

MENTAL HEALTH STATUS OF POSTGRADUATE RESIDENTS OF DIFFERENT DENTAL SPECIALITIES IN PAKISTAN: A COMPARATIVE STUDY

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ABSTRACT

Objectives: To compare the mental health of postgraduate residents undergoing fellowship training in different dental specialties in Pakistan.

Methods and materials: A form was developed that consisted of demographic variables i.e. age, gender, marital status, monthly income and type of lodging along with Depression Anxiety and Stress Scale (DASS-21). This form was distributed electronically amongst the postgraduate residents enrolled in different dental specialties in Pakistan.

Results: 156 out of 187 participants who met the inclusion criteria were selected for this study. Considering participants with these negative emotions ranging from moderate to extremely severe to be positive for the above mentioned mental health issues then 50.7% of postgraduate residents were depressed, 59% residents had anxiety and 45.4% of residents were stressed. Female students had an increased rate of depression, anxiety and stress. There was no influence of the difference in dental speciality and other demographic variables on the mental health of residents.

Conclusion: A considerable number of postgraduate residents enrolled in different fields of speciality in dentistry are facing depression, anxiety or stress. When residents from different fields of dental specialties were compared, they showed no significant difference in their mental health status. Female students are more prone to mental health issues, whereas marital status, year of training, monthly income and type of lodging had no significant effect on the mental health of residents.

Key words: Anxiety, Depression, DASS-21, Operative Dentistry, Oral and Maxillofacial Surgery, Orthodontics, Periodontology, Prosthodontics, Stress.

INTRODUCTION

Mental well-being is the ability of an individual to recognize his abilities, manage the normal stresses of life and be a productive member of the community by effectively and efficiently performing his or her duties.¹ Negative emotions like depression, anxiety and stress can affect a person's ability to perform optimally under demanding situations. Mental health,

although not a new concern, has been neglected for a long time due to the stigma attached to it and is considered to be the most neglected health problem in developing countries with depression being the most prevalent amongst all other mental health issues.² A recent study has shown that in Pakistan alone more than 15 million people are affected by some sort of mental health issue.⁴ According to World Health Organization, depression affects more than 264 million people around the world and is defined as "persistent sadness and lack of interest or pleasure in previously rewarding or enjoyable activities".³ Anxiety is a feeling of fear or restlessness and is the body response to fear or anticipation of the future concern.⁵ According to a systemic review conducted in 2014. Data from

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11 studies revealed that medical students all around the world except for North America had signs and symptoms of anxiety ranging between 7.7% and 65.5%.⁶ A growing body of research on students' mental health issues highlights the need for educators to address how mental health could affect students how they can be helped to cope with their issues.

Health care professionals are at high risk of having mental health issues especially during the COVID-19 pandemic outbreak.^{7,8} Work stress amongst dentists has been linked to seven main factors/areas that include financial aspects, work pressure, patient contacts, work contents, career aspects, team aspects as well as professional and personal life.⁹ An increased level of depression and stress has been reported in the dental student in comparison with the general population¹⁰⁻¹²

Postgraduate residents of all specialties are required to undergo clinical training and participate in various other academic activities. Moreover, long working hours, management of non-cooperative patients, examinations, family responsibilities, additional financial constraints, and future employment uncertainty add to the high-stress circumstances. A review of available literature reveals that several studies have been conducted to evaluate the mental health of Orthodontics residents¹³⁻¹⁵ as well as other medical and dental postgraduate residents.¹⁶⁻¹⁸ No study has been conducted to understand the mental health and well-being of postgraduate residents enrolled in fellowship training programs in different dental specialties in Pakistan.

The objective of this study is to evaluate and compare the mental health of postgraduate residents enrolled in fellowship training in different dental specialties in Pakistan using a short version of Depression Anxiety Stress Scale (DASS-21) which is a modification of the original 42 item survey (DASS-42).¹⁹ By understanding and identifying the psychological issues of these young dental graduates, they can be counseled and helped to deal with these issues and be provided with sufficient support to cope with their stresses and put their best effort to become better clinicians to serve their community.

MATERIALS AND METHODS

This was a descriptive cross-sectional study in which the response of 156 postgraduate residents

was recorded. All the residents who are currently enrolled in FCPS program for training in Oral and Maxillofacial Surgery, Orthodontics, Operative Dentistry, Prosthodontics or Periodontology were included in this study. Those participants who had completed their training, had some known chronic illness or were known patients of any psychological disorder were excluded from this study.

A short version of Depression Anxiety Stress Scale (DASS-21) which is a modification of the original 42 item survey (DASS-42) was used to evaluate the mental health of postgraduate residents enrolled in FCPS training program for different dental specialties. It is a frequently used tool that has an open access and comprises of total 21 questions with 7 questions individually allocated to assess depression, anxiety and stress. Each question was answered on likert scale with 0 used for "Did not apply to me at all", 1 meaning "Applied to me to some degree, or some of the time", 2 interpreted as "Applied to me to a considerable degree or a good part of the time" and 3 for "Applied to me very much or most of the time". The Sum of responses of 7 questions designated for the specific emotion was multiplied by 2 and interpreted as shown (Table I).

A form was developed on "Google forms" that comprised of demographic variables; age, the speciality of training, gender, marital status, year of training, monthly income in rupees and type of accommodation of a trainee along with Depression Anxiety and Stress Scale (DASS-21).

Non-probability consecutive sampling technique was employed and after approval from the ethical review committee of Margalla Institute of Health Sciences, Rawalpindi the developed form was distributed via social media amongst the postgraduate residents of above mentioned specialties from all over Pakistan. A consent form was attached with the questionnaire for those who wanted to participate in this study. Data of this study was collected from November 2020 to June 2021.

Data was analyzed using Statistical Package for the Social Science (IBM SPSS, Version 25, Armonk, NY). Frequencies were calculated for individual variables. Mann-Whitney tests were performed to compare two group variables (gender, marital status and accommodation of trainees) and Kruskal-Wallis ANOVA was used for comparison of depression,

anxiety and stress in different dental specialties, year of training and their monthly income in rupees. While comparing the data, p-value of <0.05 was considered to be statistically significant.

RESULT

A total of 187 post graduate residents filled the questionnaire online. 31 subjects were excluded on account of their completion of training, any known psychological or chronic illness or any major unfortunate event in past six months hence rendering an effective sample of 156 residents. The distribution of participants according to specialty of training is depicted in Figure 1.

Most of the residents who took part in this study had ages between range of 24 and 36 years with a mean of 28.23 ± 1.890 years and a median of 28 years (Table II). Frequency and percentage was calculated for demographic variables (Table III). Depression, anxiety and stress score for the postgraduate residents irrespective of their speciality was calculated. The results were categorized based on DASS-21 scale and are shown in Figure 3.

Another aim of this study was to compare the mental health status of postgraduate residents of different dental specialties and result showed that there are no significant difference of depression (P=

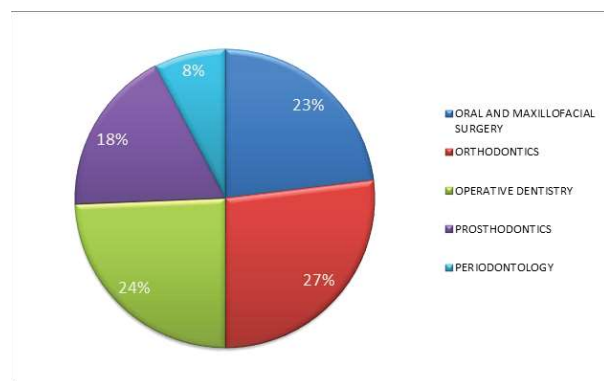


Fig 1: Distribution of participants according to training speciality

Table I. DASS severity rating

Severity	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

0.534) anxiety (P=0.820) or stress (P=.368) between residents of different specialties. We also compared association of various demographic variables with mental health status and it was interpreted from our results that females had significant increased level of depression (p=0.038), anxiety (p=0.038) and stress (p=0.009).while marital status of residents, their year of training, their monthly income and difference in accommodation showed no statistically significant

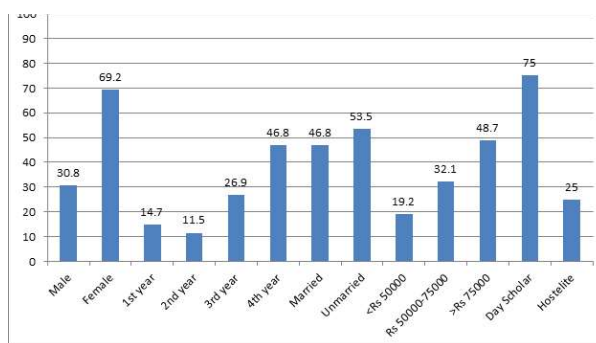


Fig 2: Frequency of Demographic variables

Table III. Demographic variables

Variables	n (%)
Speciality	
Oral and Maxillofacial Surgery	36 (23.1)
Orthodontics	42 (26.9)
Operative dentistry	38 (24.4)
Prosthodontics	28 (17.9)
Periodontology	12 (7.7)
Gender	
Male	48 (30.8)
Female	108 (69.2)
Year of training	
1st Year	23 (14.7)
2nd Year	18 (11.5)
3rd Year	42 (26.9)
4th Year	73 (46.8)
Marital status	
Married	73 (46.8)
Unmarried	83 (53.5)
Monthly income (Rupees) :	
< Rs 50000	30 (19.2)
Rs 50000-75000	50 (32.1)
>Rs 75000	76 (48.7)
Residence of trainee	
Day Scholar	117 (75)
Hostelite	39 (25)

correlation with mental health of residents. (Table IV,V and VI)

DISCUSSION

Stress anxiety and depression are negative emotions that are often thought to be associated with many professions. Dentistry is no exception to this and studies have shown that dental students and young dental graduates are more prone to mental health issues than general population.¹⁰⁻¹⁶ Many of young graduates aspire to specialize in a particular field for which they enroll in a training programme. Evaluation of negative emotions in postgraduate residents has been done globally, but no such research has been conducted in Pakistan. This study was conducted to evaluate the levels of depression, anxiety and stress of postgraduate residents enrolled in FCPS training programme in Pakistan using depression, anxiety and stress scale (DASS-21)

and compare these issues amongst residents on the basis of their specialty, year of training, marital status, socio-economic status and on basis of whether they were day-scholars or hostilities. The results of this study not only provide an insight into the psychological challenges faced by dentistry resident but also identify factors which predispose towards

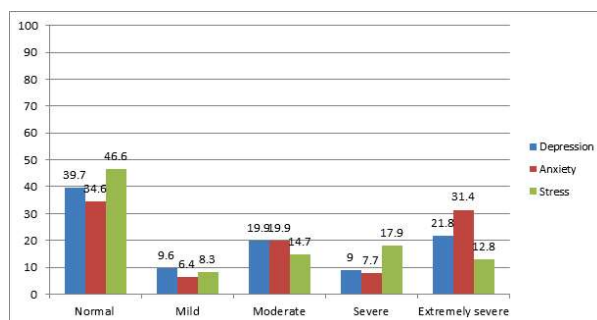


Fig 3: Distribution of participants according to severity of anxiety, depression and stress

Table IV. Summary statistics and group-wise comparisons for the Depression scale

Variable	Mean total score	95% Confidence Interval	Standard Error	Standard Deviation	Significance (P value)
Speciality					N.S(0.534)
Oral and Maxillofacial Surgery	12.94	9.03-16.86	1.926	11.558	
Orthodontics	16.43	12.53-20.33	1.930	12.506	
Operative dentistry	17.05	12.51-21.59	2.241	13.815	
Prosthodontics	14.57	9.80-19.35	2.327	12.315	
Periodontology	12.33	6.26-18.41	2.762	9.566	
Gender					0.038*
Male	12.13	9.05-15.20	1.529	10.594	
Female	16.46	14.00-18.93	1.242	12.911	
Year of training					N.S (0.128)
1st Year	9.48	5.73-13.22	1.806	8.660	
2nd Year	16.33	10.29-22.38	2.866	12.161	
3rd Year	16.38	12.48-20.28	1.929	12.504	
4th Year	15.89	12.84-18.94	1.529	13.068	
Marital status					N.S (0.885)
Married	15.18	12.26-18.10	1.463	12.503	
Unmarried	15.08	12.39-17.78	1.354	12.338	
Socio-economic status					N.S (0.155)
< Rs 50000	19.00	13.91-24.09	2.489	13.633	
Rs 50000-75000	14.64	11.15-18.13	1.735	12.265	
>Rs 75000	13.92	11.23-16.61	1.351	11.778	
Residence of trainee					N.S (0.306)
Day Scholar	15.73	13.44-18.01	1.153	12.470	
Hostelite	13.33	9.42-17.24	1.932	12.064	

N.S= Not Significant; * = $p < 0.05$

depression, anxiety and stress.

Amongst the residents who fulfilled the inclusion criteria for this study, the largest proportion of the sample constituted of trainees of Orthodontics (26.9%) followed by Operative Dentistry, Oral and Maxillofacial Surgery, Prosthodontics and Periodontology (24.4%, 23.1%, 17.9% and 7.7% respectively). This disparity in the sample corresponds to the total number of postgraduate residents enrolled for training in different dental specialties with periodontology being the least saturated of all. The majority of the participants were females (69.2%) as compared to males (30.8%) which were per the ratio of females in the Pakistani dental fraternity.²² There was no significant discrepancy of marital status amongst the participants, whereas a significant difference in income was seen. To evaluate the effect of the difference in accommodation of a postgraduate

trainee, a comparison was made between hostilities and day scholars in which most of the postgraduate residents were day scholars (75%) as compared with hostilities (25%) which can be due to a fact that most of the dental graduates prefer to do residency while staying at their homes and those who can't find the opportunity in their home town, tend to move out.

According to our study, amongst the postgraduate residents currently enrolled in FCPS programme in different dental specialties; 50.7 % (n=79) trainees were having symptoms of depression ranging from moderate to extremely severe, 59% (n=92) residents had anxiety ranging from moderate to extremely severe and 45.4 % (n=71) residents had moderate to extremely severe levels of stress in their life as represented in Figure 3. Speciality training is an extremely physically and mentally demanding period in life of a healthcare professional and these figures

Table V. Summary statistics and group-wise comparisons for the Anxiety scale

Variable	Mean total score	95% Confidence Interval	Standard Error	Standard Deviation	Significance (P value)
Speciality					N.S (0.820)
Oral and Maxillofacial Surgery	13.06	9.48-16.63	1.761	10.567	
Orthodontics	13.62	10.31-16.93	1.640	10.631	
Operative dentistry	14.84	11.17-18.52	1.814	11.185	
Prosthodontics	11.64	8.19-15.09	1.681	8.895	
Periodontology	13.33	5.76-20.91	3.441	11.919	
Gender					0.038*
Male	14.42	11.47-17.37	1.466	10.156	
Female	19.70	17.32-22.09	1.203	12.503	
Year of training					N.S (0.157)
1st Year	9.83	6.14-13.51	1.778	8.526	
2nd Year	12.22	6.60-17.85	2.666	11.311	
3rd Year	15.86	12.74-18.98	1.544	10.009	
4th Year	13.42	10.88-15.97	1.278	10.921	
Marital status					N.S (0.966)
Married	12.99	10.59-15.39	1.204	10.285	
Unmarried	13.78	11.45-16.12	1.175	10.707	
Socio-economic status					N.S (0.423)
< Rs 50000	15.67	11.94-19.39	1.822	9.980	
Rs 50000-75000	13.00	10.14-15.86	1.422	10.055	
>Rs 75000	12.79	10.29-15.29	1.257	10.960	
Residence of trainee					N.S (0.285)
Day Scholar	13.71	11.80-15.62	.963	10.416	
Hostelite	12.51	9.02-16.01	1.726	10.777	

N.S= Not Significant; * = p<0.05

affirms that.

Female students exhibited statistically significant increased symptoms of depression anxiety and stress ($P < 0.05$) and this might be linked with their status as “home-makers”, social pressures that they have to face and other family responsibilities. Males on the other hand handle certain stresses more effectively and are generally considered to be carefree and the results of this study show that. A recent study conducted by Chako A and Tikku T¹³ supports our result as stress amongst females was significantly increased as compared to males. Studies by Madhan et al¹⁴ and Al-Shayea¹⁵ showed no statistically significant association between depression, anxiety and stress with gender. Dhanya Raghunathan²⁰ also found no association between stress and gender. Acharya S¹⁰ on the other hand reported in his study that male students were more prone to depression.

The marital status of a postgraduate resident can be responsible for distress and deterioration in their well being due to additional responsibilities during the training period but our study showed that the marital status of postgraduate residents in our study did not affect their mental health ($P > .05$) and this can be due to the reason that both married and unmarried have different kinds of stresses and while marital responsibility can result in additional burden for a postgraduate resident but the companionship of a partner compensates for it. This result was also supported by a study conducted by Chako A and Tikku T.¹³ On the other hand, Madhan et al¹⁴ reported lower levels of all three of these negative emotions in married students. Al-Shayea¹⁵ reported a lower level of anxiety in married trainees, depression and stress did not seem to be affected by their marital status while Dhanya Raghunathan²⁰ findings and

Table V. Summary statistics and group-wise comparisons for the Anxiety scale

Variable	Mean total score	95% Confidence Interval	Standard Error	Standard Deviation	Significance (P value)
Speciality					N.S (0.368)
Oral and Maxillofacial Surgery	16.89	12.94-20.83	1.943	11.656	
Orthodontics	18.81	14.84-22.78	1.966	12.742	
Operative dentistry	20.95	16.89-25.00	2.002	12.344	
Prosthodontics	15.86	11.39-20.32	2.175	11.508	
Periodontology	15.17	8.39-21.94	3.079	10.667	
Gender					0.009*
Male	14.48	12.47-16.49	1.016	10.554	
Female	13.41	11.75-15.07	.840	10.486	
Year of training					N.S (0.156)
1st Year	13.04	8.93-17.16	1.984	9.513	
2nd Year	18.44	11.90-24.98	3.100	13.152	
3rd Year	20.05	16.60-23.50	1.707	11.065	
4th Year	18.44	15.45-21.42	1.498	12.799	
Marital status					N.S (0.735)
Married	17.48	14.76-20.19	1.362	11.638	
Unmarried	18.60	15.88-21.32	1.366	12.446	
Socio-economic status					N.S (.089)
< Rs 50000	22.40	18.08-26.72	2.111	11.560	
Rs 50000-75000	17.32	13.97-20.67	1.665	11.771	
>Rs 75000	16.87	14.08-19.65	1.398	12.187	
Residence of trainee					N.S (0.143)
Day Scholar	16.15	16.52-20.92	1.111	12.016	
Hostelite	18.08	12.23-20.08	1.937	12.099	

N.S= Not Significant; * = $p < 0.05$

also reported married trainees to be less depressed as compared to those who were non-married.

FCPS is a 4 years training program in which a resident undergoes clinical training, conducts researches, and participates in various other academic activities. Depression anxiety and stress at different stages and year of training were evaluated and showed no significant difference ($P>0.05$) in this study. A study by Chako A and Tikku Ts study¹³ supported our results and showed that stress amongst residents is not correlated with their year of speciality training ($P>0.05$). Al-Shayea¹⁵ also found no significant difference between the students in various years of the programs for all three emotional states. Madhan et al¹⁴ on the other hand stated that residents of 1st year trainee residents are less prone to depression anxiety and stress as compared to residents of 2nd and 3rd year since they had lesser responsibilities and a considerable time to complete their academic tasks. No significant difference was found between residents of 2nd and 3rd year.

Many residents have to leave their homes and reside in the hostel while undergoing their speciality training. Homesickness can be linked with increased emotional burden but our study negated that and results showed no significant correlation of residence or trainee with their mental health issues. Dhanya Raghunathan¹⁹ in his study also mentioned that residents, whether living in a hostels or as a day scholars had no influence on their levels of depression.

CONCLUSION

This study has highlighted that a large proportion of postgraduate residents of different dental specialties are dealing with some sort of mental health issues. There was no significant difference found while comparing mental health of post graduate residents of different dental specialties. Female students are more prone to mental health issues as compared to males. Marital status of postgraduate residents have no correlation with their mental health status. Year of training had no effects on these negative emotions. Monthly income was not responsible for their mental health issues. Lodging of residents had no significant effect on their mental health.

An interceptive approach should be applied by setting up counseling cells with proper support and guidance system. Thorough psychological evalua-

tion of postgraduate residents during an early stage of their training should be done so that they can be guided accordingly and can reach their maximum productivity.

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