

Prevalence of Psychological Stress, Tension Type Headache and Altered Quality of Life in Medical Students: A Brief Review

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DOI: <https://doi.org/10.52403/ijshr.20230322>

ABSTRACT

Defining health entails a wide and integrated view of individuals that incorporates numerous interconnected social, psychological, and physical elements. Without a doubt, medical schools ensure that graduates are competent, skilled, and professional enough to meet society's expectations; nonetheless, numerous previous research have revealed a significant prevalence of self-reported psychological suffering among medical students. Although an ideal degree of stress is beneficial for pupils during academic tests, psychological suffering can impair academic achievement. Because psychological and physical pressures grow during the medical schedule, medical students get tension type headache at a higher rate than the general population. A few studies have also discovered a link between medical students' QoL and an increased risk of depression, burnout, and suicidal thoughts. The process of medical education in the medical learning environment can have negative effects on students' well-being in terms of physical and mental suffering, development of social relationships, and loss of energy.

Key words: psychological stress, tension type headache, sleep quality, medical students

INTRODUCTION

Health is more than just the absence of illness; it entails a comprehensive and integrative view of individuals that incorporates a wide range of interconnected social, psychological, and physical aspects.¹ Medical schools ensure that graduates be aware, skilled, and competent in order to meet the demands of society. Numerous previous research has found a higher prevalence of self-reported psychological discomfort among medical students than in the general population. Although an ideal degree of stress is beneficial for pupils during academic tests, psychological suffering may impair academic achievement. Personality, life events, obligations, medical school workload, curriculum, and/or exposure to patient mortality can all cause psychological anguish.²

Headache problems are also a significant public health concern, as they are the most common complaint among individuals seeking medical care and are considered the most common nervous system illnesses. It is believed that over half of the world's population suffers from headaches, which are frequently chronic disorders. However,

pain perception and headache symptoms alter with age and longevity, respectively. Tension headache is characterised by a bilateral, band-like, pressing or tightening in quality, or dull aching that radiates from the forehead to the occiput or neck muscles. It might range from a slight headache every now and then to a daily severe headache (episodic or chronic). The episodic tension-type is further separated into two categories: occasional and frequent.

Because psychological and physical pressures grow during the medical schedule, medical students get headaches at a higher rate than the general population. Its severity is directly proportional to its negative impact, which includes decreased academic performance, absenteeism, and discipline failures, as well as decreased quality of life and an increase in the identification of comorbid psychiatric problems.³

A few studies have also discovered a link between medical students' QoL and an increased risk of depression, burnout, and suicidal thoughts.

Health-related quality of life (HR-QoL) is a multifaceted notion that encompasses respondents' subjective perceptions of their physical and mental well-being. QoL is described as one's subjective impression of one's own well-being within one's socio-cultural setting, or as attaining the ideal of perfection.⁴

Health-related quality of life (HRQoL) is an essential health outcome assessment since it evaluates health not just in terms of years lived but also in terms of quality of life. Biological, behavioural, psychological, and socioeconomic factors, as well as age and gender, can all influence an individual's level of health-related quality of life.⁵

In philosophical, political, and health-related contexts, the idea of QoL has multiple connotations. The World Health Organisation (WHO) defined QoL as "individuals' perceptions of their position in life in relation to their goals, expectations, standards, and concerns in the context of the culture and value systems in which they live." The process of medical education in

the medical learning environment can have negative effects on students' well-being in terms of physical and mental suffering, development of social relationships, and loss of energy.

In other words, students' quality of life frequently deteriorates during medical school.⁶

Factors affecting quality of life and leading to psychological stress and tension type headache:

These can possibly be attributed to greater workload, competitiveness, increased proximity to diseases and death, and the medical curriculum itself. The aforementioned mental stress can be further accentuated by factors such as alcohol dependency, substance abuse, tobacco usage, unfavorable living conditions, past medical trauma, and personal relationships.⁴

Specific factors which affect Quality of life in medical students are meeting both academic and professional demands, transitioning through the years of training, limited leisure time, examination anxiety, and problems with adapting to the clinical environment, as well as lack of perceived support, experiencing financial difficulties, academic demands of study, and expectations from staff and parents.⁶

Psychological factors such as dissatisfaction with study, family life and personal reasons, bad financial situation, stress, overwork, not enough sleep, insomnia, depressed mood, anxiety, irritability and tendency towards conflicts can cause tension type headache.⁷

METHOD

Studies were searched from the following search engine PubMed, Google scholar and Research gate to review the literature. We included observational studies that investigated the prevalence of psychological stress and tension type headache and assessed the quality of life

in medical students. Key words used to search studies were stress, tension type headache, sleep quality and medical students.

Author Journal Year	Age (years)/ mean \pm SD	Study population	Study setting	Study tool	Study period	Sample size	Result
Lins L. et al Int. J. Med. Educ. 2015 ⁸	17-33 years	Undergraduate medical students	Bahiana School of Medicine and Public Health (EBMSP), a private institution in Salvador, State of Bahia, Brazil.	HRQOL was assessed by using a Brazilian Portuguese version of the SF-36 form.	October/November 2013	180 students	The medical students showed poor HRQOL, mainly because of the mental component. Lower mean scores were found among those with FIES support, females, those suffering from sleepiness, headaches and lacking physical activity. Students in the fifth year of the course had the highest HRQOL mean scores.
Chowdhury R. et al Indian J. Public Health 2017 ⁹	20.95 (SD =1.97) years.	Undergraduate medical students	R. G. Kar Medical College, India	PSS-14 which comprised 14 questions with responses varying from 0 to 4 for each item. It scores from 0 to 56; 28 was taken as the operational cutoff value	July 2011–June 2012	A total of 480 students were approached in the study. A total of 460 students completely filled the questionnaires and they were included in the analysis.	Mean perceived stress score was 29.58 (SD = 6.60), and The mean score of perceived stress was highest in the 1st year and lowest in the 3rd year.
Syed A. et al Pak J Med Sci. 2018 ¹⁰	19.3 \pm 1.1 years	undergraduate physiotherapy students	Students were selected from various Institutes located in different cities of Sindh, Pakistan.	DASS (42 item scale) It is designed to judge the three main psychological domains namely Depression, Anxiety and Stress.	four months from September 5, 2016 to January 5, 2017	267 Around 201 (75.3%) students were female and 66 (24.7%) were male	The Frequency of depression, anxiety and stress found among undergraduates Physiotherapy students was 48.0%, 68.54% and 53.2%, respectively.
Biswas S. et al Journal of Psychiatry and allied science, 2019 ⁴	18 years and above	Undergraduate Medical students	Medical colleges in Telangana, India.	World Health Organization Quality of Life-BREF (WHOQOL-BREF) and the Short-Form Health Survey (SF-36) tools.	2018	349 students	On the WHOQOL-BREF, a higher score was reported for males on the psychological domain (P=0.032), while a higher score for female students on the social relationships domain was seen (P=0.006).

Gan GG. et al Med J Malaysia 2019 ¹¹	23 (range 22-24)	Medical students in their final two years	Public medical school in Malaysia.	Hospital Anxiety and Depression Scale (HADS). WHO QOL-BREF	May 2015 to August 2015	149 students	The prevalence rates of anxiety and depression were 33% and 11% respectively. Malay students had significantly more anxiety compared to the other ethnic groups, $P < 0.05$. Female students had significantly lower psychological score compared to male; 70.73 vs 66.32 ($P < 0.05$). Anxiety and depression were associated with significantly poorer QOL.
Qutub WN. et al. JCHM. 2019 ³	22.8 ± SD 1.4 years	Medical students	King Abdul-Aziz University (KAU), the largest public university in Jeddah, SA.	Self-administered questionnaire	Calendar year of 2019	387 medical students were enrolled in the study	The lifetime TTH was 43.9%, and the 1-year prevalence TTH was 28.9%, these included both frequent TTH 25% and infrequent TTH 73%. Only 2% suffered from chronic TTH.
Alkarrash MS. et al. BMJ Neurol Open 2021 ¹²	17.2y±2.7	medical, dental and pharmaceutical undergraduate students	Aleppo University, Syria	self-administered questionnaire	November to December 2020	2068 participants, 1604 (77.6%) were medical students, 205 (9.9%) were dental students and 259 (12.5%) were pharmaceutical students	The effect on daily activities was higher in chronic tension headache (96.7%) and migraine without aura (94.6%) than migraine with aura (91.3) and episodic tension headache (85.1%).
Jennifer M. et al J. Phys. Ther. Educ. 2021 ¹³	20- 30 years of age	Doctor of Physical therapy (DPT) students	Students enrolled in 238 DPT programs across the United States were eligible for inclusion.	Two self-report surveys were used: the DASS-42 and a demographic and mental health history survey	May 2018- June 2018	A total of 1,238 students completed both surveys.	DPT students were found to have higher DASS scores than their age-matched peers in Depression $t(1,227) = 2.91, P = .029$; Anxiety $t(1,227) = 7.33, P \# .005$; and Stress $t(1,227) = 10.76, P\#.005$. First-year students were found to have significantly higher levels of anxiety ($P = .001$) and stress

							(P = .019) as compared with third year students.
Ragab EA. et al. (MECPsych), 2021 ¹⁴	Students were evaluated according to study years, not according to age	undergraduate medical students	University of Gezira, University of Khartoum, Alzaiem Alazhari University, Sudan International University, Wad Medani College of Medical Science and Technology, and College of Igra for Science and Technology	Kessler 10 Psychological Distress instrument (K10)	January- April 2019	A total of 617 responded out of 7833 students of 6 medical colleges of medicine	The overall prevalence of stress was 31.7% ($p < 0.01$). The mean academic stress level scores were significantly higher in females (10.4) than males (9.3, $t = 4.092$, $P = 0.00005133$)
Thomas J. et al, J. Datta Meghe Inst. Med. Sci. Univ. 2021 ¹⁵	17 years to 24 years, maximum being 21 years (30%),	undergraduate medical students	Jawaharlal Nehru Medical College, Wardha, India	The SE-36 questionnaire and Beck's depression inventory	2017-2018	235 students	According to Beck's Depression Inventory, 23% (53) evaluated to have mild mood disturbances. Overall scores for all eight domains ranged between 78.2 and 60.2
Shrestha et al. Health Sci. Rep. 2022 ¹⁶	21.72 ± 1.601 years (mean ± SD).	undergraduate medical students	Kathmandu Valley	Headache Screening Questionnaire-English Version questionnaire based upon the ICHD-3 beta criteria.	October 22, 2021 to February 20, 2022	352 participants	Prevalence of migraine and TTH was found to be 15.3% (95% confidence interval [CI]: 11.7%–19.3%) and 40.3% (95% CI: 34.9–45.2), respectively

DISCUSSION

Depression has been associated with the highest morbidity rate, as well as anxiety and stress, in medical as well as paramedical students throughout the world, both in the past and in the present. As a result, it has piqued the researchers' interest.¹⁰ Several studies have revealed that most students of Confucian descent endure more pressure and stress since they see academic accomplishment as a filial responsibility and commitment to their families, which may have impacted their QOL.¹¹ Perfectionism may be one of the underlying causes of the increase in mental illness discovered in this study.¹³ Students who selected medical profession for the expected income or reputation and students who were directly involved in patient interaction as well as those with anxiety tendencies had a higher risk of depression. As a result, it is important for universities to take the initiative in identifying students who are at risk of acquiring psychological stress and introducing early assistance measures for these individuals.¹¹

Employed students experience 44% fewer headaches than jobless students (60.1%). This could be owing to the current economic condition. Employed students had a better financial situation, whereas a low economic situation worsens both migraine and TTH. Rural areas had a lower prevalence of TTH (13.7%) than urban areas (19.1%), which represents the effect of a stressful lifestyle in cities. Smokers are less likely to have TTH (10.5%) compared to non-smokers (19.8%); smokers believe that smoking decreases stress.¹²

The researches listed above have several limitations, such as the factor of response bias, the cross-sectional nature of the study, and the small sample size, and these shortcomings must be addressed in the future.

CONCLUSION

All these studies concluded that medical education is affecting the lives of students in one way or the other. Various factors may

be associated with this, including time constraints for social activities, heavy workload, and limited contact with family and friends. There is a significant paucity of studies addressing the severity of mental health disorders in physiotherapy students. Due to a variety of underlying pressures, physical therapy students are more likely to acquire mental health disorders. As there are numerous studies addressing either of the variables, i.e. psychological stress, tension type headache, or quality of life in undergraduate students or other medical students, no study includes all of these variables and postgraduate physiotherapy students who are competing with high clinical and theoretical demand. As a result, such studies are required in light of the privilege of this profession.

Declaration by Authors

Conflict of Interest: The authors declare no conflict of interest.

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- How to cite this article: Sameer, Meetu, Manju, Priti Singh. Prevalence of psychological stress, tension type headache and altered quality of life in medical students: a brief review. *International Journal of Science & Healthcare Research.* 2023; 8(3): 143-149.
DOI: <https://doi.org/10.52403/ijshr.20230322>
