



STRESS AMONG DOCTORS DOING RESIDENCY: A CROSS-SECTIONAL STUDY AT A TERTIARY CARE HOSPITAL IN THE CITY OF MUMBAI

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ABSTRACT

Background: The workload of a tertiary care teaching hospital in a metropolitan city is tremendous. Resident doctors in these health care facilities bear the over whelming burden. This study was carried out to assess the stress among resident doctors and the factors associated with it.

Methods: This was a cross sectional study carried out on resident doctors in a tertiary care hospital in the city of Mumbai. Statistical analysis was done using proportions and chi square.

Results: Stress is experienced by 37.3 percent of the study participants. Stress among residents is significantly associated clinical branch, first year of post-graduation, sleep deprivation, fatigue and dyspepsia.

Conclusion: Residents are suffering from stress during the period of Residency. Policies which can reduce risk and stress in resident doctors is the need of the hour.

Key words: Resident doctors, stress, tertiary care, Perceived stress scale

INTRODUCTION

The modern medical workplace is a complex environment, and doctors respond differently to it, some finding it stimulating and exciting, whereas others become stressed and burned out from the heavy workload. The medical workplace also provides an environment where new skills are continually being learned, both as a result of medical knowledge evolving and because a doc-

tor's work changes, in part due to career development and progression through different jobs.

This study was conducted in a teaching tertiary care hospital and college run by the Brihan mumbai Municipal Corporation. With about 390 staff physicians and 550 resident doctors, the 1800 bedded hospital treats about 1.8 million out-patients and 85,000 in-patients annually and provides both basic care and advanced treatment facilities in all fields of medicine and sur-

gery.¹The workload of such a tertiary care teaching hospital in a metropolitan city is tremendous. Resident doctors are the backbone of this entire and obviously overloaded system. Those in clinical departments have to work round the clock 24*7. These doctors are constantly treating patients of varying severity and clinical presentation. As a result they are at a risk of acquiring various nosocomial infections. The fact that the residency period is a stressful and overwhelming time during which residents work long hours is no longer questioned and has been well documented in the literature.²The heavy workload and the health risks faced by the doctors puts them under lot of stress. Although doctors have lower rates of many kinds of physical illness than the general population, past studies of sickness in the medical profession have highlighted three particular areas of concern. Doctors have higher rates of suicide, psychiatric illness and possibly alcohol and drug misuse than the general population.³

This study endeavors to identify psychological stress and its associated factors among resident doctors in a tertiary care hospital in Mumbai.

METHODS

This cross sectional study was conducted at a tertiary care hospital catering to millions of patients annually. The resident doctors working in the institute were the participants. Prior permission from the hospital and college authorities was sought; the project was also approved by the medical research ethics committee of the institute. The total number of residents in the college was 550. Fifty percent of the residents were included in the study using stratified random sampling method. All the departments of the hospital i.e. clinical and college i.e. pre and para-clinical were included in the study. The department wise list of post graduate students was obtained from the college establishment. Alternate resident was selected from the list of each department. The first resident in each list was chosen using the lottery method. Data was collected using simple interview technique. Residents were administered a semi-open questionnaire after explaining the rationale behind the study and taking verbal informed consent. **PERCIEVED STRESS SCALE (10 points) PSS** was used to assess the stress among residents.⁴ PSS-10 scores are obtained by reversing the scores on the four positive items, e.g., 0=4, 1=3, 2=2, etc. and then summing across all 10 items.

Items 4, 5, 7, and 8 are the positively stated items. Scores can range from 0 to 40, with higher scores indicating greater stress. The Perceived Stress Scale is a 10-item self report questionnaire that measures persons' evaluation of the stressfulness of the situations in the past month of their lives.

Data was collected from 273 residents. To maintain the confidentiality of the data the questionnaire was anonymous so that the identity of the participants is not revealed. All the residents were included in the study. Residents working in the super specialty also those participants who had worked for less than six months in the institute were excluded.

A resident doctor, also called a registrar in the United Kingdom and several common wealth countries was defined as a person who has received a medical degree and who practices medicine under the supervision of fully licensed physicians, usually in a hospital or clinic. Data was entered in MS excel and was analyzed using SPSS 16 software. The statistical test applied included proportion and chi-square for significance of association. P value less than 0.05 was considered significant.

RESULT

Among all residents, 102 (37.3%) who scored above the mean score were considered stressed. The average age of resident medical officers participating in the study was 26.52. Out of the 273 respondents 171(62%) participants were males and 102(37%) were females. The challenge of psychological stress is mainly faced by the young work force at a tertiary care hospital. The residents were evenly distributed in the three years of post graduation, 34.07% residents were from first year, 32.60% from second year and 33.33% from third year. The Figure 1 shows the maximum, minimum and mean scores of all the eighteen departments of the institute. As seen in the Figure 1 the departments of pediatrics, gynecology, orthopedics and pathology had very high mean score, depicting the high stress in these departments. Questions were asked about the factors contributing to stress. The answers ranged from heavy work load with long duty hours 132(48.3%), poor accommodation and food 101(32%), low stipend 112(41%) and lack of social and family life 57(22.8%). Those who belong to the clinical branches fall in the higher stress categories, and those in pre and para clinical branches have lesser stress.

Table 1 Determinants of stress among resident doctors.

Determinant	Stress present (%)	Stress absent (%)	P value
Gender			
Male	59(34.5)	112(65.5)	0.2
Female	43(42.1)	59(57.8)	
Marital status			
Married	25(45.5)	30(54.5)	0.16
Single	77(35.3)	141(64.6)	
Year of post-graduation			
First	43(46.2)	50(53.7)	0.01
Second	26(29.2)	63(70.7)	
Third	33(36.2)	58(63.7)	
Branch			
Pre & para clinical	14(15.9)	74(84.1)	<0.001
Clinical	82(44.3)	103(55.7)	

Table 2 Factors associated with stress in resident doctors

Factors	Stress present (%)	Stress absent (%)	P value
Sleep duration			
Less than 6 hours	46(29.4)	110(70.5)	<0.01
More than 6 hours	56(47.8)	61(52.1)	
Fatigue			
Yes	27(54)	23(46)	0.04
No	85(38)	137(62)	
Dyspepsia			
Yes	54(52.9)	48(47.1)	<0.01
No	64(37.4)	107(62.5)	
Tobacco			
Yes	12(30.7)	27(69.2)	0.35
No	90(38.4)	144(61.5)	
Alcohol			
Yes	30(45.5)	36(54.5)	0.11
No	72(34.7)	135(65.2)	

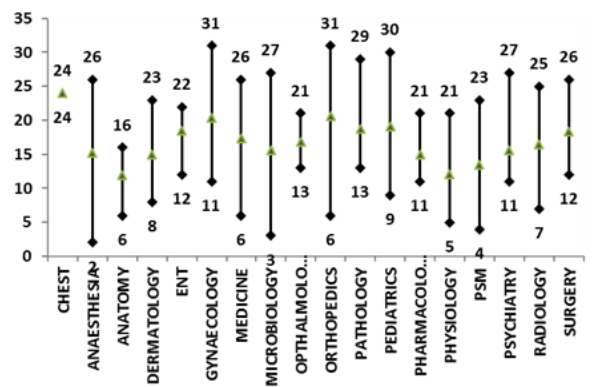


Figure 1 Department-wise Maximum, Minimum and Mean PSS score of resident doctors

Residents in the first year of post-graduation experienced significant more stress as compared to their counter parts in the second and third year. Stress is not associated with gender and marital status (Table 1). Inquiries were made regarding factors associated with stress. Questions were asked about duration of sleep, fatigue, symptoms like dyspepsia at work place and about the use of tobacco and alcohol. Among the residents 39(14%) reported smoking regularly and 66(24%) were consuming alcohol frequently. None of these were female residents.

As seen in Table 2, Stress is significantly associated with sleep deprivation, fatigue and dyspepsia. Significant association was also seen between needle stick injury and stress, the results pertaining to this will be presented separately.

DISCUSSION

In our study stress was identified in 37.3 resident doctors. In a similar study conducted by Saini et al ⁵ in a tertiary care institute in Delhi the overall prevalence rate of stress among resident doctors was found to be 32.8% though the scale used for measurement is the DAS scale. Another study was conducted by Rajan&Bellare⁶ at a tertiary care Municipal hospital in Mumbai to identify the stressors during residency. The factors like burden of work, extended duty hours, poor facilities at hostel are similar to the ones found in our study.

A cross-sectional study done by Mostafaamr et al ⁷ among medical students of Mansoura College of Medicine in Egypt during the academic year of 2006/2007 to find out if gender predicts stress in them using the perceived stress scale. The authors found no significant difference between the perceived stress in males and female students. The finding is similar to our study.

Grainger et al (1995) ⁸ have recently reported a study of 235 pre-registration house officers in Birmingham. They used the Occupational Stress Indicator. They found high rates of psychological illness, with women reporting worse mental and physical health compared with men. Alcohol consumption was high, particularly for women doctors - twice as many women doctors were drinking in excess of the recommended limits for alcohol consumption compared with women in the general population. Since this study is done in western country which has different socio cultural norms the findings do not match with our

study i.e. no female residents were found who consumed alcohol in our study.

In a study by Jenny Firth-Cozen⁹ 170 junior house that were followed up from their fourth year in medical school mean levels of stress were higher than in other reported occupational groups, and the estimated prevalence of emotional disturbance was 50%, with 28% of the subjects showing evidence of depression. Nearly a fifth of the subjects reported occasional or frequent bouts of heavy drinking, a quarter took drugs for physical illness, and a few took drugs for recreation. Stress scores were also correlated with diet, problems with sleep patterns, and the number of hours slept in the past 48 hours. Subjects in teaching hospitals were significantly more stressed ($F=9.84, df=1, p<0.01$) and more depressed ($F=4.17, df=1, p<0.05$) than those in non-teaching hospitals.

In our study Stress is significantly associated with clinical branches, first year of post graduation, needle stick injury, sleep deprivation and self reported anxiety and dyspepsia. Stress is not associated with gender and marital status.

A.D. Yussuf et al¹⁰ conducted a study to determine the level of psychological morbidity among doctors in a residency programme at a Nigerian teaching hospital. The psychiatric morbidity level of 25.7% among the residents was higher than the reported morbidity among other occupational groups and among consultants in Nigeria. Allan J Schwartz et al¹¹ studied medical and dental residents to measure stress and its causes. Their stress as measured by the brief symptom inventory, showed levels slightly above those of adult comparison group. The average levels of stress decreased with residents advancing levels of training. The study showed significantly elevated levels for rotations in the emergency room, greater frequency of being on call, and lesser amount of sleep.

In our study 37% of residents had psychological stress, the first year residents were more stressed than the second and third year. This can be because the first year residents bear the burden of all the ward work and the responsibility of investigations all patients. They have to deal with critical patients in the wards and emergency rooms. They have to report to the seniors and take orders from them. The myriad academic, situational and professional difficulties inherent in residency training coupled with the unstable institutional and government policies concerning the

residency programme as well as poor facilities might be responsible for this high morbidity.

CONCLUSION

This study throws some light on the psychological stress among resident doctors at a tertiary care hospital. Fixed duty hours, better hostel and mess facilities, health insurance, counseling and social support would go a long way in improving the physical and mental well being of these young doctors, who are an integral part of the health care system.

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