Section: Physiology

Original Research Article

IMPACT OF ACADEMIC STRESS ON MENTAL HEALTH OF UNDERGRADUATE MEDICAL STUDENTS-A CROSS SECTIONAL STUDY

Het patel[1], Huma Saiyad[2], Shaista Saiyad[3]

[1]IIIrd MBBS, Smt. NHL Municipal Medical College, Ahmedabad, India.
[2]IIIrd MBBS, B J Medical College, Ahmedabad, India.
[3]Assistant Professor, Department of Physiology, Smt. NHL Municipal Medical College, Ahmedabad, India.

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Corresponding Author:
Dr. Shaista Saiyad,
Email: shaistasaiyad77@gmail.com

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Abstract

Background: Medical students face many stressors during their study period. Stressors can be related to academics, physical, interpersonal relationships, out of which academic is most important. If interventions are not carried out, stress can lead to mental disturbances like anxiety. Our study aimed to evaluate stress among undergraduate medical students. **Materials and Methods:** Study was conducted among 534 MBBS undergraduate medical students. SSI scale and WHO well-being index scale was used for stress evaluation. **Results:** According to WHO wellbeing scale, poor wellbeing was seen in 41.9% of the students and good wellbeing was seen in 58.1% of the students. Mild total stress was seen in 39.5% , moderate total stress was seen in 60.1% and severe total stress was seen in 0.4% of the students. Mild academic stress was seen in 19.1%, moderate academic stress was seen in 62.4% and severe academic stress was seen in 18.5% of the students. Mild physical stress was seen in 45.1% of the students. Mild interpersonal relationship stress was seen in 50.2% of the students. Moderate environmental stress was seen in 59.7% of the students. Severe environmental stress was seen in 9.4% of the students. **Conclusion:** Early detection of streors is essential among medical students for well bieng of students. Several stress management programmes have proved to be effective in reducing academic as well as overall stress in students and have also helped in early stress detection.

INTRODUCTION

Undergraduate medical curriculum is very cumbersome and demanding compared to most of other discipline. Due to the exhausting medical training, the students experience burnout as they progress through their medical studies. As a result, incidences of mental illness like depression, anxiety, suicidal tendencies are very common. As a part of normal physiological homeostasis, our body tries to maintain psychological homeostasis by various mechanisms. However, when the degree of stress increases, interventions are required to maintain homeostasis.

It has been found that stress in medical students is common and process oriented.[1] Also, stress and symptoms of anxiety and depression increase in initial years of medical studies.[2] Medical students experience mental disturbances like depression throughout out their medical studies.[3] According to a study by Bergmann, Christin et al.[4], academic stress of medical students can also lead to personal challenges and affect private life in multiple ways. Academic stress is considered as an important predictor of poor mental health.[5] A high level of suicidal tendency has been noted due to academic stress.[6] The students have to be updated with an immense amount of information and have to memorize a lot of data in ability to cope up with the course within the duration available before exams leading to distress and students seem to be struggling to reach the demands of the medical curriculum. Medical students show high anxiety even in absence of examination.[7] This shows that in addition to examination, factors like new learning environment, financial requirements, peer pressure, social interactions etc can also lead to stress.

According to WHO.[8] Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Mental well being plays a very crucial role in overall academic as well as personal growth of students.

Stress is an imbalance between the surrounding conditions required for survival and individual's neurological and physiological ability to adapt to the new conditions.[9] Stress is an emotionally unstable condition that hampers one's ability to focus and function effectively.[10] It retards person's efficacy

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and productivity academically. Stress has been underdiagnosed and less talked about.

It was long believed that students seemed to be least affected by any kind of stress but it has been seen that stress appears to be a lifestyle crisis affecting any individual regardless of their age.[11] Compared to any other course undergraduates, medical undergraduate students are the most distressed group of students.[12] We all are well aware that medical schooling is emotionally as well as physically taxing. Of course, some academic stress is necessary for healthy competition which encourages learning.[13] However, parents' expectations become a huge burden to the students.[13] and also life changes such as family detachment and building of self-identity. Psychological stress often leads to depression. Undergraduate medical students whose mental health is despaired are unable to concentrate and acquire proper medical knowledge causing low academic performance and hampered medical skills.[14]

Stress can be judged on different parameters like physical, interpersonal relationship, academic and environmental. Stress in medical students is caused by strenuous medical programs. The most pertinent issue is that they are required to learn excessive amount of new information within a short time lapse before their exams.

Failure of early stress detection which affects physical and psychological mental health of medical students leads to rise in psychological morbidity affecting their careers and lives.[12]

Psychological stress often leads to depression. Undergraduate medical students whose mental health is despaired are unable to concentrate and acquire proper medical knowledge causing low academic performance and hampered medical skills.[14]

COVID 19 pandemic opened our eyes to this hidden issue of stress among medical students. Already stressed students were exposed to emotional stress; some were deputed for COVID duties which added to their woes. If medical curriculum is modified to address the issue of stress among medical students, it would benefit the students as well as society in long run.

Appropriate stress and time management is an important skill that a student must acquire which would even be helpful in the future.[15] Simple, yet effective measures can be implemented by medical schools in future healthcare for combating stress.[16]

Though many studies have been conducted in foreign countries regarding stress among medical students, there is paucity of evidences regarding this matter among Indian medical schools. Our study is proposed to identify effect of stress on mental health of undergraduate medical students in India. If academic stress is identified in early stages, appropriate interventions can be undertaken for mental well-being of the students.

The aim of our study was to evaluate academic stress and its impact on mental well being of undergraduate medical students.

MATERIALS AND METHODS

Study was conducted at a Medical College after obtaining permission from the Institutional Review Board. Our study was cross sectional and educational study.

Sample size: The study population was 534 MBBS undergraduate medical students. Statistician was consulted for estimation of sample size. Taking Sd of 11.65 Sample mean =84.81. Population Mean of 86.3 Alpha 5% power 80% sample size was 480.

Considering a drop out of 10% (i.e. 48 or 50) the total sample size was 530 however in the present study we have taken a sample size of 534.

The inclusion criteria were all undergraduate medical students who gave consent for the study. The exclusion criteria comprised of all students who did not give consent were excluded from the study. Incomplete questionnaires were excluded.

Data collection tools:

1.SSI (Student Stress Inventory) scale32 was used for evaluation of stress among medical students. Permission was taken from the inventors of the scale before administration. Overall reliability coefficient is 0.857, which is satisfactory. SSI scale also has good content validity with overall score of 0.805 (80.5%)32. The scale uses 4 elements to estimate the stressors among medical students- academic, physical, interpersonal relationship and environmental. The tool has 40 items with scale ranging from 1 to 4. SSI consists of 40 negative items to measure 4 subscales (10 items for each subscale) which are-

sub scale 1: Physical (10 items),
sub scale 2: Interpersonal relationship (10 items),
sub scale 3: Academic (10 items) and
subscale 4: Environmental factor (10 items).

SSI has been designed with ordinal scale of the 'Never', 'Somewhat frequent', 'Frequent' and 'Always'. The value mark given for each choice are 1 for 'Never', 2 for 'Somewhat Frequent', 3 for 'Frequent' and 4 for 'Always'.

The administration process approximately took 15 to 20 minutes. The instructions were given clearly and precisely in order to make the respondents answer the questions honestly.

Informed consent was taken before administration of the scale. Students were asked to fill basic demographic information before attempting the SSI.

Scoring.

The 40 questions are rated on a 4-point likert scale.

Table 1: Scoring Value for Student stress Inventory

Ordinal Scale	Scoring weight
Never	1
Somewhat frequent	2
Frequent	3
Always	4

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Interpretation

Table 2: Total SSI score analysis

Total Score	Level of Stress
40-80	Mild Stress
81-121	Moderate Stress
122-160	Severe Stress

Table 3: Interpretation of total SSI score

MILD STRESS SCORE (40-80)	MODERATE STRESS SCORE (81-121)	SEVERE STRESS SCORE (122-160)
Having a good of coping skills when feel stressed or feel that things are out of control. Having a positive attitude and high self efficacy. Having a good relationship with people and able to adapt in new environment Precaution step : Keep up the good attitude. Continue the best way in handling stress. Always look after of yourself. Stay fit and healthy	Having a moderate of coping skills when feel stressed or feel that things are out of control. Having a moderate attitude and high self efficacy. Having an average relationship with people and partially able to adapt in new environment Precaution step : Avoid future life crises. Minimize conflict with other people, avoid taking on new obligations or engaging with new program of study. Take things easy and look after yourself. Speak up, learn stress management techniques.	Having a bad of coping skills when feel stressed or feel that things are out of control. Having a bad attitude and high self efficacy. Having trouble in relationship with people and not able to adapt in new environment. Could cause severe health problem Precaution step : Avoid future life crises. Minimize conflict with other people, avoid taking on new obligations or engaging with new program of study. Take things easy and look after yourself. Learn stress management techniques. Ask for help, seek the counsellor

2. WHO-5 wellbeing scale33: A validated questionnaire consisting of five questions was administered to evaluate mental status of the medical students. This questionnaire is validated and is free to use.

The WHO- 5 questionnaire has 5 items with scale ranging from 0 to 5. It is a short questionnaire consisting of 5 simple and noninvasive questions to determine the subjective well-being of the participants. It is free to use and has adequate validity.

Scoring:

The raw score is calculated by totaling the figures of the five answers. The raw score ranges from 0 to 25, 0 representing worst possible and 25 representing best possible quality of life. To obtain a percentage score ranging from 0 to 100, the raw score is multiplied by 4. A percentage score of 0 represents worst possible, whereas a score of 100 represents best possible quality of life.

Both, scale and questionnaire were administered to students after their formative examination for better evaluation. Physical forms were used for administration.

* Statistical analysis: Statistician was consulted for data analysis. Data was analyzed using SPSS version 20.0.

RESULTS

Our study constituted 35.91% of males and 64.08% of females

Table 1: Scoring of subscales of SSI scale and WHO-5 wellbeing scale

		Physical	Interpersonal Relationship	Academic	Environmental	Total	Well Being Index
N		534	534	534	534	534	534
Median		19.00	18.00	23.00	22.00	84.00	15.00
Quartile	1st	16.00	15.00	20.00	17.00	76.00	11.00
	3rd	22.00	23.00	28.00	26.00	93.00	17.00

The median value and inter quartile range of the physical stress was 19 and 16-22 respectively.
The median value and inter quartile range of the interpersonal relationship stress was 18 and 15-23 respectively.
The median value and inter quartile range of the academic stress was 23 and 20-28 respectively.
The median value and inter quartile range of the environmental stress was 22 and 17-26 respectively.
The median value and inter quartile range of total score was 84 and 76-93 respectively.

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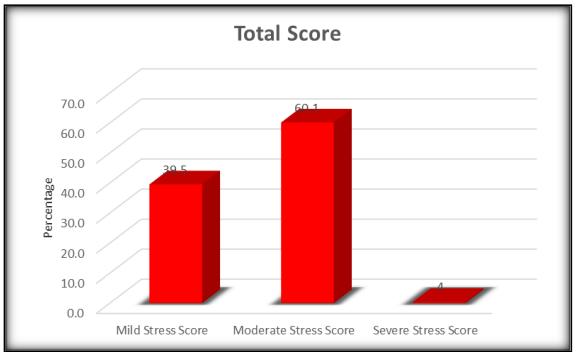
The median value and inter quartile range of wellbeing index was 15 and 11-17 respectively.

Table 5: Total SSI score frequency

Total Score	Frequency	Percent
Mild Stress Score	211	39.5
Moderate Stress Score	321	60.1
Severe Stress Score	2	0.4
Total	534	100.0

Mild total stress was seen in 39.5% of the students.
Moderate total stress was seen in 60.1% of the students.
Severe total stress was seen in 0.4% of the students

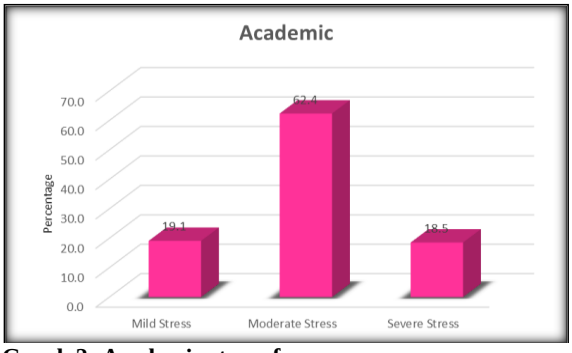


Graph 1: Total SSI score

Table 6: Academic stress frequency

Academic	Frequency	Percent
Mild Stress	102	19.1
Moderate Stress	333	62.4
Severe Stress	99	18.5
Total	534	100.0

Mild academic stress was seen in 19.1% of the students.
Moderate academic stress was seen in 62.4% of the students.
Severe academic stress was seen in 18.5% of the students.



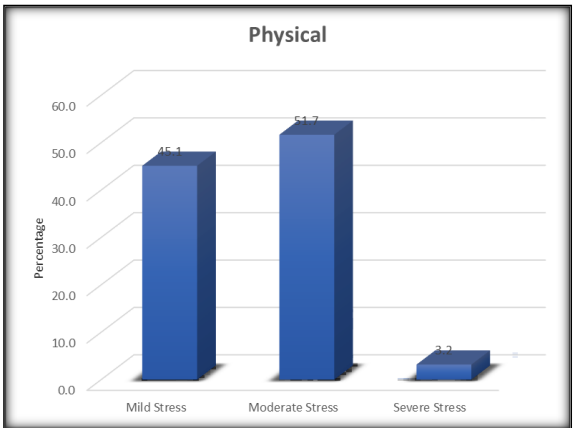
Graph 2: Academic stress frequency

Table 7: Physical stress frequency

Physical	Frequency	Percent
Mild Stress	241	45.1
Moderate Stress	276	51.7
Severe Stress	17	3.2
Total	534	100.0

Mild physical stress was seen in 45.1% of the students.

Moderate physical stress was seen in 51.7% of the students.
Severe physical stress was seen in 3.2 % of the students.

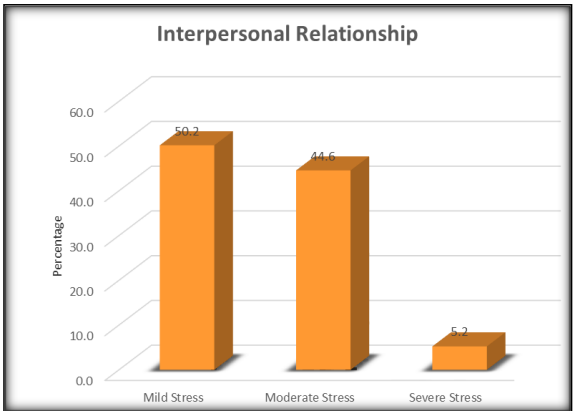


Graph 3: Physical stress frequency

Table 8: Interpersonal relationship stress frequency

Interpersonal Relationship	Frequency	Percent
Mild Stress	268	50.2
Moderate Stress	238	44.6
Severe Stress	28	5.2
Total	534	100.0

Mild interpersonal relationship stress was seen in 50.2% of the students.
Moderate interpersonal relationship stress was seen in 44.6% of the students.
Severe interpersonal relationship stress was seen in 5.2% of the students.



Graph 4: Interpersonal relationship stress frequency

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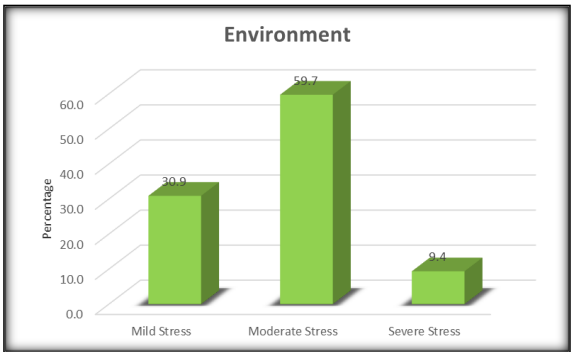
Table 9: Environmental stress frequency

Environment	Frequency	Percent
Mild Stress	165	30.9
Moderate Stress	319	59.7
Severe Stress	50	9.4
Total	534	100.0

Mild environmental stress was seen in 30.9% of the students.
Moderate environmental stress was seen in 59.7% of the students.
Severe environmental stress was seen in 9.4% of the students.



Graph 5: Environment stress frequency

Table 10: Correlation between academic, physical, interpersonal and environmental stress

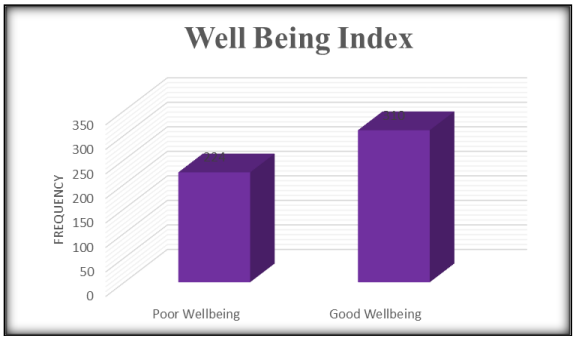
			Physical	Interpersonal Relationship	Environment	Total Score
Spearman's rho	Academic	Correlation Coefficient	.023	.028	.054	.473
		Sig. (2-tailed)	.604	.515	.215	<0.001
		N	534	534	534	534

The Spearman correlation coefficient between academic performance and physical performance showed weak positive correlation between the two variables, but statistically it is not significant (p=0.605).
The Spearman correlation coefficient between academic performance and interpersonal relationship performance showed weak positive correlation between the two variables, statistically it is not significant (p=0.515).
The Spearman correlation coefficient between academic performance and environment performance showed weak positive correlation between the two variables, but statistically not significant (p=0.215).
The Spearman correlation coefficient between academic performance and total performance show moderate positive correlation between the two variables and statistically it is significant (p<0.001).

Table 11: Wellbeing index score.

Well Being Index	Frequency	Percent
Poor Wellbeing	224	41.9
Good Wellbeing	310	58.1
Total	534	100.0

Poor wellbeing was seen in 41.9% of the students.
Good wellbeing was seen in 58.1% of the students.



Graph 6: Well-being index score

DISCUSSION

Our study focused on determination of academic stress on undergraduate medical students and evaluation of their mental wellbeing.
Our study constituted 35.91% of males and 64.08% of females.

Total sample size was 534 students. Table 4 shows the scoring of subscales of SSI scale and WHO-5 wellbeing scale.
As far as total stress- combination of academic, interpersonal, environmental and physical stress is concerned, according to Table 5, our results indicate that 0.4% of students had severe stress, 60.1% had moderate stress whereas 39.5% of students had mild stress. The fact that more than half of the students had moderate stress, is of great concern. Our results are similar to a study by Saipanish R34, where 61.4% of students had stress and 2.4% had high level of stress. However according to a study by Firth J35, the level of stress and resultant emotional disturbance was 31.2% among medical students, which is lower than our results. This difference could be due to different medical system in their country. In a study by Shawaz Iqbal36 in Indian medical school, regarding stress, more than half of the students were affected by depression (51.3%), anxiety (66.9%) and stress (53%). These results are

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similar to our results. Increased overall stress among medical students is of great concern as it may have long term chronic impaired effects on health of students and ultimately affect patient care later. Such students have moderate coping skills32 when under stress and often feel that things are out of control leading to lack of confidence and ultimately vicious cycle of stress develops. Introduction of stress management skills among stressed students would be of immense help. It has been found that introduction of various stress management training programs in different courses of mental health department can help in improvement of mental health of students37.

The SSI scale used by us determined the degree of academic, physical, interpersonal and environmental stress among undergraduate medical students.

As far as academic stress is concerned, according to our results- Table 6, mild academic stress was seen in 19.1% of the students, moderate academic stress was seen in 62.4% of the students and severe academic stress was seen in 18.5% of the students. More than half of students had moderate academic stress. These students were stressed about financial problems due to college expenses, inadequate time management between studies and social activities, felt nervousness while in class presentation, dealing with deadlines, examinations. They gradually lost interest in courses, felt burden of academic overloads and felt difficulty in handling academic issues32. Our results are similar to study by Ruzhenkova et al.[6], according to which, out of all the stressors for medical students, academic stressors were more devastating than all. Academic stress undermines medical students‘ mental health and leads to asthenic, anxious, anxious- depressive disorders and emotional burnout.[6]

In our study (Table 10), the Spearman correlation coefficient between academic performance and total performance show moderate positive correlation between the two variables and statistically it was significant ($p<0.001$). This shows that academic stress is one of the major determinants of stress among medical students.

It has been documented that stress mangement programmes are very effective in reducing academic stress and help students to reduce negative coping skills38.

As far as physical stress is concerned according to our results (Table 7), 51.7% of students had moderate physical stress and 3.2% had severe. According to a similar study, physical problems were found to be independent significant risk factors for outcome variable of stress39. However in our sudy (Table 10), the Spearman correlation coefficient between academic performance and physical performance showed weak positive correlation between the two variables.

In our study, (Table 8), mild interpersonal relationship stress was seen in 50.2% of the students, moderate interpersonal relationship stress was seen in 44.6% of the students and severe interpersonal relationship stress was seen in 5.2% of the students. In a similar study, it was found that interpersonal stress is inversely related to morale of medical students. Interpersonal skills are related to relationship of students with parents, friends, peers and faculty. In our study, the Spearman correlation coefficient between academic performance and interpersonal relationship performance showed weak positive correlation between the two variables, statistically it is not significant (Table 10).

Moderate environmental stress was seen in 59.7% of the students (Table 9) and severe environmental stress was seen in 9.4% of the students. Environment stress was related to transportation, hostel, pollution, inadequate hostel facilities, insecurity in a new place. Again in our study, the Spearman correlation coefficient between academic performance and environment performance showed weak positive correlation between the two variables, but statistically not significant (Table 10).

In our study, according to WHO wellbeing scale, poor wellbeing was seen in 41.9% of the students and good wellbeing was seen in 58.1% of the students (Table 11). More than 40% students have poor wellbeing which suggests that stress, mainly academic stress maybe responsible for decline in wellbeing of students. Study by Georgia Barbayannis et al has found significant correlation between poor academic stress and poor mental wellbeing of students41. Academic stress maybe a dominant stress factor affecting mental wellbeing of medical students. Wellness is very important issue for medical students 42. For promoting wellbeing some curricular modifications in the form of promoting positive behaviors, extracurricular activities and providing resources to students can be helpful 42 .

Students exposed to various stressors try to use various coping mechanisms to reduce stress. Religious coping, active coping, positive reframing and planning were found to be most used coping strategies, whereas behavioral disengagement, denial and substance use were found to be least used ones43. However, stress among medical students usually is chronic and many times coping strategies are inadequate, hence, regular and longitudinal stress management programs should be introduced in medical curriculum.

CONCLUSION

Stress is very common among undergraduate medical students. Academic stressors contribute maximum among all the stressors. Chronic academic stress can lead to poor mental wellbeing of the medical students. Hence, it is recommended to introduce stress management programs and address various stressors related to medical students.

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REFERENCES

1. Supe A N. A study of stress in medical students at Seth G.S. Medical College. J Postgrad Med 1998;44:1-6.
2. Voltmer E, Köslich-Strumann S, Voltmer JB, Kötter T. Stress and behavior patterns throughout medical education - a six year longitudinal study. BMC Med Educ. 2021 Aug 28;21(1):454.
3. Silva V, Costa P, Pereira I, et al. Depression in medical students: insights from a longitudinal study. BMC Med Educ. 2017;17(1):184.
4. Bergmann, Christin et al. "Medical students' perceptions of stress due to academic studies and its interrelationships with other domains of life: a qualitative study." Medical education online vol. 24,1 (2019): 1603526. doi:10.1080/10872981.2019.1603526.
5. Mehmet A. Karaman, Eunice Lerma, Javier Cavazos Vela, and Joshua C. Watson. Predictors of Academic Stress Among College Students. Journal of College Counseling. 2019;22(41-55).
6. Ruzhenkova, V. V, Ruzhenkov, V. A., Lukyantseva, I. S., & Anisimova, N. A. (2018). Academic stress and its effect on medical students' mental health status.
7. Kharche, D. S., Pranita, D., Phadke, D. A. V., & Joshi, D. (2012). Evaluation Of Examination Stress In I MBBS Medical Students: Examination stress in medical students. National Journal of Integrated Research in Medicine, 3(5), 27-31.
8. Constitution of the World Health Organization. Geneva: World Health Organization; 1948.
9. Siraj, H. H. ., A, S. ., R, R. ., NA, H. ., TH, J. ., & MN, O. . (2014). Stress and Its Association with the Academic Performance of Undergraduate Fourth Year Medical Students at Universiti Kebangsaan Malaysia. IIUM Medical Journal Malaysia, 13(1).
10. Qamar K, Khan NS, Bashir Kiani MR. Factors associated with stress among medical students. J Pak Med Assoc. 2015 Jul;65(7):753-5.
11. Reddy K.J, Menon K., Thattil A. Academic Stress and its Sources Among University Students. Biomed Pharmacol J 2018;11(1).
12. Sherina MS, Rampal L, Kaneson N. Psychological stress among undergraduate medical students. Med J Malaysia. 2004 Jun;59(2):207-11.
13. Joseph, N., Nallapati, A., Machado, M.X. et al. Assessment of academic stress and its coping mechanisms among medical undergraduate students in a large Midwestern university. Curr Psychol 40, 2599–2609 (2021).
14. "Academic Stress in Undergraduate Medical Students | Journal of Positive School Psychology." Academic Stress in Undergraduate Medical Students | Journal of Positive School Psychology, 26 June 2022. journalppw.com/index.php/jpsp/article/view/7728.
15. Impact of Procrastination and Time-Management on Academic Stress among Undergraduate Nursing Students: A Cross Sectional Study Shalini G Nayak, PhD International Journal of Caring Sciences September-December 2019 Volume 12 | Issue 3| Page 1480
16. O'Byrne L, Gavin B, Adamis D, et al Levels of stress in medical students due to COVID-19 Journal of Medical Ethics 2021;47:383-388.
17. Mohamed arip, Mohammad Aziz Shah. (2016). MANUAL OF STUDENT STRESS INVENTORY (SSI) Development, Validity And Reliability of Student Stress Inventory (SSI).
18. Bech P. Measuring the dimensions of psychological general well-being by the WHO-5. QoL Newsletter 2004; 32: 15-16.
19. Saipanish R. Stress among medical students in a Thai medical school. Med Teach. 2003 Sep;25(5):502-6.
20. Firth J. Levels and sources of stress in medical students. Br Med J (Clin Res Ed). 1986 May 3;292(6529):1177-80.
21. Iqbal S, Gupta S, Venkatarao E. Stress, anxiety and depression among medical undergraduate students and their socio-demographic correlates. Indian J Med Res. 2015 Mar;141(3):354-7.
22. Yazdani M, Rezaei S, Pahlavanzadeh S. The effectiveness of stress management training program on depression, anxiety and stress of the nursing students. Iran J Nurs Midwifery Res. 2010 Fall;15(4):208-15.
23. Premnath, A., Sivan, S., Velayudhan, R., MS, S., & TM, R. (2020). Effect of a Stress Reduction Programme on Academic Stress and Coping Skills of First Year Medical Students. Kerala Journal of Psychiatry, 33(1), 27–33.
24. Abdulghani HM, AlKanhal AA, Mahmoud ES, Ponnamperuma GG, Alfaris EA. Stress and its effects on medical students: a cross-sectional study at a college of medicine in Saudi Arabia. J Health Popul Nutr. 2011 Oct;29(5):516-22.
25. Spiegel DA, Smolen RC, Jonas CK. An examination of the relationships among interpersonal stress, morale and academic performance in male and female medical students. Soc Sci Med. 1986;23(11):1157-61.
26. Georgia Barbayannis, Mahindra Bandari, Xiang Zheng, Humberto Baquerizo, Keith W. Pecor 4, Xue Ming. Academic Stress and Mental Well-Being in College Students: Correlations, Affected Groups, and COVID-19. Frontiers in Psychology. 2022 May;13:1-10.
27. Butcher MR, Thompson KM, Williams MK, Cooke BK, Merlo LJ. Assessment of Student Perspectives on Improving Wellness in Medical School: Qualitative Results from a Cross-Sectional Survey of Medical Students in Florida. Adv Med Educ Pract. 2021 Sep 21;12:1067-1079.
28. Hindawi, et al. "Evaluation and Comparison of Medical Students Stressors and Coping Strategies Among Undergraduate Preclinical and Clinical Year Students Enrolled in Medical School of Arsi University, Southeast Ethiopia." Evaluation and Comparison of Medical Students Stressors and Coping Strategies Among Undergraduate Preclinical and Clinical Year Students Enrolled in Medical School of Arsi University, Southeast Ethiopia, 22 Nov. 2021. www.hindawi.com/journals/edri/2021/9202156.

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