

BURNOUT IN POST GRADUATE STUDENTS ENROLLED IN BASIC DENTAL SCIENCES

GHAFOOR S.,¹ CHAUDHRY S.² AND KHAN J. S.³

Departments of ¹Oral Biology, ²Oral Pathology, ³Medical Education, University of Health Sciences, Lahore – Pakistan

ABSTRACT

Background and Objectives: Burnout has been documented among undergraduate dental students and also dental practitioners, however, the evidence on post graduate students is less and none is reported regarding the Pakistani post graduate dental students. The present study was designed to assess this issue in postgraduate dental students UHS Lahore.

Methods: All the post graduate students enrolled in non-clinical dental sciences such as Oral Pathology, Oral Biology, Dental Materials and Immunology at the University of Health Sciences (n=30) completed the Maslach Burnout Inventory (MBI). Burnout was measured using the scales of “emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA). Means and standard deviation was computed for all the responses on the questionnaire. Means of subscale of MBI were taken and stratified according to gender and marital status. Mann-Whitney-U test was used to analyze association of individual burnout items with marital status and gender. In all analysis p-value of ≤ 0.05 was taken as statistically significant.

Results: The post graduate students scored high for EE and PA domain while had exhibit less than threshold scores for DP. Males scored for EE and PA domains but less for DP domain as compared to female students. Single students scored high for EE and PA domains as compared to the married students. The highest ranked item was found to be “I feel used up at end of the work day” while the lowest rank was “I really do not care what happens to some recipients”.

Conclusion: Burnout scores were exhibited for emotional exhaustion and personal accomplishment domains among post graduate students but could not be reported for the depersonalization domain. Gender and marital status can be an influencer regarding an individual’s state of burnout.

Key words: Post graduate, Dental, Students, Maslach Burnout Inventory, Non-clinical, Marital status, Gender.

INTRODUCTION

Student population is often vulnerable to stressful situations during their pursuit of professional achievements in a competitive environment. Prolonged and high levels of stress are of a concern as stress affects the personal, psychological and professional well-being of dental students harming their quality of life and professional performance and is reported to lead to burnout.¹⁻⁴

Burnout is an abnormal response of an individual to the experience of long-term work-related exhaustion and diminished interest.^{5,6} It is a term that describes the development of emotional exhaustion, depersonalization and reduced professional accomplishments among professionals.^{5,7} Although burnout among dentist has been believed to be a “professional syndrome”,⁸⁻¹⁴ recent evidence indicates that manifestations of burnout have been detected in undergraduate dental students.^{2,3,7,15,16} A recent study also indicate

cases of burnout among undergraduate Pakistani dental students.¹⁷ Similarly, burnout has been reported among post graduate dental students.¹⁸⁻²¹ Previous studies report that Maslach Burnout Inventory (MBI) is an effective tool to measure burnout among undergraduate and postgraduate dental students.^{5,18,19,22} Although gender differences can influence the state of burnout^{18,20} no report is available regarding influence of marital status regarding burnout in postgraduate studies. Few studies report positive influence of social support in buffering the stressful states among the undergraduate medical or dental students.²³⁻²⁵ There is currently no study that indicates burnout exists among the Pakistani post graduate students, thus the objective of the study is to ascertain evidence of burnout among post graduate students in a public sector health university and to report the influence of gender and marital status on burnout among dental post graduate students.

PARTICIPANTS AND METHODS

Following ethical approval by the Institutional Ethical Committee of this cross-sectional survey, all the post graduate dental students officially enrolled in M. Phil or PhD programs of non-clinical dental sciences that included Oral Pathology, Oral Biology, Dental Materials and Immunology were contacted and considered as the target population ($n = 34$). Contact rate was 100%. All the post graduates were explained the purpose of the study and a written informed consent was taken. The participation was voluntary and those unwilling to participate were excluded from the study. In addition, any questionnaire that was less than 50% filled was also excluded. The first part of the questionnaire consisted of demographic details of the participants such as age, gender and marital status, while the second part had the Maslach Burnout Inventory (MBI) comprising of 22 items.

Burnout was measured in its three dimensions that included “emotional exhaustion (EE) having nine items, depersonalization (DP) having five items and personal accomplishment (PA) having eight items. These items were ranked on a seven-point Likert scale by the study participants, where “0” meant “never”, 1: “a few times a year”, 2: “monthly”, 3: “a few times a month”, 4: “weekly”, 5: “a few times a week” and 6: “every day”.^{5,18,19} These domains were not mentioned on the questionnaire. The questionnaire did not contain any personal details of the participants thus keeping identity of the respondent as anonymous. The distribution and collection of the questionnaire was also done by a third person who was not the part of the study. All the study participants were asked to complete the questionnaire either with pen or pencil. This study used threshold scores to identify the burnout “cases” in emotional exhaustion ($EE > 26$), depersonalization ($DP > 12$) and those with reduced personal accomplishment ($PA < 32$). Based on these cut-offs, individuals having high scores on EE and DP and low

scores on PA were considered as burnout “cases”.^{6,18,19} Certain items were rephrased to the current student’s situation where deemed essential, such as “I feel I’m working too hard on my studies”.³

Statistical Analysis

Data was analyzed using IBM SPSS version 21. Age was calculated as mean and standard deviation (SD). Median, mean and standard deviation was computed for all the responses on the questionnaire. Descriptive statistics was used to find out means of the three subscales of MBI and then to stratify burnout domains according to means scores for gender and marital status. Mann-Whitney-U test was applied to analyze individual burnout items with regards to gender and marital status. In all analysis p-value of ≤ 0.05 was considered as statistically significant.

RESULTS

The mean age of the participants was 27.80 ± 3.16 years. A total of 30 questionnaires were collected back and the response rate was found to be 88%. It was found that 18 participants were females and 12 were males. There were 16 participants that were single while 14 were married.

Based on the cut-off criteria, it was found that dental post graduates scored more for EE and PA domain to be considered as burnout “cases” but not for DP domain. Gender difference was noted in the EE and PA domains where males scored more as compared to the female participants. Males exhibited decreased scores as compared to females in the DP domain. Overall, both genders did not exhibit burnout “case” in the DP domain. When considering marital status, it was found that more burnout “cases” were present in the EE and PA domain in single participants as compared to the married ones. No burnout “case” was found in DP domain with regards to marital status (Table 1).

Mann-Whitney U-test showed a statistically signi-

Table 1: Mean of the three sub scales of MBI, and means of subscales stratified by gender and marital status.

Category		Dimensions					
		Emotional Exhaustion		Personal Accomplishment		Depersonalization	
		Mean (SD)	Median	Mean (SD)	Median	Mean (SD)	Median
Over all		27.41 (11.59)	30	27.82 (9.76)	28	06.56 (5.94)	5.0
Gender	Female	25.29 (11.13)	26	26.06 (8.86)	23.5	08.11 (6.52)	6.0
	Male	30.41 (12.04)	30	30.16 (10.78)	33.5	04.25 (4.18)	3.5
Marital Status	Single	29.69 (12.28)	30.5	24.56 (8.81)	22.5	07.00 (7.09)	3.5
	Married	24.61 (10.47)	28	32.16 (9.58)	34.5	06.07 (4.50)	5.0

Proportions were calculated using the threshold used in MBI – High emotional exhaustion score > 26 , Reduced personal accomplishment score: < 32 , High depersonalization score > 12 .

ficant association of some response items of MBI to the marital status, however no association of individual burnout items could be found with regards to gender. It was found that more single participants found their studies frustrating “few times a month” as compared to married participants. Also more single participants felt “few times a month” that they were at the end of their rope as compared to the married participants who felt that same “few times a year”. Similarly, unmarried participants scored less for a better understanding of feelings of their colleagues as compared to the married ones who felt it “weekly” as compared to singles who felt it “few times a month” (Table 2).

The response item with the highest burnout score among the participants was found to be “I feel used up at end of the work day” which was followed by “I can easily understand how my

Table 2: Statistically significant items of MBI with regards to marital status by Mann-Whitney-U test.

Domain & Response Item	Marital Status	N	Mean Ranks	P-value
<i>Emotional Exhaustion</i>				
I feel frustrated with my studies	Single	16	18.72	0.028
	Married	14	11.82	
I feel like I 'm at the end of my rope	Single	16	17.75	0.049
	Married	13	11.62	
<i>Personal Accomplishment</i>				
I can easily understand how my recipients feel about things	Single	16	11.81	0.012
	Married	14	19.71	

Table 3: Mean scores (SD) and ranks of all the items of MBI.

Sr. No	Response Items	N	Median	Mean (SD)	Domain-Wise Highest Mean Rank	Over all Mean Rank
<i>Emotional Exhaustion</i>						
1.	I feel emotionally drained from work	30	3.5	3.40 (1.75)	4	8
2.	I feel used up at the end of the workday	30	4.5	4.03 (1.75)	1	1
3.	I feel fatigued when I get up in the morning and have to face another day on job	30	4.0	4.00 (1.64)	2	3
4.	Working with people all day is a strain for me	30	2.5	2.17 (1.72)	9	17
5.	I feel burnout from my work	30	3.0	3.07 (1.78)	5	11
6.	I feel frustrated with my studies	30	3.0	2.80 (1.84)	6	14
7.	I feel I am working too hard on my studies	30	3.5	3.53 (1.85)	3	5
8.	Working with people directly, puts too much pressure on me	30	2.0	2.43 (1.83)	8	16
9.	I feel like I 'm at the end of my rope	29	2.0	2.34 (2.29)	7	15
<i>Personal Accomplishment</i>						
10.	I can easily understand how my recipients feel about things	30	3.5	3.93 (1.78)	1	2
11.	I deal very effectively with problems of my recipients	30	4.0	3.57 (1.57)	6	9
12.	I feel I am positively influencing other people’s lives through my work	29	4.0	3.27 (1.94)	5	7
13.	I feel very energetic	30	4.0	3.56 (1.55)	7	10
14.	I can easily create relaxed environment with my recipients	29	4.0	3.62 (1.76)	3	5

15.	I feel exhilarated after working closely with my recipients	30	3.5	3.53 (1.77)	4	6
16.	I have accomplished many worthwhile things in this job	30	3.0	2.90 (1.82)	8	13
17.	In my work, I deal with emotional problems very calmly	30	3.0	3.50 (2.05)	2	4
<i>Depersonalization</i>						
18.	I feel I treat some recipients as if they were impersonal objects	30	0.0	1.00 (1.41)	4	20
19.	I've become more callous toward people since I took this job	30	1.0	1.37 (1.61)	2	18
20.	I worry that this job is hardening me emotionally	30	2.0	2.53 (2.22)	1	12
21.	I really do not care what happens to some recipients	30	0.0	0.77 (1.38)	5	21
22.	I feel recipients blame me for some of their problems	30	0.0	0.93 (1.74)	3	19

N = number of responses. The highest burnout scores are ranked from highest to lowest

recipient feel about things". The item with the least score was found to be "I really do not care what happens to some recipients" (Table 3).

DISCUSSION

The present study examined burnout among 30 post-graduate dental students in non-clinical sciences in a public sector university in Lahore. It was found that majority burnout "cases" fell in EE and PA domain as compared to DP domain where negligible burnout "cases" could be found. These findings provide knowledge and insights regarding burnout in postgraduate dental education.

One of the possible long-term outcome of occupational stress is professional burnout that has been well-reported in undergraduate students and dental professionals.^{3,10,13,15,21} One of the key characteristic of burnout is emotional exhaustion.^{5,6} Other features may include development of negative, cynical attitude towards patients or colleagues and a tendency to evaluate oneself and own accomplishments negatively.³ One finding of this study was the presence of a possible high prevalence of EE and reduced PA among the study participants. This finding is similar to a previous studies on post graduate students.^{18,19} Similar to a previous study on Spanish post graduate students, we found that male students had more burnout as compared to the female students and single students had more burnout as compared to the married students. The age group of our study participants was also found to be similar to that in the Spanish study.²¹ In contrast, other studies on post graduate students suggest that female post graduate dental students present with

more burnout "cases" as compared to the males.^{18,19} The possibility that we found male students to have higher scores for burnout could be due to the social setup of the Pakistani society where men are supposed to be the beard-earners and financial supporter of the family. These roles and responsibilities put them under more stress and ultimately to a state of burnout as compared to females. Similar to the Spanish study, it can be speculated that in general women are more inclined to seek peer and family support and thus can present with less burnout.²¹ However, direct comparisons with other studies has to be made with caution due to an array of socio-cultural, personal, extra-curricular, and curricular factors that may interplay with the development and report of burnout symptoms in an individual.¹⁹

We also found that single individuals had higher burnout scores as compared to the married one. Marriage is a primary source of social support and good spousal support can acts as a buffer and facilitator during specific times of needs, beneficially shaping the individual's reaction to any stressful state.^{23,24} The effects of marriage with regards to burnout in postgraduate studies are not known. It was observed that single students scored higher on items such as "I feel frustrated with my studies" and "I feel like I'm at the end of my rope" as compared to the married students suggesting that social support can play important roles in reducing burnout among the students. Although not directly comparable, positive effects of social support have been documented with regards to stressful situation among the undergraduate medical and dental students.^{23,24} This social support can be in form of

interpersonal relationships, emotional support and informational support.²⁴ It is therefore necessary to understand the emotional demands of the students and devise support strategies for both unmarried and married students.

We found the study participants scored almost none for depersonalization in all categories. Depersonalization is characterized by a negative attitude and cynical response towards clients, reaching to a point where the latter ones are considered as simple object.²¹ This could be seen as positive finding among the post graduate students where they prefer working together and had positive attitudes towards their colleagues or staff. This attitude is also evident from the fact that item "I really do not care what happens to some recipients" had the lowest score.

It was also noted that the highest burnout score came for the item "I feel used up at end of the work day". It is essential that post graduate educationist must look into the responses of the students on feeling on being used up at end of the work day to formulate positive reforms within the educational settings. Addressing the issues of emotional well-being and risk of burnout of a post graduate student cannot be over-emphasized as these young individual form the future professional streams. In order to improve the emotional and professional well-being of post graduate students, it would be a promising strategy to identify and provide support to such individuals that may be vulnerable to burnout early during their professional career.¹⁹ Also the dental educational program must undergo reforms that better facilitate post graduate students to overcome burnout during their studies.

It is **concluded** that higher scores of burnout are present among the post graduate dental students for emotional exhaustion and personal accomplishment domains. Burnout could not be reported for the depersonalization domain. Gender differences and marital status can be an influencer regarding an individual's state of burnout. It was found that female students were less burnout as compared to the males and single students showed more burnout as compared to the married ones for certain burnout response items.

Authors' Contribution

SG: Conceived, designed, did acquisition of the published data, collection of data and did manuscript writing. SC: Provided critical analysis and interpretation of data through intellectual output and did manuscript writing. JSK: Provided critical analysis and did final approval of the manuscript.

Conflict of Interest Statement

Authors declare no conflict of interest.

ACKNOWLEDGMENTS

We would like to thank all the study participants as

without their voluntary participation, this study was not possible. We would also like to thank the Assistant Librarian University of Health Sciences Lahore who provided well in time published material for review and consideration.

Grant Support and Financial Disclosure

None.

REFERENCES

1. Alzahem AM, Van der Molen HT, Alaujan AH, De Boer BJ. Stress management in dental students: a systematic review. *Advances in medical education and practice*, 2014; 5: 167-176.
2. Pöhlmann K, Jonas I, Ruf S, Harzer W. Stress, burnout and health in the clinical period of dental education. *European journal of dental education*, 2005; 9 (2): 78-84.
3. Gorter R, Freeman R, Hammen S, Murtomaa H, Blinckhorn A, Humphris G. Psychological stress and health in undergraduate dental students: fifth year outcomes compared with first year baseline results from five European dental schools. *European Journal of Dental Education*, 2008; 12 (2): 61-68.
4. Jurkat H, Höfer S, Richter L, Cramer M, Vetter A. Quality of life, stress management and health promotion in medical and dental students. A comparative study. *Deutsche medizinische Wochenschrift*, 1946; 136 (23): 1245-1250.
5. Maslach C, Jackson SE. The measurement of experienced burnout. *Journal of organizational behavior*. 1981; 2 (2): 99-113.
6. Maslach C, Jackson SE, Leiter MP, Schaufeli WB, Schwab RL. *Maslach burnout inventory: Consulting Psychologists Press Palo Alto, CA*; 1986.
7. Davis EL. Dental student stress, burnout, and memory. *Journal of dental education*, 1989; 53 (3): 193-195.
8. Baran RB. Myers Briggs Type Indicator, burnout, and satisfaction in Illinois dentists. *General dentistry*, 2005; 53 (3): 228-234.
9. Rada RE, Johnson-Leong C. Stress, burnout, anxiety and depression among dentists. *The Journal of the American Dental Association*, 2004; 135 (6): 788-794.
10. Gorter RC, Albrecht G, Hoogstraten J, Eijkman MA. Professional burnout among Dutch dentists. *Community dentistry and oral epidemiology*, 1999; 27 (2): 109-116.
11. Osborne D, Croucher R. Levels of burnout in general dental practitioners in the south-east of England. *British dental journal*, 1994; 177 (10): 372-377.
12. Murtomaa H, Haavio-Mannila E, Kandolin I. Burnout and its causes in Finnish dentists. *Community dentistry and oral epidemiology*, 1990; 18 (4): 208-212.
13. Adelson R. Professional burnout and the operative dentist. *Journal of dental education*, 1984; 48 (2): 98-101.
14. Humphris G, Lilley J, Kaney S, Broomfield D. Burnout and stress-related factors among junior staff of three dental hospital specialties. *British dental journal*. 1997; 183 (1): 15-21.
15. Badran D, Al-Ali M, Duaibis R, Amin W. Burnout among clinical dental students at Jordanian universities/L'épuisement professionnel chez les étudiants en dentisterie des universités jordaniennes. *Eastern Mediterranean*

- health journal, 2010; 16 (4): 434-437.
16. Humphris G, Blinkhorn A, Freeman R, Gorter R, Hoad-Reddick G, Murtomaa H, et al. Psychological stress in undergraduate dental students: baseline results from seven European dental schools. *European journal of dental education*, 2002; 6 (1): 22-29.
 17. Sufia S. Burnout among Undergraduate Dental Students at a Public Academic Institution in Karachi, Pakistan. *JPDA*. 2016; 25 (04): 131-136.
 18. Divaris K, Lai CS, Polychronopoulou A, Eliades T, Katsaros C. Stress and burnout among Swiss dental residents. *Schweizer Monatsschrift fur Zahnmedizin = Revue mensuelle suisse d'odonto-stomatologie = Rivista mensile svizzera di odontologia e stomatologia*. 2012; 122 (7-8): 610-615.
 19. Divaris K, Polychronopoulou A, Taoufik K, Katsaros C, Eliades T. Stress and burnout in postgraduate dental education. *European Journal of Dental Education*, 2012; 16 (1): 35-42.
 20. Shetty A, Shetty A, Hegde MN, Narasimhan D, Shetty S. Stress and burnout assessment among post graduate dental students. *Nitte University Journal of Health Science*, 2015; 5 (1): 31-36.
 21. Alemany Martínez A, Berini Aytés L, Gay Escoda C. The burnout syndrome and associated personality disturbances. The study in three graduate programs in Dentistry at the University of Barcelona. *Medicina Oral, Patología Oral y Cirugía Bucal*. 2008; 13 (7): 444-450.
 22. Al-Sowaygh ZH. Academic distress, perceived stress and coping strategies among dental students in Saudi Arabia. *The Saudi dental journal*, 2013; 25 (3): 97-105.
 23. Katz J, Monnier J, Libet J, Shaw D, Beach SR. Individual and crossover effects of stress on adjustment in medical student marriages. *Journal of Marital and Family Therapy*, 2000; 26 (3): 341-351.
 24. Muirhead V, Locker D. Canadian dental students' perceptions of stress. *Journal of the Canadian Dental Association*, 2007; 73 (4): 323.
 25. Musser LA, Lloyd C. The relationship of marital status and living arrangement to stress among dental students. *Journal of dental education*, 1985; 49 (8): 573-578.