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Perceived stress among medical and non-medical college students in the Erode district, Tamilnadu: Cross-sectional study

Dr.E.Krithiga[1*],Dr.Sasikala Gunasekaran[2] , Panneerselvam Periasamy[3]**

1. Dr.E.Krithiga, Assistant Professor, Department of Pathology, Government Erode Medical college, Perundurai, Erode, Tamilnadu. Email: elankiru@gmail.com
2. Dr.Sasikala Gunasekaran, Staff Nurse, Government Erode Medical College Hospital, Perundurai, Erode, Tamilnadu, India. Email: saipannsasi@gmail.com
3. Panneerselvam Periasamy, Assistant Professor, Department of Physiology, Government Erode Medical college, Perundurai, Erode, Tamilnadu. Email: pannphysio@gmail.com

*****Corresponding Author: Dr.E. Krithiga, Email: elankiru@gmail.com**

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Abstract

Introduction: The research aims to evaluate the levels of felt stress among college students in the Erode district, Tamilnadu, specifically focusing on both medical and non-medical students. **Methods:** A Cross-sectional study was carried out among first year students only in a district of Erode, spanning from 10th January 2022 to 25th January 2022. The study involved 926 participants, Mean age 18.95 years and standard deviation 0.994 years. After obtaining ethical approval the data collection was conducted through the utilisation of a self-administered questionnaire known as the Perceived Stress Scale (PSS). The data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 20 software. **Results:** Students have a mean stress score of 27.48 ± 7.36, and 54.96%. of 1st year college students experiencing moderate stress. None of them has a low stress score; 43.63% have a moderate stress score; and 56.37% have a severe stress score. Medical students (65.34%) significantly experience high stress ($p = 0.001$) compared to non-medical students (44.01%). **Conclusions:** Undergraduate students commonly experience a significant issue of high perceived stress. medical students are more susceptible to higher risks. components of stress, such as social and financial stress, were also claimed to contribute to academic stress and poor academic performance.

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Keywords: Perceived Stress, Medical students, Non-medical, college students, Erode district

Introduction:

Stress is a state that occurs when there is a discrepancy between our demands and our capacity to fulfil them, together with the resources and expectations imposed on us by our environment.The user's input is represented by the text [1]. A significant number of students encounter stress during their tenure at university. The reason might be ascribed to exposure to various stimuli. The variables include being apart from family support, having high personal expectations, feeling time constraints, dealing with academic overload, confronting exams and competitions, working to achieve educational objectives despite financial constraints, and missing recreational activities. The user's input is [2].

The prevalence rate of high perceived stress among college students varies greatly between various courses, mostly owing to differences in the severity of stressors present in the college environment, changes in measuring equipment, and variations in the institutions being investigated.The provided text is a list including the items [3-4]. Students attending health care institutions may have a greater vulnerability to stress in comparison to their peers at other universities. This may be linked to the heightened exposure to a greater load of academic, social, and economical challenges.[5-6]. An adequate level of stress may act as a catalyst for enhanced productivity and optimal performance. However, an excessive quantity that exceeds an individual's ability to handle might be harmful. It has the capacity to negatively impact both bodily and psychological well-being.The provided text is a list containing the number [7].

Stress among university students may also be associated with detrimental behaviours, such as smoking and drug use.The user's input is [8]. Furthermore, it is correlated with subpar academic achievement. The user's input is [9]. Previous studies indicate that stress had a crucial role in determining the quality of sleep [10]. Stress is a common reaction to the pressures of everyday life, and an excessive level of stress may have several detrimental effects on both physical and mental health. According to the 2019 survey performed by the American Psychological Association, more than 75% of participants reported experiencing symptoms of stress [11]. Stress is a common problem among college students [12] because of several causes such as academic challenges, pressure from parents, and changes in social interactions during this important period of transitioning from adolescence to early adulthood [13]. Stress may affect the neuroplasticity's structure, which involves the secretion of endocannabinoids and brain-derived neurotrophic factor (BDNF). This has the potential to lead to enhanced sleep quality

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and alleviation of insomnia symptoms, but it may also contribute to sleep deficiency. Research has shown that stress may have an impact on sleep patterns [14-16].

The objective of this research was to ascertain the prevalence of felt stress among first-year undergraduate students in the Erode District of Tamil Nadu, both in the medical and non-medical fields.

Methodology:

A cross-sectional survey was done among male and female undergraduate Medical students (Medial, Nursing , Physiotherapy) and Non-medical students Engineering and Art and Science students in a district of Erode. The survey included first year students only, and it took place from 10th January 2022 to 25th January 2022. The sample size was determined using the Epi Info tool version 7.2. The computation was conducted using an estimated prevalence of high felt stress among university undergraduates at 33.8%,[3] a confidence level of 95%, and a desired margin of error of 3%. There were a total of 926 undergraduate students in the sample.

We chose the study participants using a simple random selection technique. We randomly selected students from each college. Students currently enrolled in the college and studying at the Erode district campus during the survey met the inclusion criteria. The exclusion criteria encompassed individuals who expressed a lack of willingness to engage in the study.

We personally gave the participants a self-administered questionnaire through Google Form. The questionnaire consists of the following components: a) Personal data, such as age, sex, and family income; b) Academic data, which include academic level, name of college, course, and year of study; c) The Perceived Stress Scale (PSS).

We obtained formal authorizations from the relevant authorities of the targeted colleges to conduct the study in the specified location prior to data collection. We informed the participants about the study's aims and assured them of data anonymity and confidentiality. Voluntary participation was required for the study. The authors affirm that the study adhered to the ethical guidelines established by the appropriate national and institutional bodies for human research. The Institutional Ethical Committee also authorized the project. Participants provided informed consent. All unfinished questionnaires were discarded.

We used the Statistical Package for the Social Sciences (SPSS) version 22 software to input, verify, and analyze the data. Cohen et al. [10] established the methodology for categorizing

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PSS into low, moderate, and high PSS. The study utilized 95% confidence intervals (95% CIs) to determine the important components linked to stress in college students. We established the threshold for statistical significance at a p-value of less than 0.05.

Results:

In our study 926 Participants. The mean age of was 18.95 ± 0.994 years. 59.83 % students are medical students and 43.95% are non medical students (table 1).

TABLE 1: DEMOGRAPHIC PROFILE

Demographic variables		Number of students	%
Sex	Female	519	56.05%
	Male	407	43.95%
groups	Medical	554	59.83%
	Non-Medical	372	40.17%
year of study	1st Year	926	100.00%
Type of family	Joint	167	18.03%
	Nuclear	759	81.97%
Residence	Rural	369	39.85%
	Urban	557	60.15%
SES	Lower (<13,161)	324	34.99%
	Lower Middle Class (19,759 - 26,354)	17	1.84%
	Upper Class (>52,734)	180	19.44%
	Upper Lower (13,161 - 19,758)	242	26.13%
	Upper Middle Class (26,355 - 52,733)	163	17.60%

In table 1 The demographic profile of the students reveals a predominance of females, comprising 56.05% of the total 926 students, while males make up 43.95%. The majority of students are from medical backgrounds, accounting for 59.83%, with the remaining 40.17% from non-medical fields. All students are in their first year of study. Most students live in nuclear families (81.97%), with only 18.03% in joint families. Regarding residence, 60.15% are urban dwellers, while 39.85% come from rural areas. Socioeconomic status (SES) varies, with 34.99% in the lower class, 26.13% in the upper lower class, 1.84% in the lower middle class, 17.60% in the upper middle class, and 19.44% in the upper class.

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Table 2: LEVEL OF STRESS SCORE

sno	statements	0		1		2		3		4	
		n	%	n	%	n	%	n	%	n	%
1.	1. In the last month, how often have you been upset because of something that happened unexpectedly?	0	0.00%	26	2.81%	307	33.15%	440	47.52%	153	16.52%
2.	2. In the last month, how often have you felt that you were unable tocontrol the important things in your life?	0	0.00%	96	10.37%	229	24.73%	341	36.83%	260	28.08%
3.	3. In the last month, how often have you felt nervous and "stressed"?	0	0.00%	66	7.13%	281	30.35%	209	22.57%	370	39.96%
4.	4. In the last month, how often have you felt confident about yourability to handle your personal problems?	0	0.00%	0	0.00%	549	59.29%	359	38.77%	18	1.94%
5.	5. In the last month, how often have you felt that things were goingyour way?	0	0.00%	0	0.00%	658	71.06%	254	27.43%	14	1.51%
6.	6. In the last month, how often have you found that you could not cope with all the things that you had to do?	35	3.78%	100	10.80%	89	9.61%	360	38.88%	342	36.93%
7.	7. In the last month, how often have you been able to control irritations in your life?	0	0.00%	0	0.00%	508	54.86%	402	43.41%	16	1.73%
8.	8. In the last month, how often have you felt that you were on top ofthings?	0	0.00%	0	0.00%	595	64.25%	320	34.56%	11	1.19%
9.	9. In the last month, how often have you been angered because ofthings that were outside of your control?	0	0.00%	59	6.37%	221	23.87%	241	26.03%	405	43.74%
10.	10. In the last month, how often have you felt difficulties were piling upso high that you could not overcome them?	0	0.00%	95	10.26%	196	21.17%	200	21.60%	435	46.98%

The table 2 shows stress levels among students show that many often felt upset due to unexpected events (47.52%) and struggled to control important life aspects (36.83%). They

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frequently felt nervous and stressed (39.96%) but generally felt confident in handling personal problems (59.29%). A majority felt things were going their way (71.06%), though 36.93% had difficulty coping with responsibilities. Most students could control irritations (54.86%) and felt on top of things (64.25%), but anger due to uncontrollable factors was common (43.74%), and many felt overwhelmed by difficulties (46.98%).

Table 3: LEVEL OF STRESS SCORE

Level of score	No. of students	%
Low	0	0.00%
Moderate	404	43.63%
High	522	56.37%
Total	926	100.00%

The table 3 shows that out of 926 students, none reported low stress levels. A significant portion, 43.63%, experienced moderate stress, while the majority, 56.37%, experienced high stress levels. The generalization of mental wellbeing score among among destitute women. They are having 27.48 mean stress score and 7.36 standard deviation. The percentage of stress score is 54.96% Generalization of stress score was calculated using mean with 95% CI and proportion with 95% CI.

Table 4: Comparing stress score between medical and non-medical students

Demographic variables		Level of stress score						n	Chi square test
		Low		Moderate		High			
		n	%	n	%	n	%		
groups	Medical	0	0.00%	192	34.66%	362	65.34%	554	$\chi 2=45.13$ $\pi=0.001$***(Σ)
	Non-Medical	0	0.00%	212	56.99%	160	43.01%	372	

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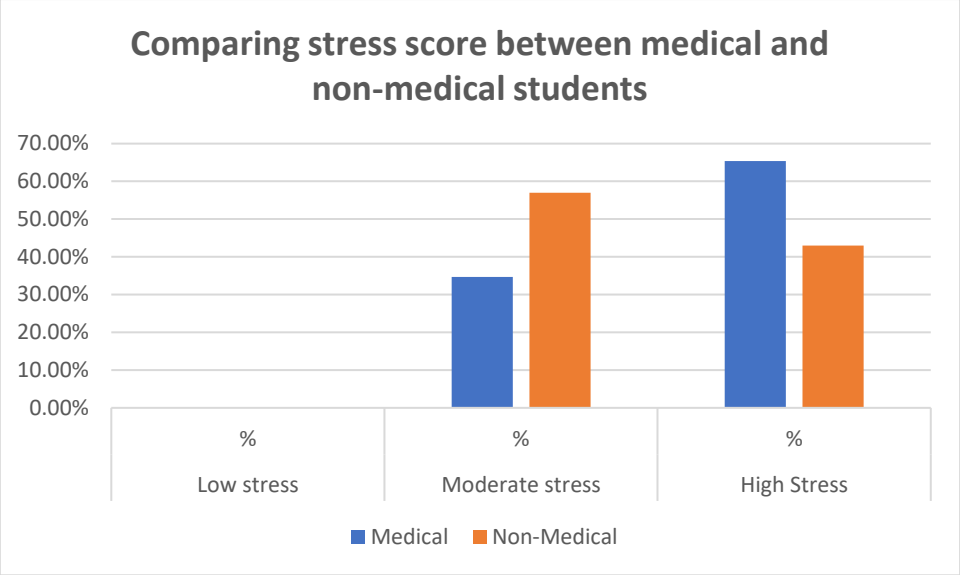

Figure 1: Comparing stress score between medical and non-medical students

The table 4 & Figure 1 shows The table presents the distribution of stress levels among medical and non-medical students and includes a Chi-square test to assess the statistical significance of differences between the two groups.

Among medical students (n=554), none reported low stress levels. A total of 192 medical students (34.66%) experienced moderate stress, while the majority, 362 students (65.34%), experienced high stress.

For non-medical students (n=372), similarly, no students reported low stress levels. However, 212 non-medical students (56.99%) experienced moderate stress, and 160 students (43.01%) experienced high stress.

The Chi-square test yielded a value of $\chi^2 = 45.13$ with a p-value of 0.001, indicating a highly significant difference ($p < 0.001$) in the stress levels between medical and non-medical students. This suggests that medical students are more likely to experience high stress compared to their non-medical counterparts.

Discussion:

In this research, it was found that 50% of the students reported a moderate degree of stress. Additionally, it was noted that medical students (65.34%) suffer considerably higher levels of stress compared to non-medical students (44.01%). The results of our research were in line with the findings seen among university students in India (19.2),[17] Nigeria (19.6),[18], and

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Iran (20.04)[19]. The average score was much lower in comparison to the values documented at colleges situated in other regions of Saudi Arabia, such as Jeddah (28.5)[20] and Riyadh (27.0)[21]. The rate is markedly lower in comparison to the stated rate in Malaysia, which stands at 27.5.The user's text is "[22]." The wide spectrum of stress levels may be ascribed to differences in stress research methodology across various groups, as well as discrepancies in the magnitude of individual, family, academic, financial, and university environmental stressors.The user's text is "[22]."

Multiple research have consistently shown a correlation between elevated levels of perceived stress and students' impression of inadequate family income. Alsaleem et al. (2021) emphasized the correlation between lower family income levels and increased levels of felt stress among students[23]. This assertion is furthermore corroborated by Torun and Torun (2020), who discovered that students from households with lower monthly earnings saw heightened levels of worry and tension, especially in the midst of the COVID-19 pandemic[24]. Furthermore, Kêdoté et al. (2022) highlighted that inadequate income might result in increased stress as a result of the inability to fulfill fundamental necessities, such as food and shelter, hence adding to overall stress levels[25].

Moreover, the influence of household wealth on levels of stress goes beyond only students. Phomprasith et al. (2022) observed a noteworthy correlation between depression and the perception of inadequate income among medical students[26]. Furthermore, the influence of parents' psychological effects, such as stress-related behaviors, was influenced by the level of family income, with more pronounced connections seen in households with lower incomes (Kerr et al., 2021)[27].

These results align with the wider body of evidence on the correlation between income and stress. Mehta et al. (2020) established a correlation between lower income levels and increased levels of perceived stress and maladaptive coping strategies. In addition, families that are dealing with financial difficulties may suffer increased levels of stress as a result of financial limitations, which may affect their capacity to offer necessary resources for their children[28].

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DATA AVAILABILITY:

All datasets generated or analyzed during this study are included in the manuscript.

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Institutional Ethical Committee Approval

The paper is a review article so no ethical approval is required.

Informed Consent

Not applicable.

Use of Artificial Intelligence:

The author has taken the assistance of Grammarly and Google gemini for better readability and language improvement, but have rechecked the contents for their authenticity and take the full responsibility.

Authors' contributions:

All author equally contributed for concept, data collection, writing manuscript, review and publication

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