

WORK RELATED STRESS AMONG MEDICAL TEACHERS: A QUESTIONNAIRE BASED OBSERVATIONAL STUDY

Dr.Swapnali.S.Kadam¹, Dr.Surekha.S.Khedkar^{2*} Dr.Tushar.R.Bagle³

1. Associate Professor, Department of Physiology, 2. Associate Professor, Department of Biochemistry, 3. Associate Professor, Department of Pharmacology Rajiv Gandhi Medical College and Chhatrapati Shivaji Maharaj Hospital, Kalwa, Thane, Maharashtra

*Corresponding author - Dr.Surekha.S.Khedkar

Email id - sbkhedkar700@gmail.com

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ABSTRACT

Background: Medical profession has witnessed tremendous change in last four decades, this has caused increase in work stress in the Medical teachers. **Material & Methods:** A questionnaire based study was done in medical teachers from government, semi government and private medical college and teaching hospitals that was cross sectional observational. Institutional Ethics Committee permission was taken before starting the study. Test-retest reliability was estimated with a subsample of 10 medical teachers by taking two interviews seven days apart. The stress questionnaire was prepared from occupational stress the Bristol and Stress and Health at Work Study. Stress questionnaire had components that included Autonomy (5), Work condition (3), Communication & Relationships (5), Stress / Work out (8), Attitude (3), Support (5), Self Confidence (3), Social life (6), Performing meaningful work (3). **Results:** The average age in our study was 42.05 ± 9.22 years. There were 45 females and 55 males. The total stress score in medical teachers was 119.45 ± 11.46 , in clinical teachers was 117.15 ± 10.86 and in preclinical and paraclinical teachers was 121.8 ± 12.07 ($p=0.045$). The teachers had problems of insufficient space, sitting arrangement that was seen more in preclinical and paraclinical teachers while exposure to infectious diseases was seen more in clinical teachers. Teaching was done more by preclinical and paraclinical teachers and research more by clinical teachers. **Conclusion:** Stress is highly neglected by medical professionals. It is important to take steps to relieve the medical teachers of various stressors in medical profession.

Keywords: Fatigue, Clinical, Teaching, Research,

INTRODUCTION

Workplace or occupational stress is form of harmful emotional and physical responses that happens when requirements of occupation do not match workers needs, resources and or capabilities(1).The effectiveness of a Health Care System is dependable on quality, adequacy and its correct distribution. The performance of individual is dependable on job satisfaction for individual outcome, thus employee job satisfaction becomes vital especially in healthcare. The quality of the services offered is affected by doctors and

paramedical staff. Medical profession has witnessed tremendous changes in the last four decades (2).

The potential sources of workplace stress in medical educators include an increased patient and administrative loads. Doctors have a number of competing demands that often mean there is insufficient time for preparation and teaching, and the requirement to conduct research. There is limited encouragement and motivation for medical teachers. The consequences of occupational stress are

untoward effect on organizational and academic performance thus leading to increase in job dissatisfaction. Also there is reduced productivity, inability to cope with job demands and seriously impaired quality of health care along with decreased efficacy of health service delivery. 1 The excessive stress may lead to adverse effects such as employee dissatisfaction and may even led to mental disorders, this causes decrement in individual and/or performance of organization, thus stress becomes a routine in everyday life (3).

The ratio of doctors to general population in India is 1:1800, considerably lower than that in western countries (1:280 - 1:640) and WHO recommendation of 1:1000 (4). In India with increase in population, increasing health consciousness there is increase in work overload that exhausts the doctors. Consequently, they find it very difficult to give enough care and time in explanation to patients. This may easily lead to a tension ridden doctor patient relationship, which aggravates the pressure and mental health among doctors (5).

Job satisfaction is a complex function related to teachers different demographic characters, pay, promotional opportunities, work responsibilities, and relation with coworkers etc. Job stress is a recognized problem in health care professionals including medical teachers which leads to higher degrees psychological morbidity(3,4,5). With negligible studies in work related stress in medical teachers especially in India there is need to estimate stress experienced by teachers in medical colleges.

MATERIAL AND METHOD:

An questionnaire based study was done in medical teachers from government, semi government and private medical college and teaching hospitals that was cross sectional observational study. Institutional Clinical Ethics Committee of a tertiary hospital and medical college permission was taken before starting the study. Study site was department of Physiology, Biochemistry and Pharmacology of a medical college and tertiary care hospital. With voluntary participation and written consent taken prior to

enrollment in the study that was conducted from December 2015 to October 2017. Consent form, Subject Information Sheet, Demographic information statement and questionnaire were prepared by authors along with the members of the Medical Education Technology Cell.

The questionnaire was validated by five experts from Medical education technology cell and staff of Advance course in Medical Education. For validation, 10 medical teachers were included for content and construct validity. For validity of the questionnaire a test and a retest reliability was done by using 10 medical teachers as a subsample and the same teachers were interviewed with seven days break in between. Following this the reliability of internal consistency was assessed by Cronbach's-alfa coefficient that was 0.72.

Consent form, Subject Information Sheet, Demographic information statement and questionnaire were printed and authors visited teachers personally. The Subject Information sheet and Questionnaire were also forwarded by respective emails to the participants and volunteers collected the written copy of Consent form, Subject Information Sheet, Demographic information statement and questionnaire.

Consent form, Subject Information Sheet, Demographic information statement and questionnaire were administered to the participants and collected after 30-40 minutes. The inclusion criteria were age >18 yrs of age, either gender, that are currently employed as medical teacher in medical college and tertiary care hospital, and also willing to sign written inform consent form. Medical teachers that were not willing to participate, nor attached to any medical college and returning incompletely filled forms were excluded. The questionnaire was distributed to 316 medical teachers out of which teachers 134 filled the Consent form, Subject Information Sheet, Demographic information statement and questionnaire. After applying inclusion and exclusion criteria 100 were selected. During the study the privacy and the confidentiality of the subjects data was maintained during the whole

duration of study.

The stress questionnaire was prepared with the assistance of scale from "Occupational Stress The Bristol And Stress And Health At Work Study" (6). The stress questionnaire had statements made from the following components, Autonomy (5), Work condition (3), Communication & Relationships (5), Stress / Work out (8), Attitude (3), Support (5), Self Confidence (3), Social life (6), Performing meaningful work (3), thus there were total 41 questions. Each question was attempted on the scale of 5: Strongly agree, 4: Moderately agree, 3: Agree, 2: Moderately disagree and 1: Strongly disagree. The total score for questionnaire being 205 more the score less is the stress.

Data was entered in MS Excel 2010, responses were coded and analyzed. Descriptive statistics was expressed in terms of actual numbers, mean \pm standard deviation, frequency and percentage. P value <0.05 was considered statistically significant. Student's unpaired t-test was used to compare the scores of VAS and parametric data. ANOVA was used for multiple group comparison. Categorical variables were compared using Chi square test and Fischer's test.

RESULTS:

The average age in our study was 42.05 ± 9.22 years. There were 45 females and 55 males. There were 16 (C:10 NC:6) Professors, 21 (C:11 NC:10) Associate professors and 53 (C:25 NC:28) assistant professors and 10 (NC:10) demonstrators. There were 14 professor and heads. The average teaching experience for UG was 12.23 ± 9.57 and PG was 9.45 ± 7.89 . Out of 100, there were 85 were MBBS (Bachelor of Medicine and Bachelor of Surgery) MD/MS (Doctor of Medicine), 10 were MBBS while 3 were PhD (Doctorate of Philosophy) and 2 Msc (Master of Science). Thus there were 46 clinical and 54 teachers.

Out of 100 total 92 were married. For feedback 66 (C:37 NC:29) received feedback from /superiors, 76 (C:36 NC:40) from students, 78 (C: 41 NC:37) from

colleagues for improvement in teaching.

The teachers had problems of insufficient space 46 (C:14, NC:32 [$p=0.0006$]), sitting arrangement 51 (C:14, NC:37 [$p<0.0001$]), inadequate Teachers lounge 29 (C:8, NC:21 [$p=0.007$]), inadequate Storage space 56 (C:26, NC:30 [$p=0.545$]), lack of changing room 22 (C:17, NC:05 [$p=0.007$]). Medical profession exposes teachers to Fumes 24 (C:6, NC:18 [$p=0.009$]), Harmful substances 42 (C:24, NC:18 [$p=0.311$]), Dust 34 (C:20, NC:14 [$p=0.21$]) and exposure to Infectious diseases 56 (C:34, NC:22 [$p=0.02$]). Among 100 teachers, 10 (C:7, NC:3 [$p=0.317$]) teachers had faced undesirable changes in work place.

Out of 100 teachers 23 (C:21 NC:2 [$p<0.001$]) suffered from abuse due to political interference. With regards to addiction 2 were smokers, 9 Alcoholics, 3 tobacco chewer and 35 drink caffeinated beverages. The total stress score in medical teachers was 119.45 ± 11.46 , in clinical teachers was 117.15 ± 10.86 and in preclinical and paraclinical teachers was 121.8 ± 12.07 ($p=0.045$). For individual parameters of stress instead of total score an average score of the parameter on the scale of 1 to 5 was considered.

In the job profile in a day Clinicians spent 28.44 ± 19.29 percentage (%) of their time in OPD, for surgeons 29.58 ± 22.49 (%) in surgical operations, 32.5 ± 12.5 (%) in wards, while Nonclinicians spent 38.63 ± 16.8 (%) in laboratory. The Job profile of teachers in percentage is given in table 1. Irritability was more in Clinicians than Nonclinicians and was statistically significant (0.0003) while other health related problems were not statistically significant. Distribution of health related problems by teachers is given in table 2. Distribution of stress parameters in Clinicians and Nonclinicians is given in table 3 and Gender distribution is given in table 4.

DISCUSSION:

Occupational stress occurs due to mismatch in the workplace demands and individual's or workers ability to perform and fulfil the obligations. The role and responsibility of a teacher is multifaceted in the

current educational curriculum.(7). Medical personnel in daily life had to respond to needs of patients and also of the patients families and their own family thus making medical practice stressful (8). The job satisfaction and stress related to occupation among teachers is equated with those having physical symptoms and very rarely found out by examination. There has been no systematic, large-scale research or small-scale research that tests the effect of occupational stress on various indicators in medical educators in the Asian and especially in India (2,9).

In our study a comparison of preclinical and paraclinical versus clinical faculty shows stress is higher in clinical branch teachers with major complain of fatigue and irritability. The dual pressure of academic along with patient care responsibility could be a major problem for precipitation of health related problems. Teachers from preclinical and paraclinical department have the additional responsibilities of administrative duties and field work. Female teachers have more stress compared to their male counterparts.

Study by Khan had shown the results that revealed that job stress has significant negative relationship with job satisfaction, job performance and life satisfaction. Job stress is unpleasant condition or position at work place that negatively influence individual's wellbeing and performance (10).Study by Chen had shown that Chinese doctors suffered from hypertension, hyperglycemia, cervical spondylitis, hyperlipidemia and fatty liver (5). While study by Xue had Chinese doctors scores of mental health of clinical doctors was worse and significantly higher than preclinical and paraclinical medical staffs. Also scores of depression, anxiety, hostility and paranoia were higher in female doctors than male doctors (11).

The huge population in China has resulted in increasing number of patients and the health care system reform has enhanced patients demand from doctors. 8 According to study by Liang in China 91.3% work more than 8 hours and young doctors in public hospitals have poor quality of life. 12 Study by

Bhattacharjee in eastern India medical college saw job satisfaction of 59.6% and the most important factor was working space. 13 According to Golubicoccupational stress is important and amounts for almost 50 to 60% of the working days are lost. 14

Similarly in India with exponential increase in population, present day doctors will be burdened, that can be a stressful condition for the Indian doctors.

Study by Kayastha occupational stress was negatively associated with satisfaction towards work ($r = -.472$), similar with pay ($r = -.445$), supervision ($r = -.634$) promotion ($r = -.510$), and job in general ($r = -.518$).15 Study by Daud had various factors for workplace stressors that include 96% had inadequate control, 70% had difficulty in expressing opinions, 66% had unsafe working conditions, 62% feel that work overload and unrealistic deadlines and 59% had job pressures interfering with personal life.1 Study by Menon in Zambia had identified stressors that included increase in workload, long working hours and the low level of reward the inefficient resources to completer the tasks effectively. 16 Study by Madaan Physicians from tertiary care hospital were not satisfied with their working environment.17

Study by United States of America had shown various reasons like 27% include anxiety and depression, 14% include conflict with managers or colleagues, 9% loss of confidence and performance anxiety, 9% due to relationship, marital troubles and 5% include family problems responsible for distress to teachers stress.1, 18 Elevated stress levels interferes with teachers performance on teaching chores that require decision making, divided attention and working memory. 19

Stress related to work is due to mismatch between the requirements of the job and workers needs, capabilities, the resources. The work of a teacher is a not only physically but also mentally challenging, and stress is considered harmful when the employer shows emotional and physical responses to this stress. 18 Stress has negative impact on the performance of the job and depends on how one responds to the

stress. 19,20

Stress in long term can produce lasting, low level stress that continues to pour out extra stress hormones over long period. This causes depletion of body's reserves, weaken body's immune system and other problems. Thus it is important to conduct various programs to relieve stress in medical educators. It is very important for the future of the medical profession to take concrete steps to neutralize the various stressors in medical profession.

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Table 1: The job profile of teachers in percentage

	Preclinical and Paraclinical		Clinical		Average		P value
	Mean	S.D	Mean	S.D	Mean	S.D	
Field	35.26	14.2	23.51	11.31	34.39	14.75	0.0001
Admin	29.45	18.45	25.6	18.42	24.36	19.24	0.298
Teaching	57.19	24.99	29.45	20.16	43.32	22.57	0.0001
Research	10	6.54	14.5	7.08	12.26	6.81	0.0013

Table 2: Distribution of health related problems by teachers

Health Related problems	Preclinical and Paraclinical	Clinical	Total
Headache	10	14	24
Menstrual irregularities	1	5	6
Impaired appetite	5	9	14
Low sex drive	2	8	10
Irritability	15	23	38
Fatigue	21	23	44
Joint pain	16	17	33
Muscular aches	12	16	28
Low backache	19	16	35
Sleep related	6	11	17
Other	0	6	6

Table 3: Distribution of Stress Parameters in Clinical and Preclinical and paraclinical Teachers

Parameters of Stress	Clinical		Preclinical and Paraclinical		P Value
	Mean Score	SD	Mean Score	SD	
Autonomy	2.94	1.03	3.06	1.05	0.5600
Work Condition	3.21	0.92	3.17	1.62	0.8796
Communication and relationships	3.03	0.99	3.56	1.12	0.0130
Stress/Workout	3.22	1.41	3.37	1.53	0.6100
Attitude	3.39	0.81	3.86	0.59	0.0013
Support	3.02	0.88	3.29	1.01	0.1573
Self Confidence	3.50	0.64	3.74	0.49	0.0378
Social life	3.26	1.24	3.42	0.95	0.4706
Performing Meaningful Work	3.37	0.90	3.73	0.69	0.0270

Table 4: Gender Distribution of Stress in Teachers

Parameters of Stress	Female		Male		P Value
	Mean Score	SD	Mean Score	SD	
Autonomy	3.1	1.1	2.82	0.93	0.1709
Work Condition	3.81	0.78	3.24	0.89	0.0011
Communication and relationships	3.4	1.08	3.01	1.16	0.0877
Stress/Workout	3.29	1.51	3.18	1.39	0.7057
Attitude	3.16	1.09	3.24	0.65	0.6504
Support	3.19	0.9	3.08	0.98	0.5638
Self Confidence	3.98	0.64	3.19	0.62	0.0011
Social life	3.47	1.06	3.13	1.18	0.1368
Performing Meaningful Work	3.87	0.87	3.17	0.86	0.0001