



A cross-sectional study to assess the level of stress and its sources among teaching medical faculties working in a medical college, Kancheepuram, Tamil Nadu

Tanushree B¹, Manju^{*2}, Timsi Jain²

¹Saveetha Medical College, Thandalam, Chennai, Tamil Nadu, India

²Department of Community Medicine, Saveetha Medical College, Thandalam, Chennai, Tamil Nadu, India

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ABSTRACT

Stress at work has touched most the professions. The lives of teaching medical faculties are often stressful. Increased exposure to stressful events may cause psycho-social disorders like depression, anxiety, self-doubt, insomnia and psychosomatic disorders like impaired immune function, increased cardiovascular risk factors, migraine, ulcers etc. This may also affect the teaching qualities of the medical faculties to the students. Several studies on work-related stress have demonstrated that burnout has a strong impact on certain professions, teaching faculties in particular. This study was done to assess the level of stress and its sources among teaching medical faculties. A cross-sectional study was conducted using a self-reported questionnaire which covered three categories, including socio-demographic details, Perceived Stress Scale and information regarding 16 selected stressors which were related to stress was collected. Data were recorded, tabulated and analysed. The study showed that out of the 122 study subjects, majority of teaching medical faculties had a moderate level of stress (60.6%) whereas 35.2% had a low level of stress and only very few (4.2%) had a high level of stress. The mean PSS score in this study was 16.04 (± 5.59 SD). The present study identified that majority of the teaching medical faculties have a moderate level of stress. Most of them find traffic while travelling to work, climatic conditions and high level of expectations from patients as stressors. Necessary workplace interventions should be made to help them cope with work. Every effort should be made to help them deal with stress effectively and safely.



*Corresponding Author

Name: Manju
Phone: +919444675750
Email: manjuneela92@gmail.com

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INTRODUCTION

Stress at work has touched most the professions. It is outlined as "particular response a person makes to impulse events that disturb his balance and exceed his ability to cope with" (Sathiya et al., 2016). Stress occurs when a person is confronted with a situation that's perceived as overwhelming and with which they can't cope (Al-Dubai et al., 2011). Even though stress to some extent is important because it provides an impulse to extend one's ability and may push one's ability to find out one's actual capacity, but if the threshold exceeds the ability to cope, it results in distress or burnout (Kamal et al., 2015).

Several studies on work-related stress have demonstrated that burnout has a strong impact on certain professions, teaching faculties in particular. Burnout is characterised by physical and emotional exhaustion, apathy, pessimistic attitude, low personal accomplishment and reduced self-control (Mumtaz *et al.*, 2010). Work-related stress is a crucial problem that affects physicians. WHO defines work-related stress because the response people may have when presented with work demands and pressures that aren't matched to their knowledge and skills and which challenge their ability to cope. Stress is considered as vital issues in the field of occupational health (Potter *et al.*, 2010).

Stressors in work can cause dissatisfaction and subsequently might affect patient care adversely. Increased exposure to stressful events may cause psycho-social disorders like depression, anxiety, self-doubt, insomnia and psychosomatic disorders like impaired immune function, increased cardiovascular risk factors, migraine, ulcers etc. (Azeem and Nazir, 2008). This may also affect the teaching qualities of the medical faculties to the students (Pandey and Tripathi, 2001).

Various factors such as poor work environment, long working hours, traffic while travelling to work, work overload, relationship at work, job insecurity and lack of advancement within the organisation, family problems, financial issues, conflict with family needs might be identified as sources of stress (Cooper, 1978). Also, being on call at night showed increased practitioner's stress levels (David P. French, 2001). The knowledge about the presence of stress and source, causing it should be identified and intervened. Therefore, this study was designed to assess the perceived level of stress and determine the sources associated with stress among teaching faculties working in a medical college, Kancheepuram, Tamil Nadu.

MATERIALS AND METHODS

This cross-sectional study was conducted in Saveetha Medical College and Hospital, Chennai from January to March 2020. Institutional Ethics Committee clearance was applied for and obtained. It was done among teaching medical faculties in the medical college. Universal sampling was done. Those who didn't consent and those who were not available after three consecutive visits were excluded from the study. Each of the study subjects was approached and explained the aims and objectives of the study by the investigator and informed verbal consent were obtained. Questionnaires were

issued, and the completed questionnaires were received during subsequent visits. A total of 122 teaching medical faculties participated in this study. Confidentiality was maintained throughout the conduct of the study.

A self-reported questionnaire was used, which covered three categories, including socio-demographic details, Perceived Stress Scale (PSS) and information regarding 16 selected stressors which were related to stress, were collected.

The PSS – 10 Questionnaire had 10 questions, and the respondents were requested to indicate their level of agreement with a given statement by way of an ordinal scale (0 = Never; 1 = Almost; 2 = Sometimes; 3 = Fairly Often; 4 = Very Often). The Perceived Stress Scale score is obtained by summing the points awarded to the 10 items within the Perceived Stress Scale, and it ranges from 0 to 40 where 0-13 indicates low stress, 14-26 indicates moderate stress and 27-40 indicates a high level of perceived stress.

Data obtained was entered into Microsoft Office Excel Spreadsheet, and then analysis was done using SPSS software. Response to each question was tabulated, analysed, and percentage for the same was also calculated. Chi-square test was applied to determine the association between categorical variables. P-value was calculated at a 95% confidence interval with significant levels at $p < 0.05$.

RESULTS

Participants demographics

The present study among teaching medical faculties included 67 (54.9%) males and 55 (45.1%) females. Among the study participants, almost 3/5th were clinical side teaching faculties (60.7%). A total of 101 participants (82.8%) were married, and 21(17.2%) were unmarried. Mean age of teaching faculties in the present study was 37.62 (\pm 9.47). About 89 (72.9%) of them had kids, and 33 (27.1%) did not have kids. Almost 40 (32.7%) teaching faculties were attached to other hospitals and did private practice after the teaching hours (Table 1).

The association between the socio-demographic details and PSS score was studied, and the same is shown in Table 2.

Perceived Stress Score (PSS)

In the present study, the mean PSS score for teaching medical faculties was found to be 16.04 (\pm 5.59 SD). This study showed that nearly 43 teaching faculties (35.2%) had a low-stress score and 74 (60.6%) had moderate stress score, whereas only 5

Table 1: Socio-demographic characteristics of teaching medical faculties

Characteristics	N=122	%
Gender		
Male	67	54.9
Female	55	45.1
Teaching Faculty		
Clinical Side	74	60.7
Non-clinical Side	48	39.3
Marital Status		
Married	101	82.8
Unmarried	21	17.2
Children		
With	89	72.9
Without	33	27.1
Private Practice		
Practising	40	32.7
Not practising	82	67.3

Table 2: Association between the socio-demographic details and PSS score among study subjects (n=122)

Variables	PSS Score	P-value			
		Low	Moderate	High	
Age	<35 Years	25(20.4)	35(28.8)	3(2.4)	0.490
	>35 Years	18(14.8)	39(31.9)	2(1.7)	
Marital Status	Married	37(30.3)	61(50.2)	3(2.4)	0.087
	Not married	6(4.9)	12(9.8)	3(2.4)	
Children	With	32(26.2)	54(44.2)	3(2.4)	0.789
	Without	11(9.1)	20(16.4)	2(1.7)	
Designation	Above the rank of Assistant Professor	29(23.8)	57(46.8)	2(1.7)	0.14
	Below the rank of Assistant Professor	14(11.4)	17(13.9)	3(2.4)	
Years of work experience	Less than 10 years	32(26.2)	61(50.1)	5(4.1)	0.524
	More than 10 years	10(8.1)	12(9.8)	2(1.7)	
Travel time per day	Less than 2 hours	17(13.9)	44(36.1)	3(2.4)	0.108
	More than 2 hours	26(21.4)	30(24.5)	2(1.7)	

*Chi-square test was applied; p-value <0.05 considered to be significant

of them (4.2%) had a high-stress score. The association between various study variables and PSS score among study participants was studied using unpaired 't' test, and one-way analysis of variance test (ANOVA) and the same is shown in Table 3.

Sources of stress

As indicated in Table 4. In this study, 79 teaching faculties considered climatic condition as a stressor (64.8%). More than half of the population did not have time for exercise or other leisure activities (54.9%). 109 teaching faculties (89.3%) considered that level of expectation from patients was high.

DISCUSSION

Stress is an inevitable part of our life. Work-related stress is not uncommon among teaching medical faculties. Health care professionals in all parts of the world are subjected to various pressures resulting from a sharp upsurge of change, economic growth, advancement in technology, increasing expectations of patients, rationing of health care, and therefore the need for more evidence-based and high-quality health care, improved performance, and productivity. The focus of this study is to assess the level of stress and its sources among health care professionals, i.e. teaching medical faculties.

Table 3: Association between variables and PSS score among study participants (n=122)

Variables		PSS Score			P-value
		Low	Moderate	High	
Sleep Deprivation	Yes	3	14	4	0.001
	No	40	59	2	
Skipping Meals	Yes	10	18	3	0.191
	No	33	56	2	
Smoking	Yes	1	2	1	0.099
	No	42	72	4	
Alcohol	Yes	1	4	1	0.213
	No	42	70	4	
Climatic condition as stressor	Yes	23	44	3	0.814
	No	20	30	2	
Confronting constant emotional and physical suffering	Yes	22	27	2	0.298
	No	21	47	3	
Adequate support from friends and family	Yes	43	67	3	0.169
	No	3	4	2	
Balance between work and social life	Yes	36	62	4	0.975
	No	7	12	1	
Time for exercise or other leisure activities	Yes	16	37	2	0.396
	No	27	37	3	
Inability to manage time efficiently	Yes	15	40	2	0.128
	No	28	34	3	
Fear of committing an offence while treating a patient	Yes	9	15	1	0.995
	No	34	59	4	
Ability to deal with death of patients	Yes	43	69	4	0.062
	No	4	1	1	
High level of expectation from patients	Yes	40	65	4	0.536
	No	3	9	1	
Ability to cope with work	Yes	42	70	4	0.213
	No	1	4	1	
Inadequacy of resources and staffs in the organisation	Yes	12	31	4	0.489
	No	31	43	1	
Conflict among colleagues affecting performance	Yes	7	18	4	0.006
	No	36	56	1	

*Chi-square test was applied; p-value <0.05 considered to be significant

The level of stress was evaluated using the perceived stress scale (PSS-10). It is a classic stress assessment instrument (Cohen *et al.*, 1983). The study showed that out of the 122 study subjects, majority of teaching medical faculties had a moderate level of stress (60.6%) whereas 35.2% had a low level of stress and only very few (4.2%) had a high level of stress. The mean PSS score in this study was 16.04 (± 5.59 SD). This is similar to a study done in Kancheepuram among doctors which had a mean of 18.35 (± 4.7 SD). A study among 1st-year medical undergraduates in Bangalore revealed mean perceived stress score to be 20.29 (± 6.24

SD) (Thangaraj and Souza, 2014). A mean PSS score of 19.9 was recorded among 159 anaesthesia residents in Turkey (Abut *et al.*, 2012). Also, another study in an Asser region in Saudi Arabia reported a mean of 18 among 303 physicians (Siddiqui *et al.*, 2017).

A study in Zambia, Africa, found doctors to be highly stressed. Lack of resources to carry out their job, the workload, the low level of reward and the long working hours were most frequently identified as stressors (Menon *et al.*, 2007). The variations within the PSS score among different studies could be explained by many factors like work-

Table 4: Percentage of the population with various stressors (n=122)

Sources of stress	Yes(%)	No(%)
Heath related stressors		
Sleep Deprivation	22 (18.1)	100 (81.9)
Skipping meals due to work	32 (26.2)	90 (73.8)
Smoking	3 (2.4)	119 (97.6)
Alcohol consumption	5 (4.1)	117 (95.9)
Psycho-social stressors		
Climate as stressor	79 (64.8)	43 (35.2)
Confronting constant emotional and physical suffering	51 (41.8)	71 (58.2)
Adequate support from friends and family	115 (94.2)	7 (5.8)
Ability to balance work and social life	102 (83.6)	20 (16.4)
Time for exercise or other leisure activities	55 (45.1)	67 (54.9)
Inability to manage time efficiently	57 (46.7)	65 (53.3)
Fear of committing an offence while treating a patient	13 (10.7)	109 (89.3)
Ability to deal with the death of patients	107 (87.7)	15 (12.3)
High level of expectation from patients	109 (89.3)	13 (10.7)
Work Environment Stressors		
Ability to cope with work	117 (95.9)	5 (4.1)
Inadequacy of resources and staff in the organisation	47 (38.6)	75 (61.4)
Conflict among colleagues affecting performance	30 (24.6)	92 (75.4)

ing environment, speciality, and variations in socio-demographic and cultural characteristics.

The study showed that nearly 70% of the population considered traffic while travelling to work to be stressful which in turn may cause people to opt for a job change due to the stress and fatigue caused by the daily commute. It can also cause anxiety, lack of control, problems in the way we respond and work frustration.

Majority of the population considered climatic condition as a stressor (64.8%). This is because the hazards due to extreme weather events create significant demands on the health care system and often put workers under tremendous psychological pressure and stress (Xiang et al., 2014). *Climate* change has several direct unfavourable effects on *working* people and is a significant work environment stressor.

More than half of the population did not have time for exercise or other leisure activities (54.9%). Stress associated with physical inactivity is likely to contribute to the epidemic of cardiometabolic and emotional disease of our current society (Rimmele et al., 2009). Exercise and other physical activity produce endorphins within the brain that act as natural painkillers and also improve the ability to sleep, which successively reduces stress (Tsatsoulis and Fountoulakis, 2006). Hence, physical activities should be promoted, and exercise facilities should

be made available for hospital staff on the campus.

Nearly 90% of the population considered that level of expectation from patients was high. A study by Sonneck and Wagner (1996) identified enhanced expectation from patients as one of the sources of stress. A study by Edwards et al. has given an example that patients sometimes expect doctors to spend a longer time examining them. A study by David P. French (2001) showed that unrealistically high expectations from patients were one of the most common work stressors for doctors in public hospitals. Also, a study by Kushnir et al. (1997) showed that patients expectations of perfection and complete disease killing from doctors made doctors feel stressed and strained from the unrealistic demands of the patients. A study done among healthcare professionals in Turkey reported that health institutions have started considering programs directed towards reducing work stress and enhancing motivation and job satisfaction (Isikhan et al., 2004).

CONCLUSION

Stress is inevitable, but if not correctly managed may cause damage to body and mind. The present study identified that majority of the teaching medical faculties have a moderate level of stress. Most of them find traffic while travelling to work, climatic conditions and high level of expectations from patients as stressors. Necessary workplace interventions

should be made to help them cope with work. Only very few (4.2%) had a high level of stress. Every effort should be made to help them deal with stress effectively and safely.

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Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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