



Stress Among Post Graduate Medical Students in Central India: A Cross Section Study Using Perceived Stress Scale

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ABSTRACT

Background:- With progressive globalization and rising competition stress has become an increasingly important occupational problem. Stress may affect student's academic performance and student's physical and mental health.

Objective:- To find the stress level among post-graduate (PG) students and there ways to cope with it. Methodology:-

Present cross-sectional study was conducted in a tertiary care institute of central India among 75 PG students. They were assessed for the level of stress using Perceived stress scale. Results:- Large number of students (58.6%) were suffering from stress mostly from in their first academic year. Males were more in number than females 1.4:1. They were adopting differed methods to cope with stress, most were healthy habits. Conclusion:- Most of the Post graduate students were under stress mainly in the first year. Stress among these highly educated health professionals cannot be ignored as it may lead to health issues. Mostly stressed students were adopting healthy way to cope with stress.

KEYWORDS : Medical, Post-graduate, Perceived stress scale, Students, stress

Introduction

Stress is defined as "a state of affair involving demands on physical or mental energy."¹ Stress is a normal physical response to events that make us feel threatened or upset our balance in some way. The stress response is the body's way of protecting us. When working properly, it helps us stay focused, energetic, and alert. Stress is an instinctive form of self-preservation, but it was never meant for long term use. Long-term exposure to stress can lead to serious health problems. Chronic stress disrupts nearly every system in your body. It can raise blood pressure, suppress the immune system, increase the risk of heart attack and stroke, contribute to infertility, and speed up the aging process.²

Medical education is a stressful endeavor. Studies done on undergraduate students suggested that mental health worsens after students begin medical school and remain poor throughout the training.³ The majority of studies on stress in medical education focus on the documentation of stress and information on the correlates of stress.^{4,5} The stress is further increased during the residency training as a result of increased expectations and responsibilities because residents are expected to be proficient clinicians, educators, researchers and administrators at the end of their training. Sleep deprivation has also been shown to predispose residents to medical errors, injuries, increased alcohol and drug use and increased conflict with other health care staff. Suicide among residents has equally been reported as a result of increased stress. It is to be noted here that PG residents are of age group 20to30 while stress is a major health problem of middle age i.e. 35to50 These myriads of problems, consequent upon stress have necessitated programs in some developed countries towards alleviating stress in residency training.

Some of the recognized possible causes of stress (stressors) in residency training include: time pressure (not enough time), own physical health problem or condition, own emotional or mental health problems or condition, financial difficulty, poor work condition, caring for own family at the same time caring for others, sleep deprivation, employment status, frequent examinations, high patient load, distant

accommodation and lack of recreational facilities within the hospital premises. Because residents are a unique group of doctors responsible for the care of other people, it is worthwhile to study perceived stress among this group of doctors, find out how they cope with it and suggest better methods of coping and ameliorating stress among residents.

Material and methods

The present cross-sectional study was done in a tertiary care institute in central India during June 2013 to Aug 2013. The permission from institutional ethical committee was sought. The inclusion criteria include PG resident doctors of all years working in clinical department and consenting to participate, while the exclusion criteria was those experiencing stress related physical symptoms before registration. So, finally 75(76.8%) study subject were included. Written informed consent was taken from the participants. The responses of the subjects on the questionnaires & their derived stress levels were kept absolutely confidential. We also determined subjective evaluation of the stressfulness of life in resident doctors with the help of a scientific "mini 4 questioned perceived stress scale" developed by S. Cohan and G. Williamson (1988).⁶ Mini PSS scores vary from 0 to 16; 0 to 5: no stress perceived; 6 to 8: mild stress perceived; 9 and above: clearly perceives their life as stressful. Various common coping strategies employed by PG resident doctors against stress were also studied. Lastly addiction to tea/coffee, alcohol and smoking was asked.

Statistical analysis:- The data collected will be entered in Microsoft excel 2007, 10% of the data will be re-entered by another person to check for the data entry errors. The data will be analyzed using Epi-info software. The quantitative data will be summarized as mean and standard deviation, while qualitative data as percentage and proportion. To show the association and difference between two independent categorical variables chi-square test. We will consider the statistical test to be significant when the P-value is less than 0.05.

Result

There were total 75 study subject were included in the study, the av-

erage age was 26.25 yrs (SD=9.6). There were total 48 male and 27 females. **Table no. 1** shows the perceived stress scale results. PSS scores indicated that more than half subjects (58.6%) are subjected to stress; out of these 17.3% clearly perceive their life stressful. 45.8% Males while 33.3% Females are under mild stress (1.4:1). For clear perception of stress, this ratio is changed- 16.7% Male and 18.5% Female (0.9:1). 69.4% PG 1st year are stressed which is much more than overall prevalence (58%). The stress gradually decreases in 2nd and 3rd year PGs, 52% and 42.9% respectively. PGs of 'Department of Orthopedics' (avg. PSS Score 9.33) and 'Department of Surgery' (avg. PSS Score 7.43) perceive highest level of stress. Many of subjects complained that the questions of PSS were confusing and time consuming for them. Hence there are chances of misinterpretation. **Table no. 2** It appears that resident doctors are coping against stress without indulging in bad habits. Most of them (81.4%) talk to others to cope against stress. Music, exercise, sleep are frequently tried. No Female PG is taking alcohol or smoke while only around 25% Male do so. However, response to this question might not be answered honestly.

Discussion

Although it is difficult to define accurately, stress appears to be an unavoidable and common aspect of a doctor's work. The problem has however been difficult to study because individual responses to stressful situations vary and certain people are more likely than others to perceive high levels of stress in their jobs.

There are many different aspects of stress, including (1) actual environmental experiences, (2) subjective evaluations of the stressfulness of a situation, and (3) the affective, behavioral, or biological responses to environmental experiences or their subjective evaluations. The Perceived Stress Scale (PSS) measures subjective evaluations of the stressfulness of a situation. A short 4 item scale can be made from questions 2, 4, 5 and 10 of the PSS 10 item scale. Scores can range from 0 to 16, with higher scores indicating greater stress. The PSS is not a diagnostic instrument, so there are no cut-offs. There are only comparisons between people in a given sample. We set criteria of evaluating the PSS scores with the help of normative data on the PSS based on a 1983 Harris Poll of a representative U.S. sample.⁷ This data is 27 year old. Also it does not represent the population under study. But still it helped us to extract some rigid conclusions. PSS scores indicated that more than half subjects (58.6%) are subjected to stress; out of these 17.3% clearly perceive their life stressful. However there are very less Indian studies conducted on the present subject but a similar study on medical and dental students conducted by Sharma B et al in Haryana reported that only 14% of the students had no stress while rest were suffering from mild to sever stress.⁸ This is in concordance with present study. Other foreign studies on medical students reported stress among students ranging from 31% to 63%.⁹⁻¹¹ In present study, most of the PG students were adopting healthy ways of coping with the stress, however looking at the sensitiveness of the questions responses can be biased. Only 51.8% female PGs are taking tea or coffee. Male PGs dare to answer honestly. Around 64.6% take tea/coffee; 23% smoke; 40% drink. But still these data do not match that gathered from other studies.^{7,12,13,14}

Stress in medical students can have various ramifications in there ethical and professional conduct. This can also lead to substance abuse, broken relationships and suicidal attempts. Student distress may influence professional development and adversely impact academic performance and may play a role in attrition from medical school.¹⁵ Other studies on medical school graduates also suggest that distress may negatively affect quality of patient care, patient safety¹⁶, and professionalism.¹⁷ 'Healthy' medical students are likely to become healthy doctors. Thus it is the responsibility of medical school and by society in general to look in to the various stress generating factors and undertake remedial measures. Some of the measures may include by reducing the work load, night duty should not be more than two days a week and that too not on two consecutive days. Duty must not exceed 8 working hours a day and 6 days a week. Proper vacations should be provided on yearly basis. Examinations, seminars, project work etc. should be scheduled and informed at the beginning of year; sufficient preparation leave should be provided. Counseling and recreational activities should be provided. However some measures should also be initiated from the student's end, some suggestions like doing regular exercise, planning daily activity, strengthening your relationships, following relaxation techniques such as music,

deep breath, meditation, yoga etc. and quitting bad habits like smoking and drinking.

It is recommended that results of this assessment should not be used in isolation but rather in combination with other factors of stress such as sickness or psychological problem or substance abuse. Thus during Post-graduate study stress may creep in and which may hamper efficient teaching and learning ability. Hence such issues need to be addressed at every level.

Conclusion

Most of the Post graduate students were under stress mainly in the first year. Stress among these highly educated health professionals cannot be ignored as it may lead to health issues. Mostly stressed students were adopting healthy way to cope with stress.

Table no. 1 shows Perceived stress scale by study subjects

Variable	no stress	mild stress	clearly stressful
Male (48)	18 (37.5%)	22 (45.8%)	8 (16.7%)
Female (27)	13 (48.1%)	9 (33.3%)	5 (18.5%)
PG 1st yr (36)	11 (30.6%)	14 (38.9%)	11 (30.6%)
PG 2nd yr (25)	12 (48%)	11 (44%)	2 (8%)
PG 3rd yr (14)	8 (57.1%)	6 (42.9%)	0 (0%)

Table no. 2 coping Strategies by the students

Variables	Male (48)					Female (27)						
	Total	Stress(30)		no stress(18)		P-value	Total	Stress (14)		no stress(13)		P-value
		No.	%	No.	%			No.	%	No.	%	
Exercise	16	8	26.7	8	44.4	0.34	7	4	28.6	3	23.1	0.909
Talk to others	39	24	80.0	15	83.3	0.94	22	14	100.0	8	61.5	0.03*
Listen music	36	25	83.3	11	61.1	0.168	20	13	92.9	7	53.8	0.061
Sleep	24	16	53.3	8	44.4	0.76	19	13	92.9	6	46.2	0.02*
Eat	10	6	20.0	5	27.8	0.79	4	2	14.3	2	15.4	0.644
Not eat/diet	0	0	0.0	0	0.0	1	0	0	0.0	0	0.0	1
Hobby/project	12	3	10.0	9	50.0	0.006*	6	1	7.1	5	38.5	0.136
Work	9	2	6.7	7	38.9	0.017*	6	1	7.1	5	38.5	0.136
Read	6	2	6.7	4	22.2	0.26	5	2	14.3	3	23.1	0.927
Alcohol	12	9	30.0	3	16.7	0.49	0	0	0.0	0	0.0	1
Smoke	13	11	36.7	2	11.1	0.11	0	0	0.0	0	0.0	1
Pre-scribed drugs	3	2	6.7	1	5.6	0.644	0	0	0.0	0	0.0	1
Illicit drugs	0	0	0.0	0	0.0	1	0	0	0.0	0	0.0	1

* Significant on application of chi-square test.

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