



A CROSS SECTIONAL STUDY OF PERCEIVED STRESS AMONG FEMALE UNDERGRADUATE STUDENTS OF AN EDUCATIONAL INSTITUTE IN SOUTH INDIA

Siva Ilango T	Associate Professor, Department of Psychiatry, Karpaga Vinayaga Institute of Medical Sciences, Maduranthagam
Arumuganathan S*	Assistant Professor, Department of Psychiatry, Karpaga Vinayaga Institute of Medical Sciences, Madhuranthagam *Corresponding Author
Sanjana Bhagavathy V M	Department of Psychiatry, Karpaga Vinayaga Institute of Medical Sciences, Madhuranthagam
Usaid S	Department of Psychiatry, Karpaga Vinayaga Institute of Medical Sciences, Madhuranthagam
Sumithra Devi S	Department of Psychiatry, Karpaga Vinayaga Institute of Medical Sciences, Madhuranthagam
Sethumadhavan V	Department of Psychiatry, Karpaga Vinayaga Institute of Medical Sciences, Madhuranthagam

ABSTRACT **Background:** Students pursuing professional courses experience stress more than their counterparts. Increase in levels of stress has significant impact on academic performance which further increase the stress levels thus becoming a vicious cycle and has serious impact on one's physical and mental health. This study aims to assess the levels of perceived stress among female undergraduate students pursuing health professional courses.

Methodology: Study participants were recruited among the students attending Women's day programme conducted at Karpaga Vinayaga Institute of Medical Sciences. Semi structured proforma and perceived stress scale were given to measure the levels of stress. Eighty four students consented and completed the questionnaire

Results: Mean age of the study participants is 20.08 years. Mean score of perceived stress in Medical, Dental and Nursing is 18.96, 22.96, 19.63 respectively. Difference in stress level was significant in Dental College Undergraduates when compared with Medical Undergraduates (p value-0.016) and Nursing Undergraduates (p value-0.042). In Nursing undergraduates significant difference observed between 2nd and 3rd year (p value=0.003) and between 1st and 3rd year (p value=0.002).

Conclusion: Majority of the students perceived moderate amount of stress during their undergraduate education. The stress level was found to be higher among Dental Undergraduates when compared to Medical and Nursing Undergraduates. In Nursing undergraduates, differences in stress levels were significantly observed between 2nd year and 3rd year and between 1st year and 3rd year.

KEYWORDS : Perceived stress, Undergraduates, Professional courses

INTRODUCTION

Everyone experience stress at some point during their lifetime. Stress is defined as 'a state of physiological and psychological imbalance that results when there is disparity between situational demand and an individual's ability to meet the needs'. Students pursuing professional courses are not exempt from experiencing stress, in fact they experience more than their other counterparts^{2,3}. Studies from both developed and developing countries has reported significant stress among medical and allied health sciences students. Medical school is recognized as a stressful environment that may have a negative effect on students' academic performance, physical health, and psychosocial well-being^{4,6}.

Stress not only affects an individual's physical and psychological health but also lower one's academic performance. Poor academic performance further increases the level of stress thus becoming a vicious cycle. There are different types of stressors faced by the students' community including family, financial, relationship, social and most importantly academic aspects⁷.

Persistent unresolved stress can be a risk factor for development of anxiety, depression and substance abuse. In some individuals the stress can aggravate negative thoughts and make a person vulnerable to make suicidal gesture, attempt or commit suicide. Studies have reported increased level of stress, anxiety and depression among women⁸. Though stress and related issues are widely prevalent among students it's still under recognized and under treated due to the stigma of accessing help with mental health professional.

The authors got interested to study the prevalence of stress among medical, dental and nursing students of an Educational Group after couple of students presented to casualty with suicidal attempts in relation to academic and relationship related stressors. This educational institution is situated in Maduranthagam taluk, Kancheepuram district and it offers Medical, Dental, Nursing and Engineering courses.

OBJECTIVES

The objectives of the study were, 1) to assess the prevalence of stress among female students pursuing professional courses 2) to evaluate the difference in the level of stress among students pursuing different professional courses. 3) to correlate the year of study and level of stress.

MATERIALS AND METHODS

The study was designed as descriptive cross-sectional study. It is a convenience sample and the data was collected from the female students who attended Women's day celebration at Karpaga Vinayaga Institute of Medical Sciences. Hundred undergraduate female students from Medical, Dental and Nursing colleges of Karpaga Vinayaga Educational Group attending the Women's day celebration programme were included in the study. Informed consent was obtained from the study participants.

The consented subjects completed a semi structured proforma with their demographic profile and the self-administered Perceived Stress Scale. The Perceived Stress Scale (PSS) is the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes a number of direct queries about current levels of experienced stress. The PSS was designed for use in community samples with at least a junior high school education. The items are easy to understand, and the response alternatives are simple to grasp. Moreover, the questions are of a general nature and hence are relatively free of content specific to any subpopulation group. The questions in the PSS ask about feelings and thoughts during the last month. In each case, respondents are asked how often they felt a certain way.

The collected data was analysed using Descriptive statistics including frequency, percentage, mean and standard Deviation. Inferential

statistics was analysed using Independent t test and Paired t test.

RESULTS

84 out of 100 students consented and completed the self-report questionnaire and were included in the study. Mean age of the study participants is 20.08 years. Among the respondents 25 participants were from medical, 29 participants were from dental and the rest 30 students were from nursing college. Among the respondents the mean total perceived stress score (PSS) was 20.5(5.4). Mean PSS score of 18.9(5.2) in medical, 22.9(6.1) in dental and 19.6(4.0) in nursing undergraduates was found. The number of students in first year, second, third and fourth year were 18, 11, 22, and 29 respectively.

Table 1. Perceived stress scores of female undergraduate students of different professional courses

College	Sample	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Medical	25	18.96	5.22	1.04	16.81	21.11	7.00	30.00
Dental	29	22.97	6.18	1.15	20.61	25.32	8.00	36.00
Nursing	30	19.63	4.02	.73	18.13	21.13	13.00	31.00
Total	84	20.58	5.43	.59	19.40	21.76	7.00	36.00

While most of the students falling in moderate stress category, dental students perceived higher amount of stress. 72 % of medical, 59 % of dental and 90 % of nursing perceived moderate stress.

Table 2. Severity of stress levels among the female undergraduate students of different professional courses

College	Sample (n)	Perceived stress Levels	Frequency	Percent	Mean	Standard Deviation
Medical	25	Low	6	24	11.67	2.34
		Moderate	18	72	20.78	2.71
		High	1	4	30	-
Dental	29	Low	2	6.9	9.5	2.12.
		Moderate	17	58.6	21	3.54
		High	10	34.5	29	2.83
Nursing	30	Low	2	6.7	13	-
		Moderate	27	90	19.7	3.11
		High	1	3.3	31	-

Difference in stress level was significant in Dental College Undergraduates when compared with Medical Undergraduates (p value- 0.016) and when compared to Nursing Undergraduates (p value-0.042).

Table 3. Comparison of students Perceived Stress Scores within different professional courses

College	College	Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Medical	Dental	-4.00*	1.42	.02	-7.39	-.62
	Nursing	-.67	1.41	.88	-4.04	2.69
Dental	Medical	4.00*	1.42	.02	.62	7.39
	Nursing	3.33*	1.35	.04	.099	6.57
Nursing	Medical	.67	1.41	.88	-2.69	4.04
	Dental	-3.33*	1.35	.04	-6.57	-.10

*. The mean difference is significant at the 0.05 level.

Across different years in professional colleges, higher stress was perceived among third year dental students (64.7), in fourth year of medical students (83.3) and in first year of nursing students (59.3).

Table 4. Perceived stress scores of students across different years in professional courses

College	Year	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Medical	2	1	24.00	24.00	24.00
	3	2	18.00	8.49	6.00	-58.24	94.24	12.00	24.00
	4	20	19.00	5.20	1.16	16.57	21.43	7.00	30.00
	5	2	17.00	5.66	4.00	-33.82	67.82	13.00	21.00
	Total	25	18.96	5.22	1.04	16.81	21.11	7.00	30.00
Dental	2	5	26.60	1.67	.75	24.52	28.68	24.00	28.00
	3	15	22.80	5.98	1.54	19.49	26.11	15.00	36.00

	4	7	21.28	6.63	2.50	15.16	27.41	8.00	27.00
	5	2	21.00	14.14	10.00	-106.06	148.06	11.00	31.00
	Total	29	22.97	6.18	1.15	20.61	25.32	8.00	36.00
Nursing	1	18	18.56	2.85	.67	17.14	19.97	13.00	22.00
	2	5	17.40	1.52	.68	15.52	19.28	16.00	19.00
	3	5	25.20	4.09	1.83	20.13	30.27	20.00	31.00
	4	2	21.00	7.07	5.00	-42.53	84.53	16.00	26.00
	Total	30	19.63	4.02	.73	18.13	21.13	13.00	31.00

In Nursing students age is positively correlated with PSS score $r=0.386(p \text{ value}=0.035)$. In Nursing undergraduates significant difference observed between 2nd year and 3rd year ($p \text{ value}=0.003$) and between 1st and 3rd year ($p \text{ value}=0.002$). Post hoc analysis shows third year students of nursing were more stressed compared to first and second year.

Table 5. Comparison of perceived stress scores between different years using ANOVA

College		Sum of Squares	df	Mean Square	F	Sig.
Medical	Between Groups	34.96	3	11.65	.40	.76
	Within Groups	618.00	21	29.43		
	Total	652.96	24			
Dental	Between Groups	93.94	3	31.31	.80	.50
	Within Groups	975.03	25	39.00		
	Total	1068.97	28			
Nursing	Between Groups	204.52	3	68.17	6.70	.00
	Within Groups	264.44	26	10.17		
	Total	468.97	29			

DISCUSSION

The perceived stress score of 20.5 found in this study was similar to that of the PSS in studies conducted in Bangalore and Malaysia'. The academic factors like frequency of examinations, performance in examinations, academic curriculum, lack of time for recreation, competition with peers, becoming a health professional, and performance in practical cause stress in undergraduates. Shah et al suggested that the most significant stressors affecting medical undergraduates included high parental expectations, frequency of examinations, sleeping difficulties, loneliness, performance in examinations and becoming a doctor¹⁰.

Epidemiological studies demonstrated that dental students experience considerable stress during their training and they are more anxious than the general population. Dental students have identified the development of stress due to many assignments, competition with other students, poor relationship with other students and teachers, anxious patients, fear of failure, complicated treatments and possible conflicts with patients, and limited time to perform and finish the planned treatment¹¹. Most important source of stress among dental students was the academic component of the course, especially in regard to examinations, grading and workload. Also working on patients with poor oral hygiene was considered a stress factor.

When compared to all years, 3rd-year students were less confident and had difficulty in treating child patients analogous to the study done by Ahmad et al and Tangade et al which stated that 3rd-year students faced difficulty in learning clinical procedures both theoretically and practically¹². For female students, some of the factors of stress have been reported to be clinical factors, lack of confidence, and postponement of marriage. Female students also find it more difficult to deal with patient aggression and this may contribute to more reported stress¹³.

The strengths of the study include assessment of stress levels from students of varied health courses and that the results could be generalized to similar student population. The limitations of the study include small sample size and respondent bias. The information collected during a celebration when the overall mood of the participants could affect the responses.

CONCLUSION

Medical education brings stress in the life of the female undergraduate students. Majority of the students perceive moderate amount of stress during their undergraduate education. This stress can affect their mental health and physical health. The stress is mainly related to the academic, psychological and social domains. It is advisable for promotion of periodic monitoring of the students mental and physical

health and addressing their needs appropriately. This study emphasizes the importance of imparting skills of effective stress management techniques to female medical students.

Declaration of Interest: None

Funding & Sponsorship: Nil

REFERENCES

1. Roberts LW, Warner TD, Carter D, Frank E, Ganzini L, Lyketsos C, et al. Caring for medical students as patients: Access to services and care-seeking practices of 1,027 students at nine medical schools. Collaborative research group on medical student healthcare. *Acad Med* 2000;75:272-7.
2. Radcliffe C, Lester H. Perceived stress during undergraduate medical training: A qualitative study. *Med Educ* 2003;37:32-8.
3. Firth J. Levels and sources of stress in medical students. *Br Med J (Clin Res Ed)* 1986;292:1177-80.
4. Yusoff MS, Abdul Rahim AF, Yaacob MJ. Prevalence and sources of stress among Universiti Sains Malaysia Medical students. *Malays J Med Sci* 2010;17:30-7.
5. Shaikh BT, Kahloon A, Kazmi M, Khalid H, Nawaz K, Khan N, et al. Students, stress and coping strategies: A case of Pakistani medical school. *Educ Health (Abingdon)* 2004;17:346-53.
6. Saipanish R. Stress among medical students in a thai medical school. *Med Teach* 2003;25:502-6.
7. Panchu P, Bahuleyan B, Vijayan V. An analysis of the factors leading to stress in Indian medical students. *Int J Clin Exp Physiol* 2017;4:48-50.
8. Abraham R, Mahirah Binti Zulkifli E, Soh E, Fan Z, Ning Xin G, Tan J, et al. A Report on Stress among First Year Students in an Indian Medical School; 2017.
9. Iqbal S, Gupta S, Venkatarao E. Stress, anxiety and depression among medical undergraduate students and their socio-demographic correlates. *Indian J Med Res* 2015;141:354-7.
10. Anuradha R, Dutta R, Raja JD, Sivaprakasam P, Patil AB. Stress and stressors among medical undergraduate students: A cross-sectional study in a private medical college in Tamil Nadu. *Indian J Community Med* 2017;42:222-5.
11. Nandi M, Hazra A, Sarkar S, Mondal R, Ghosal MK. Stress and its risk factors in medical students: An observational study from a medical college in India. *Indian J Med Sci* 2012;66:1-2.
12. Supe AN. A study of stress in medical students at seth G.S. medical college. *J Postgrad Med* 1998;44:1-6.
13. Kumar GS, Jain A, Hegde S. Prevalence of depression and its associated factors using beck depression inventory among students of a medical college in Karnataka. *Indian J Psychiatry* 2012;54:223-6.