

Original Research Article

A cross sectional study on stress and its determinants among doctors in Tirunelveli district, Tamil Nadu

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ABSTRACT

Background: Doctors routinely work in a highly stressful environment where death and adverse health outcome are the most common events. This study helps to estimate the prevalence of stress and to determine the stress influencing and relieving factors among doctors in Tirunelveli district.

Methods: A cross sectional study conducted among 200 doctors working in Government and Private Hospitals of Tirunelveli District, were selected by simple random sampling. Data was collected using pretested questionnaire and Perceived Stress Scale (PSS-10) was used to assess the stress score. Analysis was done by using SPSS version 26.

Results: Among the 200 participants, 97(48.50%) were males and 103(51.50%) females. Mean PSS score was 23.21 ± 7.74 . Moderate stress reported in 116 (58%) study participants, 67 (33.50%) participants have high stress and 17 (8.50%) have low stress. There was statistically significant association between stress and lack of sleep less than 6 hours per day ($p=0.005$). The main stress influencing factors were working environment (39%) and public behaviour (28%).

Conclusions: To prevent potentially fatal medical errors, doctors under stress should receive appropriate counselling, adequate sleep, and maintain regular communication with administrative staff.

Keywords: Health professionals, Stress determinants, Stress relievers

INTRODUCTION

Hans Selye coined the term "stress" in 1936, defining it as "the body's non-specific reaction to any demand for change".¹ The feeling of stress occurs when people do not have the resources to meet the demands placed on them.

The medical profession entails working in an extremely stressful environment where deaths as well as adverse health outcomes are the most common events and even a minimal medical error is life-threatening. Stress is a major contributing factor for these medical errors and this unforeseen situation arises from personal and professional

life which have deteriorating effect on doctors as well as patients. Long-term exposure to occupational stress results in burnout.² Hence stress is a central concept in biology and has now been widely used in psychological, physiological, social and even environmental fields as the practice of medicine is unique and challenging than any other profession in the world.³

Stress among health care professionals depends on the type of job, the type of specialty, the organization, the interpersonal relationships within and outside the health care fraternity and work-life balance.⁴ Although the physical illness of doctors is at lower rates when

compared to the general population, doctors have higher rates of suicide, psychiatric illness and possibly alcohol and drug misuse than the general population.⁵ At an individual level, burnout among doctors has been associated with lower career satisfaction, higher absenteeism, greater probability of leaving the profession prematurely or choosing early retirement, and greater risk of experiencing difficulties in interpersonal relationships such as with family and partners.⁵

In India only very few studies have evaluated psychological issues, stress and burnout among medical professionals. These studies have been mostly limited among medical students than doctors, nurses and other health care professionals.^{2,3} As stress among doctors is often a neglected topic, in order to help the public health professionals and clinicians to plan for further interventions, this study was planned to estimate the prevalence of stress and its influencing and relieving factors among doctors.

METHODS

A cross-sectional study was conducted among doctors of various cadres such as medical officers, general practitioners, consultants, surgeons, and specialists, working in government and private Hospitals of Tirunelveli District, TamilNadu from 10th August 2023 to 10th October 2023. A semi-structured pretested questionnaire which includes questions on socio-demographic information and perceived Stress Scale (PSS-10) was used. Each question was given a maximum score of 4 and minimum score of 0. If the overall score was 0 to 13 it was considered as low stress, score between 14 to 26 was considered as moderate stress and score ≥ 27 was considered as high stress.

Sample size

The sample size was calculated as 200 based on the prevalence of a study done by Agrawalet al, $p=65.9\%$ by using the formula $n=Z\alpha^2pq/d^2$ (d is the relative precision of 10%).⁸ All doctors who are currently working and residing more than 6 months in Tirunelveli district were included in the study. Those doctors who did not give consent were excluded from the study. Simple random sampling technique was adopted and the study sample details were collected from the Tirunelveli government hospital and IMA members list of Tirunelveli district. Cronbachalpha test was assessed.

Statistical analysis

The responses were coded and the data were tabulated in Microsoft Excel 2019. Analysis of data was done using SPSS version 26.0. Descriptive statistics were used to summarize quantitative variables with mean and standard deviation for Perceived stress scale (PSS) score while frequency and percentages were used to summarize categorical (qualitative) variables which include age,

gender, marital status, sleeping hours, chronic illness. Inferential statistics included tests of significance and p-values. The significance of the difference in proportions in the two groups was assessed by Pearson's Chi-square test. P value <0.05 is found to be statistically significant. Prior approval of the institutional ethics committee was obtained before the start of study.

RESULTS

Out of 200 doctors interviewed 97 (48.50%) were males and 103 (51.50%) females. In this study, 130 (65%) participants were between the age group of 25 to 35 years, 43 (21.5%) participants were between the age group of 36 to 50 years and the remaining 27 (13.5%) participants were more than 50 years old. The mean age group of the study population was 37.11 ± 3.5 years. Regarding the type of job, 79 doctors (39.5%) were from government hospitals, 88 doctors (44%) from private hospitals and 33 doctors (16.5%) were self-employed or had their own nursing clinic. The general characteristics of participants are given in Table 1.

Table 1: Socio-demographic characteristics of doctors (n=200).

Variables	Frequency (N)	Percentage (%)
Age (years)	<35	126
	35-50	38
	>50	36
Gender	Male	97
	Female	103
Marital status	Married	115
	Unmarried	85
Organiza-tion	Government	79
	Private	88
	Self-employed	33
Years of clinical practice	<10 years	128
	>10 years	72

The prevalence of moderate stress was observed in 116 (58%) of participants, while severe stress was recorded in 67 (33.5%), and minimal stress was detected only in 17 (8.50%) of participants as shown in Figure 1.

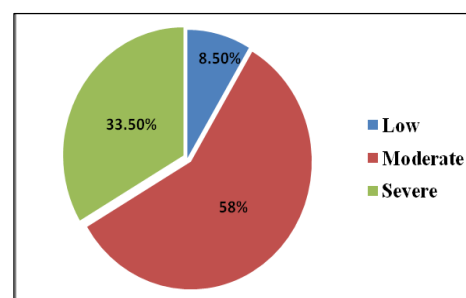


Figure 1: Prevalence of stress among doctors (n=200).

Similarly, among the respondents the major stress influencing factor was the workplace stress by 78 (39%) participants, while 56 (28%) participants were stressed by public behaviour, 26 (13%) participants stressed by family issues and 24 (12%) were stressed by health concerns, followed by 16 (8%) participants where stress was caused due to various other reasons as shown in Figure 2.

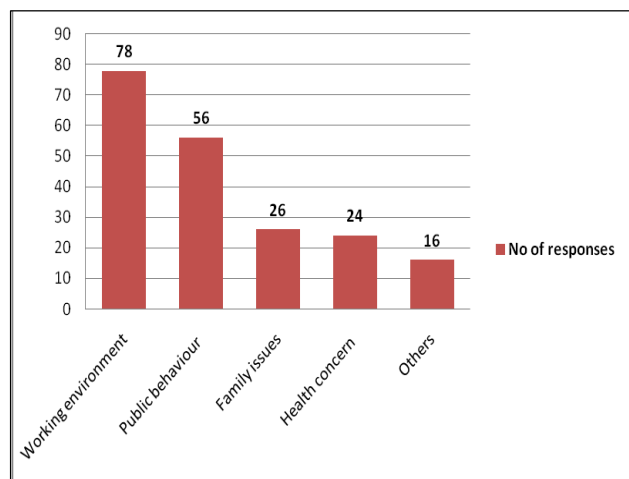


Figure 2: Stress influencing factors among doctors (n=200).

Figure 3 shows that on assessing stress relieving factors, good quality sleep was identified as the major stress reliever by 66 (33%) participants. Spending time with family and friends eased stress for almost 57 (28.50%) participants and 26 (13%) participants respectively. 22 (11%) individuals claim that they relax from their hobbies, followed by 18 (9%) participants who exercise

or practice yoga, 6 (3%) participants use their phones to relax, and 5 (2.50%) participants involved in other stress-relieving activities.

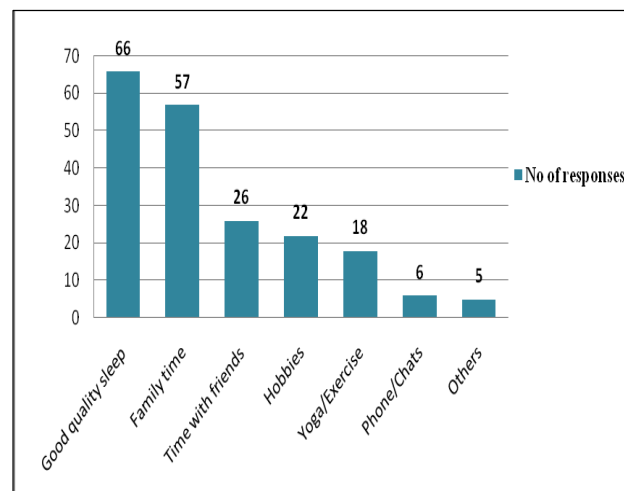


Figure 3: Stress relieving factors among doctors (n=200).

The current study shows good quality sleep as a potent stress buster. This implies the fact that respondents living at home with family were found to be more secured in the present study followed by family time.

Table 2 shows a statistical significant between the stress levels with gender, sleeping hours and chronic illness. Marital status and perceived stress shows no significant association. Female doctors are more stressed when compared to male doctors. Lack of sleep less than 6 hours per day and chronic illness was one of major contributing factors for stress among doctors.

Table 2: Association between stress and sociodemographic variables (P value).

Variables		PSS ≥ 14 (stress present)	PSS <14 (Stress absent)	χ^2 value	P value
Gender	Male	83	14	8.53	0.003*
	Female	100	3		
Marital status	Married	108	7	2.02	0.155
	Unmarried	75	10		
Sleeping hours	≤6 hours	16	98	7.75	0.005*
	>6 hours	26	60		
Chronic illness	Present	34	23	5.12	0.024*
	Absent	60	83		

*p<0.05- statistically significant.

Table 3: Perceived stress scale (PSS) score statistics.

Total (n)	Minimum score	Maximum score	Mean	Standard deviation
200	2	40	23.21	7.742

According to the perceived stress scale (PSS) score statistics Table 3, the minimum score obtained by the

study participant was two and the maximum score was forty with a mean score of 23.21 and standard deviation of 7.742.

DISCUSSION

Doctors play a crucial role in a society. They have to balance their professional as well as their personal lives and they must react appropriately in the complex environment of the medical workplace, which presents a variety of challenging scenarios.

In the present study, it has been found that 58% of participants have moderate stress and 33.50% of participants have a higher prevalence of severe stress, whereas in the studies done in North India by Garg et al among doctors, the prevalence of moderate stress was 62.4% and severe stress was found to be 27.6%.⁶ This may reflect continuous exposure to stress and high workload. Owing to the constant advancements in medical knowledge and professional growth, physicians constantly strive to acquire new competencies. They are therefore constantly in a stressful environment.

It was also observed that the mean $\pm$ SD PSS score in the current study was 23.21 ± 7.74 while in the study done among doctors of tertiary care hospitals in India, the mean $\pm$ SD PSS score was 20.14 ± 5.23 .⁷ Even in routine circumstances, doctors endure high amounts of stress and in unanticipated situations stress can increase significantly.

Similarly, top responses for factors increasing stress were workplace stress by 78 (39%) participants and public behaviour by 56 (28%) participants. These factors contribute higher prevalence of stress when compared to the study done by Agrawal et al which constitute work environment stress (16%) and public behaviour (12%).⁸ It was also found that doctors were worried by the negative impact in the working environment. About 66 participants implies healthy sleep pattern as a powerful stress reliever.

Statistically significant stress levels was found in female doctors ($P=0.003$) which was similar to the study conducted by Sidhu et al where a significant association between perceived stress level and female doctors were seen ($P=0.009$).⁵

As a result of higher workload both at home and at work, female doctors are more stressed than male doctors. A significant association was also found between the chronic illness of the study participants and the stress level ($p=0.024$). Perceived stress and sleep duration among doctors are statistically significant ($p=0.005$). This correlates with the study done by Almojali et al where sleep quality and stress have significant association ($p=0.001$).¹²

Therefore sleep duration less than six hours day due to various reasons contribute to poor mental well-being. Maintaining a healthy life enhances the mental well-being of healthcare professionals which is crucial for their effective functioning in providing the health care services.

CONCLUSION

Compared to the general population, doctors have a high prevalence of mental health problems. Workload and work schedule should be redistributed among doctors by the hospital administration. In order to maintain the mental health of stressed doctors stable and relax, it is essential to provide proper counselling, adequate rest, and develop a regular communication system between administrative and working health professionals.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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