



(RESEARCH ARTICLE)



## Perceived sources of stress among dental students in Port Harcourt

Osagbemi Babatope Bamidele <sup>1,\*</sup> and Soroye Modupeoluwa Omotunde <sup>2</sup>

<sup>1</sup> Department of Preventive Dentistry, University of Port Harcourt Teaching Hospital, Port Harcourt, Rivers State.

<sup>2</sup> Department of Preventive Dentistry, Faculty of Dentistry, University of Port Harcourt, Port Harcourt Rivers State.

Publication history: Received on 28 February 2020; revised on 07 March 2020; accepted on 09 March 2020

Article DOI: <https://doi.org/10.30574/wjarr.2020.5.3.0056>

### Abstract

Dental education is regarded as a stressful learning environment due to the clinical and laboratory requirements as well as in-depth theoretical knowledge. Therefore the objective of this study was to identify sources of stress among dental students in University of Port Harcourt, Rivers State. The study was a descriptive cross-sectional study among undergraduate dental students at the University of Port Harcourt, Rivers State. The students were surveyed using a modified version of the Dental Environment Stress (DES) survey. Age, sex, year of study, marital status and monthly allowance were also recorded. All descriptive, as well as inferential statistical analysis, was carried out using SPSS ver. 20.0 and the value of  $p < 0.05$  was considered statistically significant. A total of 84 students participated in the study. The median age for the students was 23 years, with a range of 19-30 years. The majority (94.0%) of the respondents were single. The total mean DES score was 2.46. Higher mean DES scores were observed among females, clinical students and those with a more monthly allowance; however, these were not statistically significant ( $p > 0.05$ ). The most common causes of moderate to severe stress were lack of time for relaxation, workload, the responsibility of getting suitable patients and fulfilling clinical requirements. There was no significant difference in the perceived stress levels across gender and level of study. The commonest stressors were workload and lack of relaxation time. There is a need to re-examine the dental curricula to identify ways to reduce workload. Also, there is a need to implement strategies to manage stress among dental students.

**Keywords:** Dental students; Stress; Stressors

### 1. Introduction

Dental education is regarded as a stressful learning environment due to the clinical and laboratory requirements as well as in-depth theoretical knowledge involved [1]. Stress is a broad term that has been used to describe a state of mental or emotional strain or suspense. However, Lazarus and Folkman [2] define psychological stress as “a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being”. Compared to other university students, dental students face more challenges because in addition to their academic workload, they need to perform some procedures on patients to qualify as dental professionals.

Furthermore, preclinical students spend a lot of time in the laboratory to develop manual skills for their requirements; while clinical students are required to treat patients, administer anaesthetics, perform tooth scaling, extractions, do restorations etc.[3]. They also look for patients and are sometimes financially responsible for the procedures they are required to perform in limited clinical time [4, 5]. All these factors cause psychological stress which can lead to sleep disorders, frustrations, decreased concentration, absenteeism, substance abuse, headaches, indigestion, drowsiness and other mental problems like depression and anxiety [1, 2, 3, 5].

\* Corresponding author: Osagbemi Babatope Bamidele

Stress levels and stressors among dental students have been found to vary between individuals and institution [5]. Sofola and Jeboda [6] found a lack of social support system as a significant source of stress among dental student with no significant differences in stress perception between genders at the University of Lagos in 2006. The unavailability of study materials and materials for clinical training were the significant stressors in that study. However, the emergence of high-speed internet on mobile phones enable undergraduates easy access to information and study materials with a positive impact on their academic work [7]. Thus there is a need to determine if dental students have other stressors that are affecting their dental training in Nigeria. Moreover, several international based studies cited workload, examination and grades, clinical requirements and dealing with difficult patients as the main stressors in dental schools [1, 3, 4, 8-10]. Therefore, the objective of this study was to identify perceived sources of stress among dental students in University of Port Harcourt, Rivers State.

## 2. Material and methods

The study is a descriptive cross-sectional study among undergraduate dental students at the University of Port Harcourt, Rivers State. Ethical approval for performing the study was obtained from the Research and Ethics Committee of the University of Port Harcourt Teaching Hospital. The purpose of the study was communicated in advance to the students, and student participation in the research was voluntary.

The students were surveyed using a validated modified version of the Dental Environment Stress (DES) survey [8] containing 41 stress-related items. The questionnaire had been used in previous studies [4, 5, 8]. The responses to the stressors were based on a four-point Likert scale with response options of 1 = not stressful at all, 2 = slightly stressful, 3 = moderately stressful, and 4 = very stressful. Students were asked to respond to each stressor referring to this scale. Age, sex, year of study, marital status and monthly allowance were also recorded. Descriptive, as well as inferential statistical analysis using Student's t-test and Chi-square, was carried out using SPSS ver. 20.0 (IBM SPSS Statistics, Armonk New York). Mean values and standard deviations were calculated for each stressor and were used to compare gender and year of study. The value of  $p < 0.05$  was considered statistically significant.

## 3. Results

A total of 84 students participated in the study. The median age for the students was 23 years, with a range of 19-30 years. Forty-six per cent (39) of the participants were males and 53.6% (45) were females. The majority (94.0%) of the respondents were single. The distribution of the dental students by level of study was: 400 level; 25(29.8%), 500 level; 18(21.4%) and 600 level 41(48.8%) as shown in Table 1.

**Table 1** Sociodemographic variables of study participants (n=84)

<b>Sociodemographic variables</b>		<b>Frequency</b>	<b>Percentage</b>
<b>Age Group</b>	19-24	53	63.1
	25-31	31	36.9
<b>Gender</b>	Male	39	46.4
	Female	45	53.6
<b>Year</b>	Year 4	25	29.8
	Year 5	18	21.4
	Year 6	41	48.8
<b>Level</b>	Pre-clinicals	43	51.2
	Clinicals	41	48.8
<b>Marital Status</b>	Single	79	94.0
	Married	5	6.0
<b>Monthly Allowance (naira)</b>	<10,000	8	9.5
	10,000-20,000	39	46.4
	>20,000	37	44.0
	Total	84	100.0

The total mean DES score was  $2.45 \pm 0.45$  (95%CI, 2.36 – 2.56). Higher mean DES score was observed among females, clinical students (600 level) and those with higher monthly allowance (>20,000); however, these were not statistically significant as shown in Table 2.

**Table 2** Mean Dental Environment Stress (DES) scores and comparison among sociodemographic variables

<b>Sociodemographic variables</b>		<b>Mean DES Score</b>	<b>p-value</b>
<b>Age Group</b>	19-24	$2.51 \pm 0.3$	0.16
	25-31	$2.37 \pm 0.54$	
<b>Gender</b>	Male	$2.37 \pm 0.44$	0.11
	Female	$2.53 \pm 0.44$	
<b>Year</b>	Year 4	$2.36 \pm 0.48$	0.36
	Year 5	$2.46 \pm 0.25$	
	Year 6	$2.52 \pm 0.49$	
<b>Level</b>	Preclinicals	$2.40 \pm 0.40$	0.23
	Clinicals	$2.52 \pm 0.49$	
<b>Marital Status</b>	Single	$2.47 \pm 0.44$	0.21
	Married	$2.21 \pm 0.55$	
<b>Monthly Allowance (naira)</b>	<10,000	$2.22 \pm 0.38$	0.25
	10,000-20,000	$2.51 \pm 0.46$	
	>20,000	$2.45 \pm 0.44$	
<b>Total</b>		<b><math>2.46 \pm 0.45</math></b>	

The top items perceived to be moderately to severely stressful were lack of time for relaxation, workload, the responsibility of getting suitable patients and fulfilling clinical requirements, as shown in Table 3.

**Table 3** Topmost stressors among the study participants

<b>TOPMOST STRESSORS</b>	<b>Mean</b>	<b>SD</b>
Lack of time for relaxation	3.14	0.95
Overload feeling due to the huge syllabus	3.05	1.00
Responsibility of getting suitable patients	3.02	0.93
Completion of clinical requirements	2.93	0.96
Amount of assigned classwork	2.92	0.98

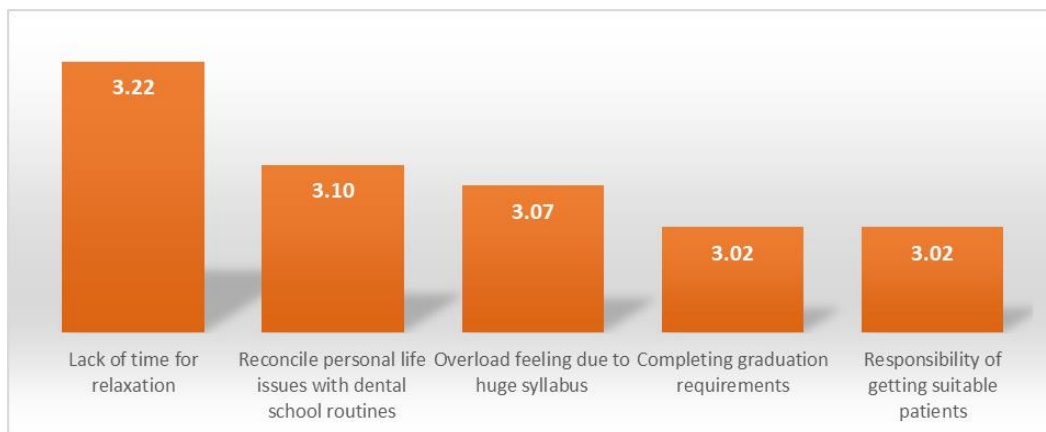
SD=Standard Deviation

The most perceived stressor among the pre-clinical was “amount of assigned classwork” followed by “lack of relaxation” and “feeling of overload due to huge syllabus” (Figure 1).



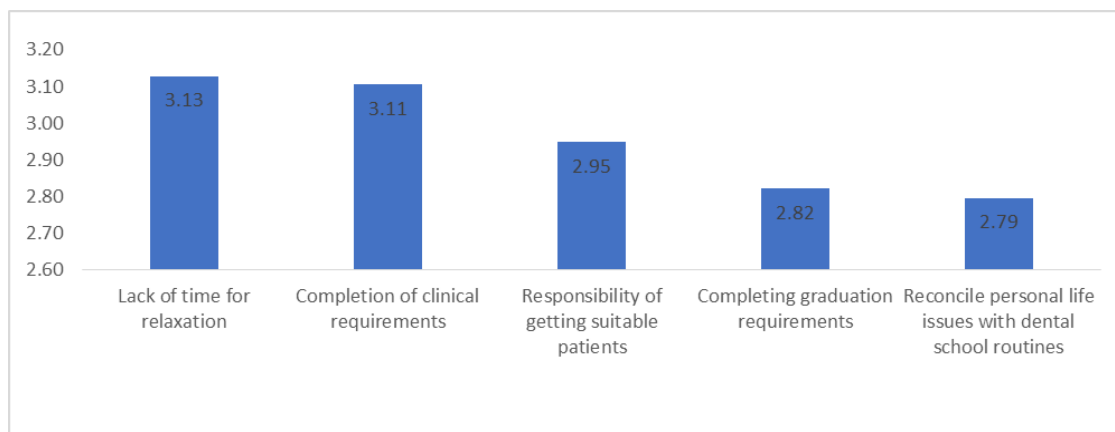
**Figure 1** Top stressors among the Pre-clinical students

However, the major stressful factors among the clinical students were “lack of time for relaxation”, “inability to reconcile personal life issues with dental school routines” and “feeling of overload due to huge syllabus” (Figure 2).

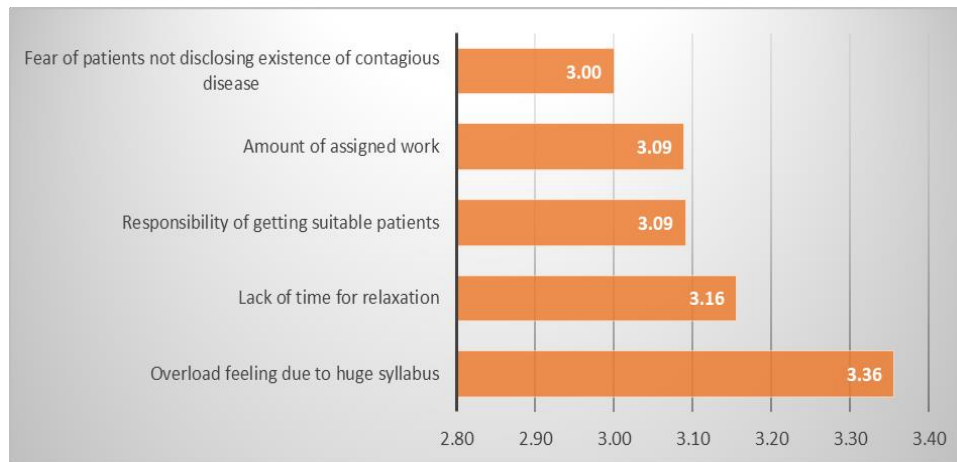


**Figure 2** Top stressors among the clinical students

The top two perceived source of stress among the males were “Lack of time for relaxation” and “Completion of clinical requirements” while for females were “feeling of overload due to huge syllabus” and “Lack of time for relaxation” as shown in Figure 3 and 4.



**Figure 3** Top stressors among the male students



**Figure 4** Top stressors among the female students

Feeling of work overload due to huge syllabus was significantly very stressful among females (60.0%) compared to 28.2% among males with a p-value of 0.02. Likewise, the responsibility of getting suitable patients by clinical dental students was significantly very stressful among females than their male counterpart, as shown in Table 4.

**Table 4** Cross-tabulation of some top stressors and gender

	Gender				Total		p-value
	Male		Female		N	%	
	N	%	N	%			
<b>Lack of time for relaxation</b>							
Not Stressful at all	2	5.1%	3	6.7%	5	6.0%	0.72
Slightly Stressful	8	20.5%	10	22.2%	18	21.4%	
Moderately Stressful	12	30.8%	9	20.0%	21	25.0%	
Very Stressful	17	43.6%	23	51.1%	40	47.6%	
<b>Overload feeling due to huge syllabus</b>							
Not Stressful at all	5	12.8%	1	2.2%	6	7.1%	0.02
Slightly Stressful	13	33.3%	9	20.0%	22	26.2%	
Moderately Stressful	10	25.6%	8	17.8%	18	21.4%	
Very Stressful	11	28.2%	27	60.0%	38	45.2%	
<b>Responsibility of getting suitable patients by clinical students</b>							
Not Stressful at all	0	0.0%	2	9.1%	2	4.9%	0.01
Slightly Stressful	5	26.3%	6	27.3%	11	26.8%	
Moderately Stressful	10	52.6%	2	9.1%	12	29.3%	
Very Stressful	4	21.1%	12	54.5%	16	39.0%	
<b>Total</b>	<b>19</b>	<b>100.0%</b>	<b>22</b>	<b>100.0%</b>	<b>41</b>	<b>100.0%</b>	

#### 4. Discussion

The need to acquire a wide range of knowledge and variety of skills early in dental education bring some form of stress among dental students. Though individuals respond and adapt to stress differently, high levels of physical and psychological stress may affect the well-being and performance of the student. This study presents the perceived

stressors among undergraduate dental student at the University of Port Harcourt. The topmost perceived stressor, which was lack of time for relaxation in this study was similar to that reported among Canadian students [11]. This can be attributed to the more extended academic session and lack of holiday time compared to other university students as well as the need to meet mandatory clinical requirements before final examinations.

There was a trend of increasing stress from 4<sup>th</sup> year to the final year in this study. This is similar to a study [12] done on Malaysian dental students that showed a trend of increasing stress as students' progress towards their final year. This can be attributed to; increase in coursework with each passing year, preparation for examinations and fear of failing. Also, uncertainties and anxieties about the future of their dental education and the prospect of securing a job after school may be responsible for the increase in perceived stress among the final year students.

The relationship between student and faculty was reported by Sekhon et al. [13] as a significant contributor to stress. This is in contrast to the current study, where all the questions concerning faculty relations were not considered as significant stress contributors. The top stressors in this study which are huge syllabus and completion of clinical requirements align with the findings of previous studies [14, 15]. The mandatory clinical cases to be performed in a limited time and finding a suitable patient for a forthcoming examination have been observed to be major potent stressors among dental students. Although clinical competence increases with the number of procedures performed by the students [16]; the responsibility of getting suitable patients in a low-income society as ours is seen as a major stress among dental students. Manivasakan et al. [16] opined that competency in performing clinical procedures could be considered as a prerequisite for qualifying for exams instead of quantity of procedures completed.

Similar to the study by Sofola and Jeboda [6], there was no statistically significant difference in the perceived level of stress observed across gender. This is in contrast to previous studies [8, 9, 17] that found a significantly higher level of stress among female dental students. Kumar et al. [14] and Acharya [18], however, observed that males expressed a higher level of stress compared to their female counterpart. Regarding the association of gender and perceived sources of stress, females reported higher rates in items such as; lack of time for relaxation, huge syllabus and responsibility of getting suitable patients. Gender differences in response to stressful events have been attributed to their different patterns in psychological morbidity and the fact that males are less expressive of their concerns [19].

---

## 5. Limitation of the study

The result of the study cannot be generalised as it was done in a single centre. Further research is needed to determine if dental students would report similar results across Nigeria. Also, longitudinal studies can be used to determine if stressors change as student progress from preclinical to the clinical year of study.

---

## 6. Conclusion

There was no significant difference in the perceived stress levels across gender and level of study. The commonest stressors were workload and lack of relaxation time. There is a need to reexamine the dental curricula to identify ways to reduce workload. Also, there is a need to implement strategies to manage stress among dental students like using more individualised approaches to enhance students' well-being and ensure a healthy learning environment.

---

## Compliance with ethical standards

### *Acknowledgments*

The authors wish to express their sincere appreciation to the study participants.

### *Disclosure of conflict of interest*

There are no conflicts of interest.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

## References

- [1] Elani HW, Allison PJ, Kumar RA, Mancini L, Lambrou A and Bedos C. (2014). A systematic review of stress in dental students. *Journal of Dental Education*, 78(2), 226-242.
- [2] Lazarus RS and Folkman S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company.
- [3] Molina JF, Martínez PT, Penna CB, Sagredo MF and Narváez VD. (2018). Perception of Environment Stressors in Chilean Dentistry Students. *Brazilian Research in Pediatric Dentistry and Integrated Clinic*, 18(1), 3824.
- [4] Sheetal S, Narayan SJ, Yadalam U, Apoorva M and Hareem F. (2018). Assessment of stress perceived in dental students: a questionnaire survey. *International Journal of Scientific Research*, 7(2).
- [5] Ersan N, Dölekoğlu S, Fişekçioğlu E, İlgüy M and Oktay I. (2018). Perceived sources and levels of stress, general self-efficacy and coping strategies in preclinical dental students. *Psychology, Health and Medicine*, 23(5), 567-577.
- [6] Sofola OO and Jeboda SO. (2006). Perceived sources of stress in Nigerian dental students. *European Journal of Dental Education*, 10, 20-23.
- [7] Otunla AO. (2013). Internet Access and Use among Undergraduate Students of Bowen University Iwo, Osun State, Nigeria. *Library Philosophy and Practice*.
- [8] Al-Sowygh ZH, Alfadley AA, Al-Saif MI and Al-Wadei SH. (2013). Perceived causes of stress among Saudi dental students. *King Saud University Journal of Dental Sciences*, 4(1), 7-15.
- [9] Polychronopoulou A and Divaris K. (2009). Dental students' perceived sources of stress: a multi-country study. *Journal of Dental Education*, 73(5), 631-639.
- [10] Alzahem AM, van der Molen HT and Alaujan AH. (2011). Stress amongst dental students: a systematic review. *European Journal of Dental Education*, 15(1), 8-18.
- [11] Hayes A, Hoover JN, Karunanayake CP and Uswak GS. (2017). Perceived causes of stress among a group of western Canadian dental students. *BMC research notes*, 10(1), 714.
- [12] Babar MG, Hasan SS, Ooi YJ, Ahmed SI, Wong PS, Ahmad SF, et al. (2015). Perceived sources of stress among Malaysian dental students. *International Journal of Medical Education*, 6, 56-61.
- [13] Sekhon TS, Grewal S, Gambhir RS and Sharma S. (2015). Perceived sources of stress among dental college students: An Indian perspective. *European Journal of General Dentistry*, 4, 121-126.
- [14] Kumar S, Dagli RJ, Mathur A, Jain M, Prabu D, Kulkarni S, et al. (2009). Perceived sources of stress amongst Indian dental students. *European Journal of Dental Education*, 13, 39-45.
- [15] Ara SA, Patil BM and Ashraf S. (2015). Assessment of stress level among dental undergraduate students: A questionnaire survey. *International Journal of Scientific Study*, 2, 140-143.
- [16] Manivasakan S, Raman SK, Devy AS and Saravanakumar R. (2018). The clinical dental undergraduate's perception of stress origin in India: A cross-sectional study. *Journal of Natural Science, Biology and Medicine*, 9, 197-200.
- [17] Naidu RS, Adams JS, Simeon D and Persad S. (2002). Sources of stress and psychological disturbance among dental students in the West Indies. *Journal of Dental Education*, 66, 1021-1030.
- [18] Acharya S. (2003). Factors affecting stress among Indian Dental students. *Journal of Dental Education*, 67(10), 1140-1148.
- [19] Sangiorgio JPM, Araujo PM, Navarro CH, Zen IR, da Costa SC, Ribeiro PHV, et al. (2016). Dental environment stress: Findings among Lusophone dental students. *Brazilian Research in Pediatric Dentistry and Integrated Clinic*, 16(1), 411-424.

---

## How to cite this article

Osagbemi BB and Soroye MO. (2020). Perceived sources of stress among dental students in Port Harcourt. *World Journal of Advanced Research and Reviews*, 10(3), 55-61.

---