

OCCUPATIONAL STRESS AMONG DENTAL STAFF IN MANSOURA UNIVERSITY, EGYPT

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ABSTRACT

Objectives: To identify the probable sources, different symptoms and methods of coping occupational stresses among dental staff.

Materials and methods: This cross-sectional descriptive study was conducted in Faculty of Dentistry, Mansoura University. Data was collected using a self-administered close-ended questionnaire. The questionnaire basically consists of main four parts to assess demographic data, factors causing stress, stress symptoms, and methods of coping. The scientific reliability of the questionnaire was confirmed by three experts in the field. A pilot study was conducted on 20 participants to measure its internal consistency.

Results: The response rate was high (83,3%) . The most significant stress factor was the increased student number (78%, P=0.00) followed by publishing difficulty (73%, P=0.00).The main stress symptoms among the dental staffs were overtiring, anxiety, headache and elevated blood pressure and GIT manifestations. There was no statistically significant difference between male and female regarding to all stress symptoms. The most significant method of coping was praying (71%, P=0.00) followed by patience (67%). The least significance one was no response (3%).

Conclusion: Dental staff experienced many stress symptoms especially overtiring, anxiety, headache, elevated blood pressure. The main stressors were increased the student number. The most significant method of coping was praying.

KEY WORDS: Occupational stress, dental staff, stressors, stress manifestations.

INTRODUCTION

Stress related to occupation has many definitions over the years. The European Commission issued in its Guidance on Work-related Stress (2002)¹, and defined it as “a pattern of emotional, cognitive, behavioral and physiological reactions to adverse

and noxious aspects of work content, work organization, and work environment”. While, Balabaskar (2010)² defined the occupational stress as “the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources or needs of the worker”.

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The European Commission reported that the main sources of occupational stress are the workplace, working conditions in addition to personal factors.¹ Many researchers reported that the work-related stressors include workload, limited available time, difficulties in research, re-organization, educational revolution, administration styles, restructuring, and insufficient resources.³⁻⁵

There are many stressors face the academic stuffs, these stressors includes revising several student's assignments, antagonism, failures and poor relationships with other students , and dissatisfaction.⁶ Institutional stresses include full lecture rooms, semester system, continuing exams and insufficient resources to perform academic responsibilities.^{7,8}

The Stress has positive or negative effect. When stress enhances performance it leads to positive direction, gives self-confidence and ends with excellent results. While when stress moves in a negative track, it ends with psychological and physical responses.⁹

The negative side effects to work related stress can be physical, psychological or both.¹⁰⁻¹² It is usually categorized as being acute or chronic. National surveys in Australia and the United Kingdom have reported a serious and emergent problem of academic stress with several harmful consequences including ill health for academic staff and decreased job satisfaction.

Furthermore; the occupational stress has varies consequences which may be emotional manifestations as anxiety, disappointment, depression, fear and frustration, and poor self-esteem with a possible dangerous result being burnout. Behavioral manifestations such as loss of appetite, heavy smoking & alcohol and/or drug abuse, violence or interruption in sleeping pattern, possible displays of withdrawal symptoms. Physiological manifestations as cardiac disease, psychosomatic

disorders, fatigue, and depleted energy reserves. Emotional effects are often pioneers for behavioral and physiological manifestations of stress, and so these should not be analyzed as separate in nature.^{15,16}

There are many methods of coping with occupational stress; in a study assessing the job stress among university professors, the three methods most frequently used to cope with stress were resting/relaxing, sleeping, and practice sports. Additionally to that there were other methods of coping with stress such as praying, forgetting/ignoring the stressful situation, readjusting, setting new goals, meeting friends for advice, etc. It was surprised that no one mention of seeing counselors for help as a method of coping.¹⁷

Occupational stress is considered one of the occupational hazards that have many adverse consequences .These effects have many implications for the educational administrators and planners in our country. Dental staffs have an important role in the education and training of dental students, therefore the need for the appropriate governmental agencies to provide the necessary facilities for teaching and learning processes to go on smoothly in our educational institutions. From this point of view, it is worthy to recognize varies occupational stressors, the adverse effects and how to overcome such problem among dental staff in Egypt.

Objectives of the Study

This study was conducted to

- Identify the probable sources of occupational stresses among dental staff at Mansoura University
- Determine the different symptoms related to the occupational stress
- Recognize the methods of coping to overcome the occupational stress

MATERIALS AND METHODS

Locality and duration

This cross-sectional descriptive study was conducted in Faculty of Dentistry, Mansoura University from August to December 2018

Sample selection

All dental staff of both sexes who were working in the faculty of dentistry, Mansoura University at the time of the study and agreed to participate in the study was included. The two researchers distributed a set of 120 questionnaires to dental staffs. Out of these, 100 dental staffs returned the completely answered questionnaires.

Inclusion and exclusion criteria:

Dental staffs who had at least two years of experience as a lecturer were included. However, dentists who are only involved in the practical field as clinical instructors were excluded from the study.

Ethical approval

The purpose and benefits of the study were clearly discussed with the participants. The collected data were coded and safeguarded with high privacy. The participants could answer the questionnaire anonymously. This study was conducted after approval of the Ethical Committee of Faculty of Dentistry, Mansoura University under code number (25060318)

Data collection

Data was collected using a self-administered close-ended questionnaire; the questionnaire was used in the English language. It was distributed personally to the participants, they asked to fill the questionnaire and return it to the researcher on the same day. Only completely filled questionnaires were considered for the study. The questionnaire basically consists of main four parts to assess

demographic data, factors causing stress, stress symptoms, and methods of coping

Validity and reliability of the questionnaire had already proved by many researchers as Divaris (2012)¹⁸ and Riaz (2013)¹⁹. In addition to that; the scientific reliability of the questionnaire was confirmed by three experts in the field. Those experts described the validity of the questionnaire as optimal and all of its items were fairly good. The second stage was a pilot study on 20 participants to measure its internal consistency (Cronbach's alpha reliability coefficient was 0.552), they gave some comments regarding the question's structure and number, according to them some questions were deleted and others were modified. Again Cronbach's alpha reliability coefficient was determined to be 0.711.

Statistical analysis:

Data were collected, tabulated and then subjected to the statistical analysis using the Statistical Package for the Social Sciences (SPSS PC Version 20). All items in the questionnaire were loaded into SPSS V 20 for analysis. Different statistical analyses were applied to scrutinize the data and to find the answers to our research questions.

RESULTS

The stress among dental staff in Mansoura city was estimated, analyzed and tabulated to illustrate the following results:-

Table (1), and (fig.1) showed stress-related factors among dental staff. It appeared that the student number was the most significant stress factors (78%, $P=0.00$) followed by publishing difficulty (73%, $P=0.00$). While, the significantly least affect factors were targeting deadlines (24%, $P=0.00$), followed by long working hours (40%, $P=0.05$). The other stress factors were not statistically significant.

TABLE (1) Stress-related factors among dental staff

stress related factors	frequency	p-value from expected
New courses	50	1.00
Student number	78	0.00
Exam setting	42	0.11
Targeting deadline	24	0.00
Long working hours	40	0.05
Managers bullying	43	0.16
Poor salaries	42	0.11
Publishing difficulty	73	0.00
Many thesis supervision	49	0.84

Chi-Square test. The minimum expected cell frequency is 50.

P value ≤ 0.05 level.

Table (2), showed stress-related factors among different experience years, dental staff position and department. **For experience years**, the significant association was related to long working hours and publishing difficulty ($P \leq 0.05$). The post hoc test showed that dental staff with experience less than 10 years, showed statistically significant increased long working hours and publishing difficulty while dental staff with experience ranging from 10-20 years showed significantly increased publishing difficulty only. **For position**, the significant association was related to long working hours and poor salaries. The post hoc test showed that only lecturers suffering from statistically significant long working hours. **Finally, for the department**, the significant association was related to targeting deadlines and managers bullying. The post hoc test showed that only manager bullying factor was significantly increased in academic departments.

Table (3), showed stress symptoms among dental staff position, gender, smoking, experience years and department. **For position**, the significant association was related to overtiring, headache and blood pressure symptoms ($P \leq 0.05$). The post hoc test showed that the overtiring was significantly increased among professors and the headache was significantly increased among associate professors, who showed also a significant increase in blood pressure symptom. While in all of them (overtiring, headache and blood pressure) the lecturer was significantly not affected by these symptoms. **Gender** showed no statistically significant association with all stress symptoms ($P \geq 0.05$). **For smoking**, the significant association was related to depression, overtiring and blood pressure symptoms. The post hoc test showed that the overtiring was significantly increased among non-smokers only, while the other symptoms were significantly decreased. **For experience years**, the significant association was related to depression, concentration ability, overtiring and headache symptoms. The post hoc test showed that both overtiring and headache symptoms were significantly increased among dental staff with experience ranging from 10-20 years. **Finally, for the department**, the significant association was related to concentration ability and gastrointestinal tract symptoms. The post hoc test showed that only gastrointestinal tract symptoms were significantly increased in academic departments.

Table (4), and fig. (2) showed methods of coping stress among dental staff. It was appeared a significant effect towards all methods of coping ($P \leq 0.05$), with the most significant one was praying (71%, $P = 0.00$) and least significant one was no response (3%, $P = 0.00$).

TABLE (2) Stress-related factors among different experience years, position and department

Stress factors	Experience years			Position			Department	
	<10 years	10-20 years	>20 years	Lecturer	Associate professor	Professor	Academic	Clinical
1. yes	22	21	7	25	15	10	22	28
no	26	16	8	27	14	9	13	37
p-value	0.58			0.92			0.06	
2. yes	40	28	10	40	24	14	27	51
no	8	9	5	12	5	5	8	14
p-value	0.35			0.69			0.88	
3. yes	17	17	8	16	15	11	13	29
no	31	20	7	36	14	8	22	36
p-value	0.39			0.06			0.47	
4. yes	16	6	2	15	5	4	13 b	11 b
no	32	31	13	37	24	15	22 a	54 a
p-value	0.12			0.55			0.02	
5. yes	26 b	11 a	3 a	27 b	10 a	3 b	15	25
no	22 a	26 a	12 a	25 a	19 a	16 a	20	40
p-value	0.02			0.02			0.67	
6. yes	19	18	6	18	13	12	20 b	23 b
no	29	19	9	34	16	7	15 a	42 a
p-value	0.68			0.09			0.04	
7. yes	19	20	3	25 a	14 a	3 b	16	26
no	29	17	12	27 a	15 a	16 a	19	39
p-value	0.07			0.03			0.58	
8. yes	40 b	22 b	11 a	42	21	10	25	48
no	8 a	15 a	4 a	10	8	9	10	17
p-value	0.05			0.06			0.79	
9. yes	27	13	9	23	18	8	16	33
no	21	24	6	29	11	11	19	32
p-value	0.10			0.25			0.63	

Note all statistical analysis done by Pearson Chi-Square test except for cells containing ≤ 5 done by Fisher's Exact test post hoc test done by adjusted p-value (Bonferroni method)

Each letter denotes a subset of categories whose column proportions do not differ significantly from each other.

P value ≤ 0.05 level.

1. New courses, 2. Student number, 3. Exam setting, 4. Targeting deadline, 5. Long working hours, 6. Managers bullying, 7. Poor salaries, 8. A publishing difficulty, 9. Many thesis supervision

TABLE (3) Stress symptoms among dental staff

Stress symptoms	Position			Gender		Smoking		Experience years			Department	
	Lecturer	Associate professor	Professor	Male	Female	Smoker	Non-smoker	<10 Years	10-20 Years	>20 Years	Academic	Clinical
Anxious												
Yes	23	15	11	17	32	11	38	23	16	10	17	32
No	29	14	8	27	24	6	45	25	21	5	18	33
p-value	0.56			0.07		0.16		0.32			0.95	
Depressed												
Yes	11	11	3	14	11	8 b	17 b	9 a	16 b	0 b	7	18
No	41	18	16	30	45	9 a	66 a	39a	21 a	15a	28	47
p- value	0.17			0.16		0.02		0.00			0.39	
Unable to concentrate												
Yes	19	5	8	12	20	4	28	21b	6 b	5 a	4 b	28b
No	33	24	11	32	36	13	55	27a	31 a	10a	31a	37a
p-value	0.12			0.37		0.57		0.02			0.00	
Overtired												
Yes	24 b	20 a	17 b	27	34	2 b	59 b	22b	28 b	11a	25	36
No	28 a	9 a	2 a	17	22	15 a	24 a	26a	9 a	4 a	10	29
p-value	0.00			0.95		0.00		0.01			0.12	
Headache												
Yes	18 b	22 b	13 a	27	26	9	44	19b	25 b	9 a	21	32
No	34 a	7 a	6 a	17	30	8	39	29a	12 a	6 a	14	33
p-value	0.00			0.14		0.99		0.03			0.30	
Blood pressure												
Yes	12 b	22 b	3 b	16	21	0 b	37 b	15	15	7	12	25
No	40 a	7 a	16 a	28	35	17 a	46 a	33	22	8	23	40
p-value	0.00			0.91		0.00		0.48			0.68	
G.I.T												
Yes	17	12	12	16	25	7	34	20	12	9	20b	21b
No	35	17	7	28	31	10	49	28	25	6	15a	44a
p-value	0.07			0.40		0.99		0.19			0.02	

Note all statistical analysis done by Pearson Chi-Square test except for cells containing ≤ 5 done by Fisher's Exact test post hoc test done by adjusted p-value (Bonferroni method)

Each letter denotes a subset of categories whose column proportions do not differ significantly from each other.

TABLE (4) Methods of coping stress among dental staff

Coping methods	Frequency	P-value from expected
Exercising	25	0.00
Sleeping	39	0.03
Ignoring	21	0.00
Praying	71	0.00
New goals	34	0.00
Self-encourage	34	0.00
Patience	67	0.00
Friends help	23	0.00
Working hard	25	0.00
No response	3	0.00

Chi-Square test. The minimum expected cell frequency is 50.

P value ≤ 0.05 level.

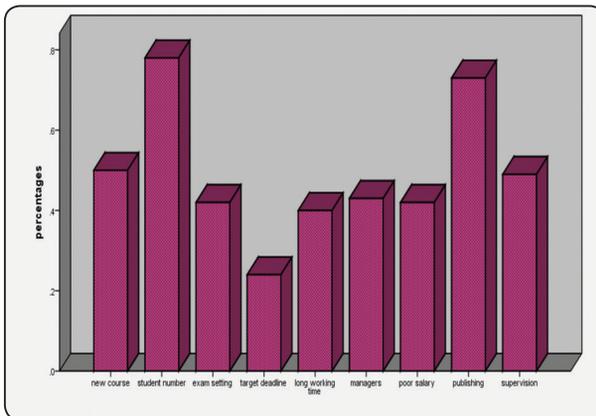


Fig. (1) Stress-related factors among dental staff

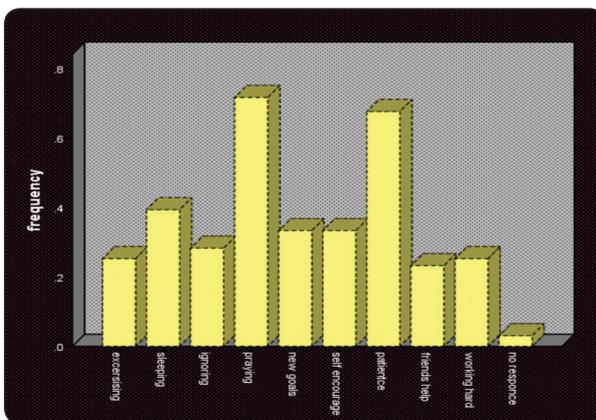


Fig. (2) Methods of coping stress among dental staff

DISCUSSION

It is now well established that both dental staff and practitioners perceive and experience high levels of stress. The examination of sources correlates and consequences of stress have become a popular area of research in dental education (18). Therefore this study was conducted to assess the occupational stress among dental staff at Mansoura University.

In our study, the response rate was high (83,3%) which is quietly similar to that of K. Divaris et al (88%) and Riaz et al (86.3%). While it was higher than Vic Catano (27%). The higher response rate could be attributed to the same day retrieval of questionnaires from participants.

Concerning the stressors among dental staffs, our results concluded that the most significant stressor was increased the student number followed by publishing difficulty in all participants. While dental staff with years of experience less than 10 years reported long working time as a significant stressor.

Increase the number of students being the major source of stress to dental staff in the present study. Increased number of students consequently leads to increased teaching hours, exams preparation, exams marking, increased counseling, course advising, and project supervision. This enrolment occurred without a corresponding increase in teaching personnel so it was the main stressor among our study.

Dental staff in a position as a lecturer with experience less than 10 years have a busy schedule in lectures and supervision of practical session with long working time which considered the main stressor among them.

These results coordinated with Omoniyi’s study (2013) (21) to investigate the sources of stress among University Lecturers. The main source of stress includes: Poor research incentives, poor condition of lecturers offices, lack of facilities, and students project supervision.

Furthermore, Sofie and Stella (2015)²² found that the most common stressors were increased workloads, need to hit targets/deadlines, and long working hours, especially among lecturer as working hours for some lecturers, were extremely high, that is more than 51 hours per week.

In contrast to our result, a study was performed on Academic Staff of Canadian University, the result reported that the main stressors were role conflict, role ambiguity, work-life balance, fairness administration, fairness rewards.²⁰ Additionally, the Result of another study showed that the lack of proper time management was the major stressor.¹⁹

Another study was performed in Nigeria for analysis of stress among lecturer. The result reported that the main stressors with the greatest effect on the respondents' performance were a workload and inadequate teaching facilities.²³

Regarding stress symptoms among dental staff, our study revealed that overtiring, anxiety, headache, elevated blood pressure and GIT manifestations were the most prominent symptoms among dental staff. These manifestations were more significant in professor and associate professor with experience rate ranged from 10-20 years and in the academic department than a practical department with no significant difference between male and female.

These findings may be explained by the fact that, lecturers with experience year less than 10 years have less number of thesis supervision than professors, and also they have more ability to cope with and withstand occupational stress, therefore, the stress symptoms were less among them. The finding that the dental staff in academic department suffered from more stress than those in the practical department may be due to manager bullying factor which was significantly increased in academic departments.

These findings were matched with Adeoye (2002)²⁴ and BADA (2012)²⁵ who found out that there was no significant difference in the stress between male and female. In addition to that, another

two studies were performed to assess the occupational stress among university staff and their results regarding stress symptoms were in agreement with our results.^{22,26}

On the other hand, Amina and Raymond (2014)²⁷ reported different symptoms related to occupational stress. These symptoms included depression, Social withdrawal, and Constant tiredness, anger, and hostility, and Increase smoking, alcohol or drug use.

Mika et al (2014)²⁸ disagreed with our results as they found that females have significantly higher stress symptoms than male and the lecturers scored significantly higher stress symptoms than professors.

Regarding the methods of coping stress among dental staff, various methods were assumed. While the most significant method in our study was praying followed by patience and then sleeping. While the least significant were no response, friends help and working hard.

These findings were in accordance with salami (1994)²³ who found that resting/relaxing, sleeping and practice sports and other activities were the most prominent methods reported by the respondents in coping with stress. While, The least prominent methods used were meeting friends for help or advice and working harder

On the other hand, Rosman 's study(2012)²⁹ showed that majority of their participants used behavioral self-control techniques for coping job stress, while the minor percentage of the participants practiced networking and social support techniques for coping job stress.

CONCLUSION

Based on the results of our study, it can be concluded that dental staff among Mansoura University experienced many stress symptoms especially overtiring, anxiety, headache, elevated blood pressure, and GIT manifestations.

The main stressors were increased the student number, publishing difficulty, and long working time. The most significant methods of coping with stress were praying and patience

RECOMMENDATIONS

This study aims to help the Ministry of Higher Education and administrators of universities in Egypt to handle and minimize occupational stress among dental staff and give them the guideline for stress management programs and training session. The prevention and management of occupational stress need interventions at organizational level. Depending on the results of the present study; it is recommended that the workload of the lecturers should be reduced. It is essential to provide more funds available to dental staff for research and career development purposes. Also, there should be the employment of more academic staff to overcome the continuous increase in student numbers. There should be relaxation centers on the University system to reduce the stress faced by the University staff.

STUDY LIMITATIONS

The dental staff of single university cannot actually represent the entire dental staff of our country, so generalization of the result is one of its drawbacks and more studies should be performed in other universities in Egypt to generalize our findings.

CONFLICT OF INTEREST

There is no conflict of interest to be declared

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