copying skills	(45) 0.45%	0.18	0.30	(105) 1.05%	5.44	8.9	P<0.001
Non serious attitude toward studies	(48) 0.48%	0.22	0.35	(102) 1.02 %	4.5	7.33	P<0.001
Activity during stress:							
Shout/Vent out	(15) 0.15%	0.01	0.02	(135) 1.35 %	81.0	172.23	P <0.001
Eat	(37) 0.37 %	0.10	0.18	(113) 1.13 %	9.32	15.76	P<0.001
Cry	(42)0.42%	0.15	0.25	(108) 1.08 %	6.61	10.94	P<0.001
Sleep	(75)0.75 %	1.00	1.57	(75) 0.75 %	1.00	1.57	P<0.001

DISCUSSION

Academic stress is common in students and it may include attending lectures, study burden in terms of deadlines, financial issues, assessments, pressure exerted by society and imbalance college life and personal life[9].

According to our survey, all students have problem in time management which is a goal of getting success in any field. It is found that many students have an ability to manage their time for studies and therefore they perform better in class, having mild form of stress and less overloaded [10].

According to our study, the percentage of frequency for feeling uncomfortable in dissection room was 30-35%. Studies of dissection-room experiences have inconsistent results. Some of the students quickly adopt the new academic environment [11] and other student fail to adopt and experience high level of stress, sleep disorder etc and may reach at the state of post-traumatic stress[12].

We found that most of the students have feeling of stress may be due to bullying or ragging. Bullying has highlighted the detrimental effects of being bullied on children's health and behavior[13]. It is reported that some time childhood stress may lead to adulthood stress[14].

We observed that 30- 40% frequency of under pressure is due to family issues, facing domestic problems with positive family depression. Comfort and strong relationships are the basis of good learning. Domestic violence highly effect on the academics of children and produce long term developmental penalties[15]. However, it is reported that academic activities of all children are not effective by domestic violence[16]. In adults domestic violence may be a reason of self-harm, depression, suicidal ideation, addiction and eating disorders[17]

According to our study, about 30% students join medical institute due to the wiliness of their parents. It is demonstrated that parent's expectations may be a source of academic stress and failure to achieve degree and success later in life[18]. We also found a good relationship of stress with family history of stress. It is stated that positive family history of depression may enhance the level of depression in students[19].

We found that percentage of frequency of stress of not fulfill self-expectations, fail to perform task and satisfaction with studies was in a range of 85-96. Academic stress is usually related with frustration due to class load, achieving good grades etc that may lead to wrong decision[20] .

Percentage of frequency of stress based on reason of not doing well in the studies based on the disturbances by the class

fellows, ineffective copying skills, non -serious attitude toward studies was in the range of 45-50. Disturbances in class room may effect on learning and academic achievments[21]. Mean of coping the stress used by most of the students is sleeping. It is suggested good coping is not only controlled the negative emotion but also used effective strategies to deal with them[22].

CONCLUSION

It is concluded that good academic environment, as well as problem focused and emotion focused strategies may help to alleviate stress. It is suggested that counseling of students and extra-curricular activities may help student to cope the stress.

Limitations of study: Students of all years were not recruited, which may limit to draw the conclusion.

Authors' Contributions: MZ: Study design and paper writing, **AQ**: Literature Search, **MM and FH**: Data collection, **SS**: Data interpretation, **SR**: Proof reading

Conflict of Interest: None.

Funding source: None

REFERENCES

1. Lattie EG, Kashima K, Duffecy JL. An open trial of internet-based cognitive behavioral therapy for first year medical students. Internet Interv. 2019;18:100279.doi:10.1016/j.invent.2019.100279
2. 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. 2019;24(1):1603526. doi:10.1080/10872981.2019.1603526.
3. Tsegay L, Shumet S, Damene W, Gebreegziabhier G, Ayano G. Prevalence and determinants of test anxiety among medical students in Addis Ababa Ethiopia. BMC Med Educ 2019;19: 423 doi.org/10.1186/s12909-019-1859-5
4. Qamar K, Khan NS, Bashir Kiani MR. Factors associated with stress among medical students. J Pak Med Assoc. 2015 Jul;65(7):753-5.
5. Ahmady S, Khajeali N, Sharifi F, Mirmoghtadaei ZS Factors related to academic failure in preclinical medical education: A systematic review. J Adv Med Educ Prof. 2019 Apr;7(2):74-85. doi: 10.30476/JAMP.2019.44711.
6. Subramani C & Venkatachalam J Parental Expectations and Its Relation to Academic Stress among School Students. Int J Res Anal Rev 2019; 6(2):95-99
7. Rehmani N, Khan QA, Fatima SS. Stress, Anxiety and Depression in students of a private medical school in Karachi, Pakistan. Pak J Med Sci. 2018;34(3):696-701. doi:10.12669/pjms.343.14664
8. Mihailescu A, Diaconescu L, Ciobanu AM. The impact of anxiety and depression on academic performance in undergraduate medical students. Eur Psychiat 2016; 33:S284 doi.org/10.10.16/j.eurpsy.2016.01.761
9. Pitt A, Oprescu F, Tapia G, et al. An exploratory study of students' weekly stress levels and sources of stress during the semester. Act Learn High Educ 2018;**19**:61–75.doi:10.1177/146978741773119
10. Adams RV and Blair E. Impact of Time Management Behaviors on Undergraduate Engineering Students' Performance. SAGE Open 2019: 1–11 doi: 10.1177/2158244018824506
11. Ghosh SK and Kumar A. Building Professionalism in Human Dissection Room as a Component of Hidden Curriculum Delivery: A Systematic Review of Good Practices. Anat Sci Edu 2019; 2(2): 210-221 doi.org/10.1002/ase.1836
12. Al Saadi T, Zaher Addeen S, Turk T, Abbas F, Alkhatib M. Psychological distress among medical students in conflicts: a cross-sectional study from Syria. BMC Med Educ. 2017 Sep 20;17(1):173. doi: 10.1186/s12909-017-1012-2.
13. Lereya ST, Copeland WE, Costello EJ, Wolke D. Adult mental health consequences of peer bullying and maltreatment in childhood: Two cohorts in two countries. The Lancet Psy. 2015;2(6):524–531. doi.org/10.1016/S2215-0366(15)00165-0
14. Hager AD, Leadbeater BJ. The longitudinal effects of peer victimization on physical health from adolescence to young adulthood. Journal of Adolescent Health. 2016;58(3):330–336. doi: 10.1016/j.jadohealth.2015.10.014.
15. Lloyd M. Domestic Violence and Education: Examining the Impact of Domestic Violence on Young Children, Children, and Young People and the Potential Role of Schools. Front Psychol. 2018;9:2094. doi: 10.3389/fpsyg.2018.02094
16. Lloyd M. Domestic Violence and Education: Examining the Impact of Domestic Violence on Young Children, Children, and Young People and the Potential Role of Schools. Front Psychol. 2018;9:2094. Published 2018 Nov 13. doi:10.3389/fpsyg.2018.02094
17. Callaghan JE. M, Alexander JH, Sixsmith J, & Chiara Fellin L. Beyond "Witnessing": children's experiences of coercive control in domestic violence and abuse. J. Interpers. Violence 2018; 331551–1581. doi.org/10.1177/0886260515618946
18. Lindberg EN, Yildirim E, Elvan O, Ozturk D, Recepoglu S. Parents' educational expectations: Does it matter for academic success?. SDU Int J Edu Stud 2019; 6(2): 150-160. Doi: 10.33710/sduijes.596569
19. Zalar B, Blatnik A, Maver A, Klemenc-Ketiš 3 , Peterlin B. Family history as an important factor for stratifying participants in genetic studies of major depression. BJMG 2018;21 (1): l 5-12 doi 10.2478/bjmg-2018-0010
   Reddy KJ, Menon KR, Thattil A. Ademic stress and its sources among university students. Biomed Pharmacol J 2018;11(1): 531-537 doi.org/10.13005/bpj/1404
20. Närhi V, Kiiski T, Savolainen H. Reducing disruptive behaviours and improving classroom behavioural climate with class- wide positive behaviour support in middle schools. Brit Edu Res J. 2017;43(6):1186–205 doi.org/10.1080/08856257.2014.986913
   Sándor I, Birkás E, Győrffy Z. The effects of dissection-room experiences and related coping strategies among Hungarian medical students. BMC Med Educ. 2015;15:73. doi.org/10.1186/s12909-015-0355-9