

## STRESS FACTORS AMONG DENTAL POSTGRADUATE RESIDENTS OF LAHORE, PAKISTAN

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### **ABSTRACT:**

#### **OBJECTIVES:**

*The aim of this study was to identify the stress factors among dental postgraduate residents of Lahore, Pakistan.*

#### **METHODOLOGY:**

*A cross-sectional study was conducted using non-probability convenient sampling techniques. Total 150 dental postgraduate residents were enrolled in this study. Questionnaire was composed of questions regarding stress factors and the influence of stressors on individuals. The data was analyzed; Chi-square test was used to find the statistical association of level of stress with the demographic factors (gender, marital status, and accommodation), professional characteristics (working hours and practice) and impact on the individuals (mood change, weight change and headache). The level of significance was set at  $P \leq 0.05$ .*

#### **RESULTS:**

*Total 150 individuals responded with a mean age of 29 years (SD +/-2.96). Male to female ratio was 1:2.5. The most prevalent factors that contributed to stress were post-graduate examination (81%), clinical case presentations (80%), competition for higher performance (61%), inconsistency of feedback by supervisors (59%), research program (55%) and fear of failure to treat patients (53%). More than half of the respondents (69%) suffered from mood swings and (65%) from tension headaches followed by clenching and bruxism in nearly half of the residents (50%), musculoskeletal problems (49%) and weight changes (48%) with  $p$ -value $<0.05$ .*

#### **CONCLUSION:**

*Post-graduate examination, competition for higher performance and increased workload are the most common stressors. There is a need to come up with effective strategies in the postgraduate curriculum to tackle stress.*

**KEYWORDS:** *Perceived Stress, Stressor Domains, Dental, Surveys, Questionnaire*

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**INTRODUCTION:**

Stress in medical terms is defined as the biological reaction to any adverse internal or external stimulus, physical, mental, or emotional, which tends to disturb the organism's homeostasis<sup>1,2</sup>. Stress can have a wide range of effects depending on personality type of individual<sup>2-4</sup>. Stressors in dentistry include increased workload, highly demanding clinical performance, challenging patient interactions, strain of financial issues, course requirements, competitive environment, and family obligations<sup>5</sup>. These stressors adversely affect physical, psychological, and social well being of dental residents<sup>6,7</sup>. Inability to cope up with these stressors leads to emotional exhaustion, burnout, and poor quality of life<sup>7,8</sup>. Stressors in dental postgraduate residents leads to anxiety, depression, poor performance, irritability, drug abuse and suicidal incidents<sup>6,8</sup>. In this era with an increase in the number of graduating dentists, a competition has developed among dentists to achieve peak of success and financial stability<sup>1,6,9</sup>. Numerous studies have reported increased stress in dentists with accompanying symptoms of muscle fatigue, nervousness, anger, frustration, and tension headache<sup>10-12</sup>. Studies were conducted among Pakistani medical and dental undergraduate students but to our knowledge no such study has been conducted for Pakistani dental postgraduate residents<sup>8</sup>. The rationale of this study is to focus on stressors among dental postgraduate residents in our region. It will help the postgraduate students to identify the stressors and deal with these conditions in a healthy manner. It will also encourage higher

education departments to incorporate stress management components in the dental education system.

**METHODOLOGY:**

A cross-sectional study was conducted using a self-administered questionnaire by dental postgraduate residents across Lahore, Pakistan, during an estimated time of one month. Ethical approval was obtained from the Ethical Review Board. Non-probability convenient sampling technique was used. Total 150 dental postgraduate residents were enrolled in this study. Dental postgraduate residents irrespective of their year or specialty of practice were included in our study. Dental postgraduate residents who are not currently doing their training due to any reason were excluded. Informed consent was taken. Questionnaire was divided into three components. First component gathered information about demographic data, second component about stress factors and third about influence of stressors on individuals. Internal reliability of the questionnaire was assessed with Cronbach alpha value of 0.86 for 15 questions regarding stress factors. All the questions were close-ended using Likert scale scores from 1-5 for each stressor and multiple-choice questions scored 0 or 1 for effect of stress on individuals. A score of 15-34 was considered low, 34-54 as moderate and 54-75 as high stress score for each stressor<sup>13</sup>. Response to the questionnaire was assessed by SPSS-23. Descriptive statistics were applied for socio-demographic variables. The frequencies and percentages were calculated for gender, marital status, accommodation, and year of residency, sleeping hours, and working hours. Chi-square test was used to find the statistical association of levels of stress with the demographic factors, professional characteristics, and impact on the individuals (mood change, weight change and headache) with the level of significance  $P \leq 0.05$ .

**RESULTS:**

Total 150 dental postgraduate residents responded to the survey form out of which 106 were female and 44 males. Mean age of respondents was 29 (SD +/-2.96) years. More than half of the post-graduate residents in our study were day scholars (80%) and working in

private setup (56%). Majority of the residents were from final and second year of residency that represents both the pre-intermediate module and post-intermediate module group. Relation of demographic and professional characteristics with stress score is given in Table 1 and Table 2. Most common stress factor identified was post-graduate exam (81%) followed clinical case presentations (80%), competition for higher performance (61%), inconsistency of feedback by supervisors (59%), research program (55%)

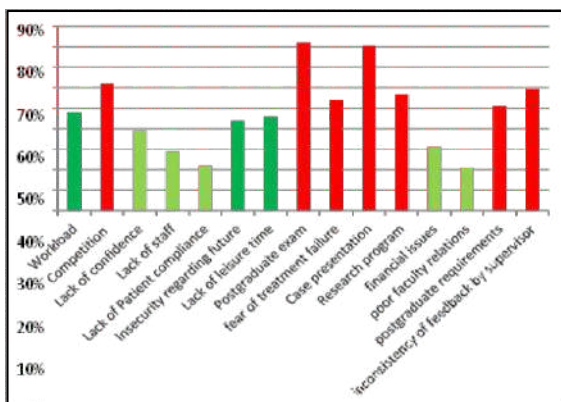
and fear of failure to treat patients (53%), as shown in Figure 1. In response to a question, 85.3% of individuals responded that they feel stressed as shown in Figure 2. Only 31% of the postgraduate residents were familiar with the techniques to relieve stress whereas 69% of the postgraduate residents were not familiar. Effects of stressors on individuals were analyzed using Chi-square statistics with significant ( $p < 0.05$ ) results as shown in Table 3.

**Table 1: Relationship of Demographic and Professional Characteristics with the Stress Level**

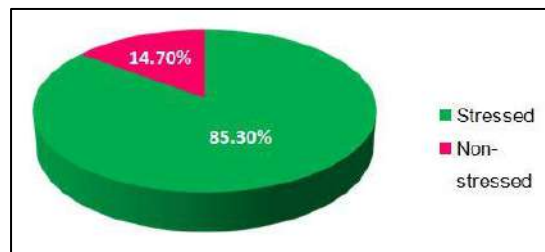
Variable	Categories	Frequency N (%)	Chi-square Statistic (P-value)
Gender	Male	44 (29%)	5.581 (0.061)
	Female	106 (71%)	
Marital Status	Single	71 (47%)	26.014 (< 0.001*)
	Married	77 (52%)	
	Widow/Divorce	2 (1%)	
Accommodation	Day Scholar	120 (80%)	9.599 (0.008*)
	Hostel	30 (20%)	

**Table 2: Professional Characteristics and their Relationship with the Stress**

Variable	Categories	Frequency N (%)	Chi-square Statistic (P-value)
Practice	Government	66 (44%)	1.207 (0.547)
	Private	84 (56%)	
Working Hours	<48 hours	18 (12%)	0.740 (0.691)
	>48 hours	132 (88%)	
Sleeping Hours	<8 hours	102 (68%)	1.778 (0.776)
	8-10 hours	36 (24%)	
	>10 hours	12 (8%)	



**Figure 1: Stress Factors**



**Figure 2: Percentage of Stressed Residents**

Table 3: Impact of Stressors on Individuals

Variables	Sub Groups	Stress Levels			Total	Chi-Square (P-Value)
		Low (n)(%)	Moderate(n)(%)	High(n)(%)		
Mood Change	Yes	4 3.7%	53 48.6%	52 47.7%	109	0.02*
	No	8 19.5%	22 53.7%	11 26.8%	41	
Weight Change	Yes	0	27 36.5%	47 63.5%	74	0.01*
	No	12 15.8%	48 63.2%	16 21.1%	76	
Headache	Yes	4 4%	50 49.5%	47 46.5%	101	0.02*

The variables are significantly associated with stress level.

## DISCUSSION:

Dental profession is one of the most stressful professions<sup>14</sup>. Every year many dentists are inducted in residency programs in different specialties to pursue their career. The eagerness and enthusiasm to excel in profession brings along many factors contributing to physical, mental, and emotional stress<sup>14</sup>. Stress factors not only affect an individual's well being but also lower the performance at work<sup>15</sup>. Top three most stressors identified in our study were post-graduate examination (81%), clinical case presentations (80%) and higher competition for better performance (61%). This is attributed to the nature of residency and is consistent with the studies conducted in India and Malaysia<sup>5,16</sup>. Inconsistency of feedback by supervisors (59%), research program (55%) and fear of failure to treat patients were the next most common stressors reported. According to a study conducted by Sloan and Cooper increased work-load in dentistry, repetitive nature of the work, the fears and anxieties of treating patients and concerns about payment, may all contribute to dentists being the most stressed of health professionals<sup>6,17,18</sup>. The female students had a higher level of stress relative to their male counterparts. This is reported by many previous studies. Reason behind this higher stress reported can be due to psychological and socio-cultural differences<sup>19</sup>. More than half of the respondents reported mood changes, weight changes, tension headache and bruxism. Meira et al, reported that stress

had a negative influence on the quality of life of dental postgraduate residents<sup>20</sup>. It is recommended that workshops should be included in the course to create awareness on recognition of the stressors and management of stress factors must be taught. Preventive strategies can be practiced at both the individual and organizational levels. Stress management education should be incorporated in post-graduate programs.

## LIMITATIONS:

Major limitation of this study is the difference in proportion of male to female respondents. This is due to more women dental postgraduate residents than men in Pakistan. This study should be conducted on a larger scale in future to identify the massive effects of stress on dental postgraduate residents.

## CONCLUSION:

The study reveals an increase in stress due to multiple factors during the post-graduate training period. Stress is more experienced by females than males with post-graduate examination as the most frequent reported stress factor. These stressors affect the individuals leading to tension headaches, bruxism, musculoskeletal problems, and mood swings. There is a need to come up with effective strategies in the postgraduate curriculum to tackle stress and burnout.

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