

Marital Status as a Stress Indicator in Postgraduate Dental Students

Sarah Ghafoor, Saima Chaudhry, Junaid Sarfraz Khan

Abstract

The objective of this study was to explore perceived causes of stress and to analyse the influence of marital status and gender as indicators of these causes. Modified Graduate Dental Stress Environment Questionnaire was used on postgraduate students of basic dental sciences at a public sector university in Pakistan. Mean±SD was calculated for all stress-related items and statistical analysis was done through Mann Whitney-U test and multiple linear regression analysis. Out of 53 stress-related items, 15 (28.3%) factors were perceived as mildly stressful, 33 (62.26%) as moderately stressful and 9.4% as highly stressful. A significant relationship was found between 6 stress-related items and marital status. In the questionnaire majority of these items came under the domain of self-efficacy. Single students were more stressed in four areas relating to future career, academic responsibilities and confidence in their decision-making ability, while married students experienced higher stress when competing for research experience in their learning programmes.

Keywords: Stress, Marital Status, Dental, Postgraduate, Pakistan. <https://doi.org/10.5455/JPMA.4571>

Introduction

Student population has always been exposed to stressful situations in a competitive environment in pursuit of professional achievements. Prolonged and high-level stress affects the personal, psychological and professional wellbeing of dental students, harming their quality of life and professional performance. In some situations it leads to a burnout, which in turn is a major concern for the dental educators.¹

Educational experiences of postgraduate (PGs) students differ greatly from undergraduate students mainly due to differences in age, previous exposure to dental school environment and financial, social and career responsibilities, making them a unique sub-group in the dental education environment.² PGs often serve as "role

Department of Medical Education, University of Health Sciences Lahore, Pakistan.

Correspondence: Sarah Ghafoor. e-mail: sarahghafoor@uhs.edu.pk

models" for their undergraduate colleagues; however less attention is given to understanding problems associated with their emotional or psychological well-being, as indicated by the scarcity of data in this area. Most of the research is focused on clinical postgraduate dental students,^{2,3} while postgraduate students in basic dental sciences have not been given much attention. Since stress is related to work demands, a difference in the type and level of stress between students of these two streams of dental specialisations can be expected. While factors such as lack of leisure time or the pressure of academic, research or clinical activities have mostly been the focus of researchers to analyse perceived stress,^{2,4} the influence of marital status in postgraduate dental education has been ignored as a stress indicator. Even among undergraduate dental students, data with regards to marital status (married or single) in relation to stress is controversial.^{5,6} Similarly, among PGs the data with regards to differences in gender on the perception of stress remains controversial.^{2,4} The objective of the present study was to report perceived causes of stress and the influence of marital status and gender on the perception of stress among postgraduate students of basic dental sciences (PGs-B). No study has evaluated perceived causes of stress, especially the effects of social measures such as marital status among PGs-B. The findings can help understand social factors that can be of significance in student selection, designing student support systems and in the assessment of their overall educational experience.

Methods and Results

Modified version of previously validated Graduate Dental Environment Stress (GDES) questionnaire was used to measure perceived causes of stress among dental graduates.²⁻⁵ Following ethical approval, universal sampling was done that included all PGs-B students enrolled in MPhil or PhD in non-clinical sciences programmes of Oral Pathology, Oral Biology, Dental Materials and Immunology at the University of Health Sciences Lahore at the time of study, from December 2017 to May 2018. The duration of the study was six months. Informed consent was obtained in writing from voluntary

student participants after assurance was given of confidentiality and anonymity. A cover letter explaining purpose of the study, response-filling procedure and a validated modified version of Graduate Dental Environment Stress (GDES) questionnaire were distributed among the study participants that consisted of age, gender, marital status and 53 stress-related items, without domain labeling. It had 47 items that were taken from previous published questionnaires²⁻⁵ and 6 new items that were added related to possible educational or social factors, based on observations by postgraduate teachers who assured of their validity. The items on the questionnaire were further categorised into seven stress-provoking domains: work load, self-efficacy beliefs, faculty and administration, research training, performance pressure, social stressors and general.⁵ As the students were mainly associated with bench-work research rather than clinical wards, the term "clinical" was replaced with the term "research" wherever applicable.² Students were asked to rate their responses on four-point Likert scale, ranging from "not stressful at all" to "very stressful".²⁻⁵ Data was analysed using IBM SPSS-Version 22. Mean±SD was calculated for age and all stress-related items. Items having mean scores of 2 were considered as mildly stressful; between 2 and 3 as moderately stressful and 3 as highly stressful. Mann Whitney-U test was used to compare means of married/single statuses and males/females genders, and linear regression was applied to predict the effect of marital status and gender on the perception of stress. P-value of <0.05 was considered significant at confidence level of 95%.

Thirty out of thirty-four questionnaires were returned with a response rate of 88%. Overall reliability of questionnaire through Cronbach's alpha was found to be 0.91. With 18 females and 12 males, the mean age of the participants was 27.80±3.16 years. There were 16 (53%) participants who had single status, while the remaining 14 (47%) were married. Mean scores and ranks of all the stress-related items have been presented in Table 1. It was found that 15 (28.3%) response items were mildly stressful, 33 (62.26%) items were moderately stressful and 5 (9.4%) items were highly stressful to the students. Items with the highest mean stress scores belonged to "performance pressure" domain and majority of these items were specific to local context. A previous study has shown that among the PGs-B, the item "insecurity regarding professional future" in the "performance pressure" domain had a high

score similar to the findings in our study.² It was also noted that items such as "difficulty in understanding course reading materials, amount of cheating, learning laboratory techniques" scored the lowest in their respective domains (Table 1), suggesting that these students had the benefit of good academic and research support during their educational programme.

Multiple regression analysis of marital status and gender against perceived stress items was carried out. Independently, marital status indicated perceived stress for 6 items in the questionnaire (Table 2). Majority of these items were in the "self-efficacy" domain. Single students perceived a higher stress in 4 out of 6 of these items compared to the married students. This is an interesting perspective into the life of a PGs-B student. Single students were generally more stressed about factors relating to their future career or academic responsibilities and had less confidence in their decision-making ability. Undergraduate dental students report that single students less exposed to social and personal support have higher stress levels.^{6,7} Similarly, single females and separated / widowed / divorced males reported high levels of stress compared to their married counterparts.⁶

Married students reported higher stress compared to single students in only two areas, those related to academic and research performance. Marriage can bring massive social support that can mediate positive influences towards an academic career and act as a buffer during times of stress.⁸ It was also interesting to note that while single students were more stressed about items related to future goals, the married ones were stressed on items related to immediate goals within their degree programme. Over all, for postgraduate students, social support network/s in the form of marriage can provide an effective means to overcome stresses of academic and personal nature.

Regression analysis indicated gender associated with "language barrier" only in the presence of marital status as the other independent variable in the questionnaire. It was found that married males were more stressed regarding language difficulties compared to single or married female students (Table 2). Previous studies also suggest that female students perform better in learning the English language compared to the male students.^{9,10} Dentistry in Pakistan is taught in English, thus students with a poor command of the language may experience considerable stress during the educational process.

Table-1: Graduate Dental Environment Stress Questionnaire with Mean scores and Rank of the Stress-related Items.

Stress Domains	Level of stress n (%)				Mean Item Score ±SD	Rank
	Not stressful at all	Somewhat stressful	Quite stressful	Very stressful		
WORK LOAD						
1. Amount of assigned reading material	8(26.7)	17(56.7)	5(16.7)	----	1.90 ± 0.66	2
2. Difficulty in understanding course reading material	9(30)	19(63.3)	2(6.7)	----	1.76 ± 0.56	1
3. Late ending of day	1(3.3)	9(30.0)	10(33.3)	10(33.3)	2.96 ± 0.88	6
4. Lack of time for relaxation	5(16.7)	11(36.7)	9(30.0)	5(16.7)	2.46 ± 0.97	3
5. Overloaded feeling due to huge syllabus	----	10(33.3)	14(46.7)	6(20.0)	2.86 ± 0.73	5
6. Lack of time to do assigned school work	6(20.0)	11(36.7)	6(20.0)	7(23.3)	2.46 ± 1.07	4
SELF-EFFICACY BELIEFS						
7. Fear of failing a course	3(10.0)	7(23.3)	8(26.7)	12(40.0)	2.96 ± 1.03	8
8. Fear of being unable to catch up if behind	2(6.7)	10(33.3)	12(40.0)	6(20.0)	2.73 ± 0.86	7
9. Lack of confidence to be a successful dental student	10(33.3)	12(40.0)	7(23.3)	1(3.3)	2.03 ± 0.71	4
10. Fear of not being able to join a post-graduate dental education programme for further studies	12(40.0)	7(23.3)	6(20.0)	5(16.7)	2.13 ± 1.13	5
11. Insecurity concerning professional future	5(16.7)	10(33.3)	7(23.3)	8(26.7)	2.60 ± 1.06	6
12. Insecurity concerning lack of employment positions	3(10.0)	6(20.0)	8(26.7)	13(43.3)	3.03 ± 1.03	9
13. Lack of confidence in own decision making	14(46.7)	11(36.7)	5(16.7)	----	1.70 ± 0.74	2
14. Language barrier	19(63.3)	11(36.7)	----	----	1.36 ± 0.49	1
15. Lack of confidence to be a successful researcher	10(33.3)	12(40.0)	7(23.3)	1(3.3)	1.96 ± 0.85	3
FACULTY AND ADMINISTRATION						
16. Inconsistency of feedback on work between different instructors	6(20.0)	18(60.0)	5(16.7)	----	1.96 ± 0.62	3
17. Receiving criticism about research/ clinical work	6(20.0)	10(33.3)	10(33.3)	4(13.3)	2.40 ± 0.96	9
18. Being treated as immature & irresponsible by faculty	9(30.0)	8(26.7)	7(23.3)	6(20.0)	2.33 ± 1.12	7
19. Availability of qualified laboratory technicians	8(26.7)	10(33.3)	5(16.7)	7(23.3)	2.36 ± 1.12	8
20. Lack of input into the decision-making process further work/ research opportunities	3(10.0)	17(56.7)	7(23.3)	2(6.7)	2.27 ± 0.75	6
21. Getting study material	8(26.7)	10(33.3)	8(26.7)	4(13.3)	2.26 ± 1.01	5
22. Shortage of allocated laboratory time	14(46.7)	7(23.3)	6(20.0)	3(10.0)	1.93 ± 1.04	2
23. Inadequate number of instructors in relation to student	11(36.7)	10(33.3)	3(10.0)	6(20.0)	2.13 ± 1.13	4
24. Shortage of allocated literature search time	13(43.3)	10(33.3)	3(10.0)	4(13.3)	1.93 ± 1.04	2
25. Amount of cheating in dental university	13(43.3)	10(33.3)	4(13.3)	3(10.0)	1.90 ± 0.99	1
RESEARCH TRAINING						
26. Responsibility of getting suitable patients/ research material	3(10.0)	11(36.7)	12(40.0)	4(13.3)	2.56 ± 0.85	4
27. Difficulty in learning precision manual skills required in pre-research training	4(13.3)	18(60.0)	3(10.0)	5(16.7)	2.30 ± 0.91	2
28. Transition from pre-research training research to research work	4(13.3)	13(43.3)	8(26.7)	5(16.7)	2.46 ± 0.93	3
29. Difficulty in learning research laboratory procedures	9(30.0)	14(46.7)	4(13.3)	3(10.0)	2.03 ± 0.92	1
PERFORMANCE PRESSURE						
30. Competition for higher performance	4(13.3)	10(33.3)	11(36.7)	5(16.7)	2.56 ± 0.93	2
31. Competition for grades	5(16.7)	9(30.0)	11(36.7)	5(16.7)	2.53 ± 0.97	1
32. Final exams/ comprehensive exam	1(3.3)	4(13.3)	10(33.3)	15(50.0)	3.30 ± 0.83	6
33. Public defense and thesis viva	1(3.3)	5(16.7)	11(36.7)	13(43.3)	3.20 ± 0.84	5
34. Research requirement (data) for thesis	1(3.3)	9(30.0)	7(23.3)	13(43.3)	3.06 ± 0.94	3
35. Thesis writing	1(3.3)	5(16.7)	13(43.3)	11(36.7)	3.13 ± 0.81	4
SOCIAL STRESSES						
36. Lack of home environment in living quarters	9(30.0)	10(33.3)	3(10.0)	8(26.7)	2.33 ± 1.18	6
37. Financial responsibilities	5(16.7)	9(30.0)	6(20.0)	10(33.3)	2.70 ± 1.11	7
38. Forced postponement of engagement or marriage	22(73.3)	2(6.7)	2(6.7)	4(13.3)	1.60 ± 1.10	4
39. Marital adjustment problems	19(63.3)	7(23.3)	2(6.7)	2(6.7)	1.56 ± 0.89	2
40. Necessity to postpone having children	18(60.0)	5(16.7)	4(13.3)	3(10.0)	1.73 ± 1.04	5
41. Pressure from family/ in-laws to leave studies	21(70.0)	4(13.3)	2(6.7)	3(10.0)	1.56 ± 1.00	3
42. Non-cooperative family / in laws towards studies	22(73.3)	3(10.0)	4(13.3)	1(3.3)	1.46 ± 0.86	1
GENERAL						
43. Leave of absence and holiday days allowed	6(20.0)	14(46.7)	4(13.3)	6(20.0)	2.33 ± 1.02	8
44. Completing graduation requirement	5(16.7)	13(43.3)	10(33.3)	2(6.7)	2.30 ± 0.83	7
45. Collaboration with full-time faculty	9(30.0)	12(40.0)	8(26.7)	1(3.3)	2.03 ± 0.85	2
46. Learning laboratory techniques	10(33.3)	14(46.7)	4(13.3)	2(6.7)	1.93 ± 0.86	1
47. Policies and regulations of the programme	4(13.3)	14(46.7)	7(23.3)	5(16.7)	2.43 ± 0.93	9
48. Obtaining adequate research experience	4(13.3)	15(50.0)	9(30.0)	2(6.7)	2.30 ± 0.79	6
49. Lack of input in administrative issues of the programme	6(20.0)	14(46.7)	6(20.0)	4(13.3)	2.26 ± 0.94	5
50. Insecurity regarding professional future	1(3.3)	11(36.7)	11(36.7)	7(23.3)	2.80 ± 0.84	10
51. Awareness of own competences and limitations	1(3.3)	21(70.0)	5(16.7)	2(6.7)	2.27 ± 0.64	6
52. Doing presentations in seminar activities or to other faculty	7(23.3)	12(40.0)	9(30.0)	2(6.7)	2.20 ± 0.88	4
53. Collaboration with other specialties/services	10(33.3)	9(30.0)	8(26.7)	3(10.0)	2.13 ± 1.00	3

Table-2: : Stress-related items showing statistically significant association with gender and marital status through linear regression analysis.

	Stress Factors vs Marital Status						
	Mean Ranks		F Statistic (df=1,28)	R Square	B Coefficient		p-value
	Single	Married			Single	Married	
Fear of not being able to join a post-graduate dental education programme for further studies	18.47	12.11	5.676	0.169	2.563	-0.92	0.024
Insecurity concerning professional future	19.16	11.32	7.939	0.221	3.063	-0.991	0.009
Insecurity concerning lack of employment positions	18.75	11.79	6.182	0.181	3.438	-0.866	0.019
Lack of confidence in own decision making	19.38	11.07	10.696	0.276	2.062	-0.777	0.003
Competition for higher performance	12.47	18.96	4.390	0.136	2.250	0.679	0.045
Obtaining adequate research experience	12.63	18.79	5.679	0.169	2.000	0.643	0.024
Stress Factor vs Gender & Marital Status							
Language barrier	Mean Ranks		F Statistic (df=2,27)	R Square	B Coefficient		p-value
	Single	Married			Single	Married	
	15.63	15.36	2.364	0.135	1.147	0.123	0.507
	Female	Male			Female	Male	
	13.33	18.75			1.147	0.406	0.039

Our study had a limited sample size of only 30 participants. To a certain extent, individual programme and country-wise factors can influence the perception of stress. A multi-centered, national-wide survey would allow a comprehensive evaluation of stress-related factors in postgraduate studies. Implementation of postgraduate programmes which support the well-being of students at the university level can ensure emotional and professional well-being of "future professionals and academics" in the country.

Conclusions

Based on modified GDES, postgraduate students of basic dental sciences perceived mild stress in 15 items, moderate stress in 33 items while in 5 areas perception of stress that came under the domain of "performance pressure," was high. Marital status independently indicated stress in the domain of "self-efficacy beliefs." Single students were more stressed in four areas relating to their future career, academic responsibilities and confidence in their decision-making ability, while married students experienced higher level of stress when competing for research experience in their learning programmes.

Acknowledgement: We would like to thank all the study participants as without their voluntary participation, this study would not have been possible.

Disclosure Statement: The authors declare no conflict

of interest.

Disclaimer: No part of this research work has been presented or published in any conference.

Funding Disclosure: No funding was received for the study.

References

- Gorter R, Freeman R, Hammen S, Murtooma H, Blinkhorn 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. *Eur J Dent Educ* 2008; 12: 61-8.
- Divaris K, Polychronopoulou A, Taoufik K, Katsaros C, Eliades T. Stress and burnout in postgraduate dental education. *Eur J Dent Educ* 2012; 16: 35-42.
- Shetty A, Shetty A, Hegde MN, Narasimhan D, Shetty S. Stress and burnout assessment among post graduate dental students. *Nitte Univ J Health Sci* 2015; 5: 31-6.
- Divaris K, Lai CS, Polychronopoulou A, Eliades T, Katsaros C. Stress and burnout among Swiss dental residents. *Schweiz Monatsschr Zahnmed* 2012; 122: 610-5.
- Al-Sowaygh ZH, Alfadley AA, Al-Saif MI, Al-Wadei SH. Perceived causes of stress among Saudi dental students. *King Saud Uni J Dent Sci* 2013; 4: 7-15.
- Musser LA, Lloyd C. The relationship of marital status and living arrangement to stress among dental students. *J Dent Educ* 1985; 49: 573-8.
- Muirhead V, Locker D. Canadian dental students' perceptions of stress and social support. *Eur J Dent Educ* 2008; 12 : 144-8.
- Katz J, Monnier J, Libet J, Shaw D, Beach SR. Individual and crossover effects of stress on adjustment in medical student marriages. *J Marital Fam Ther* 2000; 26: 341-51.
- Kobayashi Y. The role of gender in foreign language learning attitudes: Japanese female students' attitudes towards English learning. *Gend Educ* 2002; 14: 181-97.
- Sundari H, Hadi I, Nurhayati N. Exploring Gender on EFL Learners' Beliefs about Language Learning. *Lingua Cultura* 2014; 8: 128-37.