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ACADEMIC STRESS IN TEACHING FACULTY OF REHMAN MEDICAL COLLEGE, PESHAWAR, KHYBER PAKHTUNKHWA

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ABSTRACT

Introduction: Relatively little research has been done on academic stress in the medical faculty both nationally and internationally. The present study was conducted to document whether teaching faculty of a private medical college developed academic stress due to their routine educational activities.

Materials & Methods: The 33 members of the teaching faculty (junior and senior faculty, heads of departments and administrators) of Rehman Medical College, Peshawar, Khyber Pakhtunkhwa attending a one-day workshop on Stress Management (October 10, 2014) were administered the10-items based Stress Self-Assessment Exercise Questionnaire after informed consent, to be filled and returned before the end of the workshop. Scoring was done as per authors' instructions. Categories of No Stress, Average Stress, Above Average Stress and High Stress were designated and assigned to respondents. Data were analyzed by SPSS 15.0 for descriptive statistics; comparisons were done by gender and designation through the Chi Square test, Independent Samples T test, and One-way ANOVA, keeping $p \leq 0.05$ as significant.

Results: The majority of faculty members (27, 81.8%) were having No Stress or Average Stress; greater stress levels were reported by female faculty and senior faculty members, whereas the heads of departments and administrators reported No Stress, perhaps related to better stress management practices.

Conclusion: Academic stress was not a significant finding among teaching faculty members of Rehman Medical College, Peshawar, Khyber Pakhtunkhwa, Pakistan.

Keywords: Stress, Psychological; Anxiety; Faculty; Job Satisfaction.

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INTRODUCTION

Stress is a condition of anxiety caused when the circumstances in one's life or the responsibilities and expectations, exceed one's abilities of dealing with it effectively.[1] It is caused by stressors that can arise according to the circumstances a person encounters in life. "Stressors can be physical, emotional, intellectual, social, economic, or spiritual".[2] There is frequent occurrence of stress at workplace which can have detrimental effects on the productivity and health of health care providers and the environment in which they work. Similarly, health professionals, humans like anybody else, when exposed to situations that puts demands on them greater than the available resources, predisposes them to stress and anxiety that need to be addressed.[3]

A comprehensive report on teachers in UK[4] defines stress as "the adverse reaction people have to excessive pressure or other types of demand placed upon them", and states a prevalence of stress in 41.5% of UK teachers. High levels of stress are quite prevalent in medical doctors and dentists who are engaged in academic teaching; some of the factors found responsible for this high levels of stress are increased load of work, inadequate autonomy and poor equivalence between power and responsibility.[5] Other studies show elevated levels of anxiety and effects on mental health leading to poor job satisfaction due to high levels of workplace related stress.[6]

It is also established that persistent stress can lead to burnout in medical teachers, a phenomena characterized by physical, emotional and mental exhaustion. Not all teachers suffer from burnout, but the continuous pressure of

increased work load in the light of changing curricula and implementation of changing teaching strategies with the changing curricula do take their toll. Secondly, teachers in medical schools are now required to work with integrated curriculum and lack of control on decision making result in burnout and stress.[6,7]

Furthermore, in the face of changing curricula, mentioned in some studies, a lot of role-related stressors exist for faculty. This can be seen in cases where the more the length of academic employment and the higher the rank the more stressors there are, some of which could be due to increased pressure as a result of position in the institute, poor resources, inadequate capacity building, insufficient autonomy for decision making etc.[8]

Rehman Medical College (RMC) located in Peshawar, Khyber Pakhtunkhwa, has implemented an integrated curriculum since its inception and as mentioned above, it likely predisposes the teaching faculty to greater stress due to increased workload that is inherent to such curricula.[6-8] As mentioned in the literature, integrated curricula require greater human resource, infrastructure, technology and time for implementation.[6] More human resource is needed to provide for the increasing load of work imposed by changing teaching methodologies in the light of changing curricula.[7] All that is coming forth in the field of medical education makes it very essential that more research is carried out to look into the problems of medical teaching faculty, identify their stressors and address them appropriately so as to find solutions and prevent burnout. This study was done to measure the levels of stress in the faculty of Rehman Medical College.

MATERIALS & METHODS

A one-day workshop was arranged for faculty of RMC by the Department of Medical Education (DME) and Behavioral Science (BS) on October 10, 2014. The faculty comprised teaching staff of RMC consisting of Administrators, Heads of Departments, Senior Professorial staff and Senior Lecturers; they were given presentations and real life scenarios on stress management. Data were collected with the assistance of a qualified psychologist.

At the start, the psychologist gave a presentation on stress and resilience to the participants. This was followed by a presentation of the DME on stressors and real life scenarios.

The assessment tool, which was a stress measurement scale consisting of ten questions developed by Girdin et al (Stress Self-Assessment Exercise, 1996)[9] was explained to the participants.

The ten questions were simple and direct, with each rated on a 4-point Likert scale, where A=Almost Always (4 points), B=Often (3 points), C=Seldom (2 points) and D=Almost Never (1 point). The scores range was 1-4, with "1" indicating minimum stress and "4" indicating maximum stress, as perceived by the respondents; scores from 25-40 indicated high stress, as designed by the authors.

After informed consent, the assessment tool was distributed to the faculty to be filled and returned before the end of the workshop. For simplicity in analysis, the scale was modified in marking and rather than rounding off the score obtained by participants to high stress level (score 25-40 as described by the authors), they were grouped into four categories of No Stress (below 25), Average Stress (25-30), Above Average Stress (31-35) and High Stress (36-40) levels. The total duration of workshop was 03 hours.

Data from the questionnaires were compiled and entered into SPSS version 15.0 for analysis. Calculations were done for both frequency distributions and Means ± SD. Group comparisons were done for Gender by Chi Square test and Independent Samples T test; for

comparing responses by Designations, the Chi Square test and One-Way ANOVA were used. A $p \leq 0.05$ indicated significance.

RESULTS

A total of 33 participants attended the workshop. Two participants preferred to remain anonymous and did not provide data for gender and designation; however they answered all the ten questions.

Regarding demographic data of participants shown in Table 1, most were males (24/31, 77.4%) and belonged to the category of Junior Teaching Faculty (18/31, 58.1%); other categories of faculty were Senior Teachers (06/31, 19.3%), Heads of D epartments (05/31, 16.1%), and A dministrators (02/31, 06.5%).

Table 1: Demographic data of workshop participants (n=33).

S. #	Demographic Variables	Frequency	Percentage
1.	**Gender (n=31)**		
	Males	24	77.4
	Females	07	22.6
2.	**Designation (n=31)**		
	Administrators	02	06.5
	HOD	05	16.1
	Senior Teachers	06	19.3
	Junior Teachers	18	58.1

Table 2 provides data for the frequency distribution of responses by participants to the ten questions. Out of a total of 330 responses, most responses tend to be in the 2 and 3 categories (246, 74.5%), with fewer responses related to 1 and 4 categories (84, 25.5%). Category 3 (125, 37.9%) and category 2 (121, 36.7%) had closely similar responses, as also categories 1 (43, 13.0%) and 4 (41, 12.4%). Chi square tests did not reveal significant differences by gender or designation for any question (all p values > 0.05).

Table 2: Distribution of frequencies of responses of participants (n=33).

S. #	Stress Questions	Responses on Scale of 1 - 4 (1= minimum stress; 4= maximum stress)			
		1 F (%)	2 F (%)	3 F (%)	4 F (%)
1.	Find yourself with insufficient time to do things you really want?	-	08 (24.2)	**20 (60.6)**	05 (15.2)
2.	Wish you had more support / assistance?	-	**14 (42.4)**	12 (36.4)	07 (21.2)
3.	Lack sufficient time to complete your work most effectively?	04 (12.1)	**18 (54.5)**	09 (27.3)	02 (06.1)
4.	Have difficulty falling asleep because you have too much on your mind?	11 (33.3)	**13 (39.4)**	08 (24.2)	01 (03.1)
5.	Feel people simply expect too much from you?	02 (06.1)	11 (33.3)	**15 (45.5)**	05 (15.1)
6.	Feel overburdened by professional work?	06 (18.2)	10 (30.3)	**13 (39.4)**	04 (12.1)
7.	Find yourself getting forgetful or indecisive because you have too much on your mind?	02 (06.1)	13 (39.4)	**16 (48.5)**	02 (06.1)
8.	Consider yourself to be in a high pressure situation?	05 (15.2)	**13 (39.4)**	11 (33.3)	04 (12.1)
9.	Feel you have too much responsibility for one person?	09 (27.3)	**12 (36.4)**	09 (27.3)	03 (09.1)
10.	Feel exhausted at the end of the day?	04 (12.1)	09 (27.3)	**12 (36.4)**	08 (24.2)
Total (330 responses)		43 (13.0)	121 (36.7)	**125 (37.9)**	41 (12.4)

Table 3 provides the Means and Standard Deviations of the scores obtained for each question, as well as the overall scores. The highest mean scores were obtained for Question 1 (2.91 ± 0.63), Question 2 (2.79 ± 0.78, Question 10 (2.73 ± 0.98) and Question 5 (2.70 ± 0.81). The total mean score of all questions was 24.97 ± 04.84, making 62.42% out of the maximum possible score of 40; this score made the 51.51st percentile rank.

The Independence Samples T Test did not show any significant differences of means by Gender for all questions, except question 7, where the females showed a higher stress response (males 2.38 ± 0.71, females 3.00 ± 0.58, p=0.045). Similarly, One-way ANOVA for differences by Designation did not reveal any significant differences (all p>0.05).

Table 3: Means and S.D. of responses of participants and total scores (n=33).

S. #	Stress Questions	Means	S.D.
1.	Find yourself with insufficient time to do things you really want?	2.91	0.63
2.	Wish you had more support / assistance?	2.79	0.78
3.	Lack sufficient time to complete your work most effectively?	2.27	0.76
4.	Have difficulty falling asleep because you have too much on your mind?	1.97	0.85
5.	Feel people simply expect too much from you?	2.70	0.81
6.	Feel overburdened by professional work?	2.45	0.94
7.	Find yourself getting forgetful or indecisive because you have too much on your mind?	2.55	0.71
8.	Consider yourself to be in a high pressure situation?	2.42	0.90
9.	Feel you have too much responsibility for one person?	2.18	0.95
10.	Feel exhausted at the end of the day?	2.73	0.98
11.	**Total Score (all questions)**	**24.97**	**04.84**
12.	Total Score Percentage (out of maximum score 40)	62.42	12.10
13.	Total Score Percentile	51.51	29.21

Table 4 shows the distribution of data based on Stress Score categories. Most of the faculty members (27, 81.8%) showed no or average stress (scores up to 30); 03(09.1%) were having above average stress and only 01(03.1%) was having high stress. No significant differences were recorded for Gender and Designations. Female faculty members reported higher stress levels (2/7, 28.6%) compared to male faculty members (2/24, 08.3%). As for Designations, the 02 administrators reported no stress, 01 (20%) head of department reported no stress and 04 (80%) reported average stress; 02 (33.3%) senior teachers reported no stress, 03 (50.0%) reported average stress and 01 (16.7%) reported above average stress; 12 (66.7%) junior teachers reported no stress, 03 (16.7%) reported average stress, 02 (11.1%) reported above average stress and 01 (5.5%) reported high stress.

Questions 7-10 elicited significant differences in responses based on Stress Score categories. These questions deal with the effects of perceived or actual stress. The Questions differed significantly in the frequency distributions of the 1-4 responses given by teachers that made the 04 Stress Score Groups, particularly in the response categories of 2 and 3 points. Question 10 had the highest number (08, 24.2%) teachers in the 4 points category.

Table 4: Distribution of data based on Stress Score categories (n=33).

S. #	Variables	Stress Score Groups				Total	p value
		No stress (n=17)	Average Stress (n=11)	Above Average Stress (n=04)	High Stress (n=01)		
1.	**Gender (n=31)**						0.272
	Males	14	08	02	-	24	
	Females	03	02	01	01	07	
2.	**Designation (n=31)**						0.299
	Administrator	02	-	-	-	02	
	HoD	01	04	-	-	05	
	Senior Teachers	02	03	01	-	06	
	Junior Teachers	12	03	02	01	18	
3.	**Questions with p≤0.05**						
	Q. 7						<0.001
	1	02	-	-	-	02	
	2	11	02	-	-	13	
	3	04	09	03	-	16	
	4	-	-	01	01	02	
	Q. 8						0.001
	1	05	-	-	-	05	
	2	10	03	-	-	13	
	3	02	07	02	-	11	
	4	-	01	02	01	04	
	Q. 9						<0.001
	1	08	01	-	-	09	
	2	07	05	-	-	12	
	3	02	05	02	-	09	
	4	-	-	02	01	03	
	Q. 10						0.006
	1	04	-	-	-	04	
	2	09	-	-	-	09	
	3	03	07	02	-	12	
	4	01	04	02	01	08	

DISCUSSION

Though teaching is not considered to be a very high-pressure profession, many studies have pointed out that teaching has its own associated stressors that affect the mental capabilities and job performance of teachers. It should be considered good practice for administrators to routinely include stress assessment in the daily management policy and protocols implemented in educational institutions. For teachers, the presence of daily or chronic stress can be disastrous, as the effect will be on naïve students and other faculty members, ultimately resulting in decline of educational standards of the institute.

Medical teachers comprise a unique group of educationists who tend to be exposed to greater levels and types of stress compared to other teachers. In addition to the stress of routine teaching, the medical teacher has to consider that learning by students involves future life-and-death decisions, thereby taking educational standards to altogether new heights. Many medical teachers also perform as

medical practitioners, something which makes it difficult for them to devote their full time to teaching, and also imposes additional stresses on an already busy daily schedule. It should therefore be expected that medical teachers would have high levels of stress in their professional performances.

The present study set out to document stress levels in a cross section of medical teachers of a high-profile private medical college that has successfully established new standards on integrated innovative teaching methodologies in the curriculum. Compared to traditional curricula, innovative curricula tend to demand higher standards of preparedness and interaction with students, as well as increased teaching sessions on the same topic. The workload of teachers is thus increased two to four fold, and increased human resource is required to more equitably distribute the work load, a condition that may not exist in most medical colleges, particularly private ones.

The present study indicated that most faculty members (81.8%) did not perceive work-related stress beyond the average stress levels. This group included all levels of Designations from Administrators to Junior Teaching Faculty. It is noteworthy that of the 27 persons in this category, 15 (55.6%) were Junior Teachers; among Junior Teachers, only 03 (16.7%) had above average or high stress levels. Similarly, above average stress level was found in only 01 (16.7%) of the 06 Senior Teachers. None of the 07 higher faculty members experienced stress beyond normal ranges. The one person experiencing high stress levels was a female Junior Faculty member who attributed at least part of her stress to issues unrelated to the work place.

There is a global paucity of studies done on documenting stress levels among medical teachers. A recent study[10] conducted on different levels of college teachers in public and private colleges of Pakistan concluded that teachers of private colleges experienced greater stress than their public counterparts. The author also concluded that this stress influenced the academic performance of the teachers. Although the present study did not compare public and private teachers, the finding of very little stress in medical teachers of a private medical college would tend to obviate the findings of this previous study.

A study done on Medical and Surgical residents in private teaching hospitals of Karachi, Pakistan[11] found that 56.3% suffered from stress, even though 75.6% were satisfied with their jobs; the residents attributed their stress to the long working hours of the residency program. Since such long working hours were not a feature of the present study, one can attribute the lower stress levels to acceptable working conditions.

An inverse relationship exists between job satisfaction, academic performance and stress levels, as demonstrated by a study from Bangladesh[12] on a cross section of medical teachers (n=25) from public and private medical colleges, in which 68% of teachers expressed very low to low levels of job satisfaction; teachers from public medical colleges were more dissatisfied. The main reasons were administrative issues, lack of professional development and incentives, and limitation of freedom in decision making. Perhaps, in the present study, these factors were catered for in a modern, innovative, private medical college, hence the smaller levels of stress found in the teaching faculty.

However, findings of the present study are in stark contrast to a study from India,[13] where medical teachers of private medical colleges showed higher job anxiety levels than those of public medical colleges ($p=0.002$). Furthermore, job anxiety was significantly more in clinicians than teachers of basic medical subjects ($p<0.010$), in teachers doing research plus teaching ($p<0.001$) and in female teachers ($p=0.016$). Though the authors do not provide plausible explanations for these findings, it may be that the job market is more stable in the public sector, for basic science subject teachers, and may have a male gender bias, whereas clinicians are dependent on the inflow of patients that can vary widely.

The fact that senior faculty members and administrators were having lower stress levels may be attributable to better stress coping mechanisms learnt through past years of experience, as well as better managerial skills of workload distribution, delegation of responsibility, supervisory roles, etc. A study from Malaysia[14] on Administrators and Senior Teaching Faculty of a private Islamic school identified various administrative and academic stressors in the subjects, along with the coping strategies adopted. The five main components identified as stressors were: lack of support in resolving conflicts, workload, working conditions, administrators' responsibilities and inadequate resources; stress combating methods adopted by subjects included: spending time with family, sharing problems with spouse, meditation, good diet, and regular exercise. Leisure activities, complementary and alternative medicine approaches have also been advocated.[2]

Female teaching faculty are considered to be at greater stress, as in the present study (females with above average stress 2/7, 28.6% versus males with above average stress 2/24, 8.33%), due to greater issues like motherhood, family pressures, gender bias in the workplace, physical limitations, etc. A recent study from India identifies stressors in working female teachers of a secondary school.[15]

Limitations of the study

A small sample size and volunteer bias (voluntary participation in the workshop) can cause the results to be non-representative of the entire Teaching Faculty of Rehman Medical College. Moreover workshop participants are likely to be faculty members who are more motivated to learn and participate in academic activities, hence likely to have lesser stress levels than other faculty members. A random sample of all faculty members of RMC would be advisable to determine with greater accuracy the true status of academic stress in the college.

CONCLUSION

A bit surprisingly, the majority of teaching faculty, including senior academic and institutional managers, did not suffer from academic or work-related stress; female faculty members reported higher stress levels than their male counterparts.

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