ISSN: 2795-1952 (Print); ISSN: 2976-1107 (Online)
MedS Alliance
Journal of Medicine and Medical Sciences
Original Investigation

Stress among Students' of Dental College in Nepal

Srijana Ghimire[1*] | Jaya Prasad Singh[2] | Soni KC[3] | Sunita Poudyal[4] | Rajib Chaulagain[5]

[1]Department of Adult Health Nursing, School of Nursing, Chitwan Medical College, Bharatpur-10, Chitwan; [2]School of Public Health, Chitwan Medical College, Bharatpur-10, Chitwan; [3]Department of Adult Health Nursing, School of Nursing, Chitwan Medical College, Bharatpur-10, Chitwan; [4]Department of Adult Health Nursing, School of Nursing, Chitwan Medical College, Bharatpur-10, Chitwan; [5]School of Dental Sciences, Chitwan Medical College, Bharatpur-10, Chitwan

ARTICLE INFO

Article history:
Received: 7 October 2022
Revised:9 December2022
Accepted: 29 December 2022

***Correspondence:**
Mrs. Srijana Ghimire, Department of Adult Health Nursing, School of Nursing, Chitwan Medical College, Bharatpur-10, Chitwan.

E-mail:
srijananeupane95@gmail.com

Citation:
Ghimire S, Singh JP, KC S, Poudyal S, Chaulagain R. Stress among Students' of Dental College in Nepal. MedS. J. Med. Sci. 2022;2(4):48-52.

ABSTRACT

INTRODUCTION: Dentistry is a most stressful profession in the medical field. During the practicum period, most of the dental students feel stressed from internal and external environmental stressors. Therefore, this study was designed to assess the stress among dental students, this will provide applicable insights for further improvement. **MATERIALS AND METHODS:** A descriptive, cross-sectional research design was used with an online Structure questionnaire to assess stress among the students of dental colleges of Nepal by using dental environmental stress (DES) questionnaire, which was developed by Garbee et al. Probability Proportionate to the size sampling technique was used to collect the sample. The organized data will be entered by using IBM Statistical Package for Social Science (SPSS) version 20.0. The data will be further analyzed by using descriptive statistics (frequency, percentage, mean, median and standard deviation) and inferential statistics. **RESULTS:** Out of 756 students, 58.7% of the respondents were equal to or greater than 22 years of age. The median age was 22 years. Among them, 78.7% were female. Stress-related to domain, Professional and carrier-related stressor had higher, followed by academic performance and Clinic patient-related stress is mean percentage was 70.43, 69.17and 61.09, respectively. About 50.3% had moderate levels and 15.3% of respondents had a severe level of stress. There was statically association between stress level with age (p=0.01), first choice of study (p=0.026), academic year (p=<0.001) and current residence (p=<0.001). **CONCLUSIONS**: Professional and carrier-related stressor, academic-related and patient-related stressors are higher in dental students. Severe Levels of stress increased over the academic year and peaked in 5th year. Stress affects student academic as well as professional carrier in the future so minimize the stressor by the institutional level.

Keywords: Dental student, Dentistry, Education, Stress.

https://doi.org/10.3126/mjmms.v2i4.53563

INTRODUCTION

Stress is known as silent killers which affect the students' academic performance [1]. Study among health care professionals' shows that dental students experience high levels of stress [2]. Tertiary health care center Nepal found that the prevalence of stress was 100% among dental students [3]. Clinical as well as academic factors contribute to increasing stress among dental students [4]. During practicum time different associated stressors are found such as practical time [5], handling uncooperative patients, and critical nature of the work and pressure of the schedule [6]. The common source of stress was the academic component of the course, especially in related to examinations and grading [7, 8]. Especially fourth-year students were more stress than other year due to fear of failure and examination grading [7]. Dental students who are currently staying in hostel they experience more stress than day scholars because there is a lack of recreational facilities, satisfaction regarding food quality, and living away from home [9]. Male students were severe stressed [10] due to difficulty in getting suitable patients, and some patients were arriving late or not coming on appointment time [8]. Top stressors in academic performance-related stress were exam and grade stress, fear of failing, lack of time between tests/clinics, and criticism at work. Among faculty/institution-related stress, the atmosphere created by faculty and rules or regulations at the workplace was the main stressors [10]. Clinical years were more stressful than the preclinical years [11]

major challenges were inadequate clinical space and lack of educational materials [12]. The aim of this study is to assess stress levels among dental students. This information will help the government and other concerned bodies to reduce the stress among dental students and launch appropriate intervention programs.

MATERIALS AND METHODS

Study design and setting

This was a descriptive cross-sectional study carried out among dental student of different dental and medical colleges in Nepal. This study was done dental college of Nepal. The data was collected from April, 2020 to December 2020.

Participants, sample size and sampling technique

There were 10 dental colleges in total in Nepal. All the dental students who are studying 2nd, 3rd, 4th and 5th year were included in population. The total number of dental students present in the 2nd year to 5th year in all the medical and dental colleges of Nepal was collected and was found out to be 1301. Based on prior study, the sample size was calculated by using the formula Yamane (1967) [36]. Sample size estimated as (n) = N/(1+Ne^2). Where, population size (N) = 1301, allowable error (e) = 0.05, Therefore, sample size (n) = 306. By taking design effect (D) = 2, minimum sample size estimated as 612. Additionally, considering non-response rate of 20%, final sample size estimated was 735.

Among the 1301 students, probability proportionate to the size sampling technique was used to collect the samples from 8 dental colleges. In the final study, 756 dental students participated. All undergraduate dental students (second to fifth year dental) willing to take part both in the study and to complete the online questionnaire were included.

Data collection procedure and study variables

Data collection was done through an online survey by using Google-forms. Survey questionnaire was distributed via online forum such as emails, messenger, WhatsApp, Viber, Skype. An electronic consent form was attached before the start of questionnaire and only two options was made available. Those who clicked 'yes' was considered to give online consent and they could proceed to the next level of questionnaire. Age, sex, current residents, academic year, marital status, choice of study, living arrangements and sources of payment were considered independent variables.

Stress were assessed through dental environmental stress (DES) questionnaire which was developed by Garbee et al [35]. The reliability of the tool was 0.89. In this scale total 38 items. The item is rated on a 4 point like scale with response options of 1- not stressful, 2- slightly stressful, 3- moderately stressful, and 4- severely stressful. The items were included under 6 domain they were Academic performance, Clinical patient related stress, Faculty related stress, Personal related stress, Accommodation surrounding environment related stressor, Professional and carrier related stressor.

Statistical analysis and data management

All the collected data was retrieved from google in the form of spread sheet and then it was transferred into Statistical Package for Social Sciences (SPSS) version 16 for the statistical analysis. Descriptive statistics using frequency and percentage was calculated. Association between different variables were observed using inferential statistics.

Ethical considerations

Ethical approval conducted through Chitwan Medical College Institutional Review Committee (CMC-IRC) 076/077-135.

RESULTS

Table 1 show that 58.7% of the respondents were equal or greater than 22 years of age. The median was 22 years. Among them 78.7% were female. Majority of the respondents were follow Hindu religion. Only 3.8% respondents were married, 55.2% of the respondents' say BDS is first choice of study, 12.3% students study in scholarship, 77.6% respondents are non hostellers and 47.1% stay with roommate.

Table 2 illustrated that stress among respondents on six domain, professional and carrier related stressor had higher followed by academic performance that is mean percentage was 70.43 and 69.17 respectively which shows higher the mean percentage higher the stress. Out of 756 respondents, about half (50.3%) of the respondents had moderate level of stress and only few (0.8%) had no stress (Table 3). Association between levels of stress with selected variables are shown in Table 4. There is statistically significant association was observed between stress level with age (p=0.01), first choice of study (p=0.026), academic year (p=<0.001) and current residence (p=<0.001).

Table 1| Socio-demographic characteristics of the respondents (N=756)

Variables	Frequency	Percentage
Age in years		
<22	312	41.3
≥22	444	58.7
Median Age	22 years	23-21 years
Sex		
Male	161	21.3
Female	595	78.7
Current Residents		
Hostellers	169	22.4
Non hostellers	578	77.6
Religion		
Hindu	693	91.7
Buddha	44	5.8
Kirant	11	1.5
Islam	4	0.5
Christian	4	0.5
Academic Year		
2nd	188	24.9
3rd	226	29.9
4th	191	25.3
5th	151	20.0
Marital status		
Married	29	3.8
Unmarried	727	96.2
First choice of study		
Yes	417	55.2
No	339	44.8
Living arrangement		
With Parent	288	38.1
With roommate	356	47.1
Alone	112	14.8
Source of payment		
Scholarship	93	12.3
Personal funding	663	87.7

DISCUSSION

This study was based on dental environmental stress (DES) questionnaire, which was developed by Garbee et al [35]. This questionnaire included 38 items that cover 6 domains. Many studies used to dental Environmental Stress questionnaire (DES) to find out sources of stress. This study found that only 33.6% had mild levels of stress, 50.3% had a moderate level of stress, and 15.3% had severe level of stress. The findings are consistent with Health JR et al., which shows that dental education is very stressful for students [24]. Many studies found that higher level of stress on the different domains such as academic, clinical training, faculty related as well as environment related [25]. Sometimes patient come late or do not come on appointment time and difficulty to find suitable patient is another stress for the student [26]. This study also found that there is a statically association between stress level with age (p=0.01) which shows that 54.7% of students had a moderate level of stress in age group equal and more than 22 years of age. This shows that higher the age higher the stress level.

This study found association between stress level and first choice of study (p=0.026) statiscally. Acharya's (2003) study shows a relation between faculty behavior and choice of study. Stress caused by the faculty's behavior was higher among the dental students whose first choice was not dentistry. The reason may be they are forceful in joining a dental course by parents. Or this was not their first choice of study that may manifest through reduced tolerance of the faculty's behaviour [27]. Similarly, there was also a statically association between stress level and academic year (p=<0.001), which shows 5th year students had severe

Table 2 | Stress score on six different domain among respondents

Domain	No. of items	Max. score	Obtained Range	Mean ± SD	Mean%
Academic performance	7	28	3 – 28	19.37 ± 4.40	69.17
Clinic patient related stress	7	28	0 – 28	17.10 ± 5.44	61.09
Faculty institution related stress	5	20	2 – 20	11.16 ± 4.14	55.79
Personal related stress	12	48	4 – 48	22.28 ± 10.23	46.41
Accommodation surrounding environment related stressor	2	8	0 – 8	3.95 ± 2.13	49.41
Professional and carrier related stressor	5	20	3 – 20	14.09 ± 3.71	70.43
Total	**38**	**152**	**25 - 152**	**87.74 + 22.99**	**57.86**

stress. These findings is supported by Grewal et al. study 3rd, and 4th year dental students reported more stressors faced during clinical and patient requirements [15]. Sanders and Lushington also found dental student stress increase over time and is high in fourth year student [11]. Azahem et al. (2013) found that third-year students had the highest amount of stress compared to the other students [34]. Fourth-year students experienced the highest degree of stress [28]. This study also statically significant between stress level and current residence (p=<0.001), where 53.3 hostellers experience a moderate level of stress. Many studies support these findings.

The hostellers experienced more stress than day scholars, which may be the lack of recreational facilities and being detached from home and family members were stressful situations [15, 13]. Bala, Raj kumar & Singh study found that students who were residing in the college hostel or quarters exhibited a higher level of stress. This may be because the living conditions provided in the hostel are not good, and also the students feel a lack of home atmosphere, homesickness and lack of parental guidance and support, which adds more stress and deprives them of the much-required support [29, 13]. This study shows that there is no association between sex and stress level. Only 50.6 % of the female respondents showed a moderate level of stress. This findings is contrast which showed females were significantly higher DES scores (P values <0.05) [30]. Mirsaifi et.al also found that women also scored higher perceived stress in all area of study period [29, 31]. This study found that in the 6 domain, professional and carrier-related stressor was higher. The mean percent was 70.43. And followed by 69.17 mean percent on academic performance.

A study conducted by Jowkar, Masoumi and Mahmoodian (2022) found that the sixth-year students had significantly lower scores compared to the third-, fourth-, and fifth-year students (P=0.031, P=0.036, and P<0.001, respectively) [33]. This study found that higher stress was found on the dimension of Clinic or patient-related stress, which was mean percent of 61.09. This may be find the patient from the community and OPD basis by self in the examination period as well as a clinical period, which cause more stress from community this may be lack of trust on student by community people. The findings were supported by many studies which show major issues related to the clinical procedure and completing certain criteria for attaining in final examination [32] Another stress was if the students were absent of some clinical exposure, which increase the stress level for future patient how to deal and treat [33]. This study found that on the dimension of faculty or institution-related stress was 55.79. Acharya's (2003) study shows that stress caused by the faculty's behaviour and created environment was higher among dental students. Sometimes Students face criticism from the staff for the clinic and academic work as well as criticized in front of the patients so that students feel more stressed.

This study found that the mean percentage of Personal related stress was 46.41, which were least than other dimensions [27]. Therefore to reduce stress among dental students organization should improve the dental environment as well as several measures which might play a role in stress management, including reviewing the educational programs, modifying student evaluation methods, enhancing the quality of counselling programs, focus student centre academic policies and stress reduction program needs to be implemented at all dentistry school.

This study has some limitations in interpreting the findings, such as public and private dental school, Pre-clinical and clinical-related stress. This study also does not compare academic performance to their final grade. Moreover, this study was only a questionnaire based via online, so that the authors cannot find out unfairness in the students' responses.

CONCLUSIONS

Age, choice of study, the current area of residence and academic year was statically associated. Severe Levels of stress increased over the academic year and peaked in 5th year. Professional and carrier-related stressors, academic performance and Clinic related stress are seen higher. Stress affect student's academic and professional carrier in future so stress reduction session should be implemented to all dental students to minimize as well as prevent stressor by improving clinical environment as well as aware all faculty how to deal to minimize stressors.

ADDITIONAL INFORMATION AND DECLARATIONS

Acknowledgements: Researcher would like to express heartfelt thanks to Professor Raj Kumar Mehta from School of Nursing, Chitwan Medical College. Researchers' sense of gratitude and appreciation go to all respondents who participated in this study.

Competing Interests: The authors declare no competing interests.
Funding: Self-funded
Author Contributions: Concept and design: SG, JPS, SKC, SP and RC; Statistical analysis: JPS;, Writing of the manuscript: SG, RC; Data collection: SG,RC; Revision and editing: SG,JPS, S.KC, SP and RC. All authors have read and agreed with the contents of the final manuscript towards publication.
Data Availability: Data will be available upon request to corresponding authors after valid reason.

REFERENCES

1. Butler G. Definitions of stress. Occas Pap R Coll Gen Pract 1993;61:1-5
2. Yadav N. Sharma A & Jain M. Stress-a silent killer in dentistry. *Journal of Dental Sciences* Vol. 4, No. 2, Decmber 2017.
3. Dyson R, Renk K. Freshmen adaptation to university life: Depressive symptoms, stress, and coping. *J ClinPsychol* 2006;62:1231-44.
4. Jain A, Bansal R. Stress among Medical and Dental Students: A Global Issue *IOSR journal of Dental and Medical Sciences* 2012;1(5):5-7,
5. Berman A, Synder SJ, Koizer B, Erb G. fundamental of nursing concept, process and practice. 8th edition. 2008. Published by Dorling Kindersley (India). Page no 1061.
6. Muirhead V, Locker D. Canadian dental students' perceptions of stress and social support. *European Journal of Dental Education* 2008;12(3):144-8.
7. Alzahem AM, Van Der Molen HT, Alaujan AH, Schmidt HG, Zamakhshary MH. Stress amongst dental students: A systematic review. *Eur J Dent Educ* 2011; 15(1):8-18.
8. Yadav N. Sharma A & Jain M. Stress-a silent killer in dentistry. *Journal of Dental Sciences* Vol. 4, No. 2, Decmber 2017.
9. Kumar S, Dagli R, Mathur A, Jain M, Prabu D, Kulkarni S. Perceived sources of stress amongst Indian dental students. *Eur J Dent Educ* 2009; 13:39-45.
10. Hawazin W. Elani.Stress in Dental Students: A Mixed Methods.Montreal May 2012
11. Sanders AE, Lushington K. Effect of Perceived stress on student performance in dental school. *Journal of Dental Education*, 2002, 66, 75-81.
12. Newbury-Birch D, Lowry RJ, Kamali F. The changing patterns of drinking, illicit drug use, stress, anxiety and depression in dental students in a UK dental school: a longitudinal study. *British Dental Journal* 2002;192(11):646-9.
13. Sedky NA. Perceived sources of stress among junior and mid-senior Egyptian dental students. *Int J Health Sci (Qassim)* 2012;6:141-57.)
14. Al-Samadani KH, Al-Dharrab A. The Perception of Stress among Clinical Dental Students. *World J Dent* 2013;4(1):24-8.
15. Sekhon TS, Grewal S, Gambhir RS, Sharma S. Perceived sources of stress among dental college students: An Indian perspective. *Eur J Gen Dent* 2015;4:121-6.
16. Berman A, Synder SJ, Koizer B, Erb G. fundamental of nursing concept, process and practice. 8th edition. 2008. Published by Dorling Kindersley (India). Page no 1061.)
17. Paudel S, Subedi N, Shrestha A (2013) Stress and its Relief among Undergraduate Dental Students in a Tertiary Health Care Centre in Eastern Nepal. Dentistry 3: 157.doi: 10.4172/2161-1122.1000157
18. McEwen BS. Protective and damaging effects of stress mediators. *NEngl J Med* 1998; 338: 171-9
19. Gorter R, Freeman R, Hammen S, Murtomaa 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(2): 61-6
20. Acheampong AO, Anafi FA, Gyimah NTA, Amuasi A, Obiri-Yeboah S, Sabbah DK, Nyarko A, Nartey MN .et.al. The Perspectives of Kwame Nkrumah University of Science and Technology Dental School Graduates. *Open Journal of Stomatology*, 2018.8, 158-167. https://doi.org/10.4236/ojst.2018.85015)
21. Manivasakan S, Raman SK, Devy AS, Saravanakumar R. The clinical dental undergraduate's perception of stress origin in India:Across-sectionalstudy. *JNat ScBiol Med* 2018;9:197-200.
22. Sravani A, Doshi D, Kulkarni S, Reddy P, Reddy S. Depression, anxiety and stress among undergraduate dental stuents in Hyderabad city, Telangana, India: A cross-sectional study. *J Indian Assoc Public Health Dent* 2018; 16:26-9
23. Basudan S, Binanzan N, Alhassan A. Depression, anxiety and stress in dental students. *Int J of medical education*, 2017;8:179-186.
24. Heath JR, Macfarlane TV, Umar MS. Perceived sources of stress in dental students. Dent Update 1999;26:94-8, 100.)
25. Polychronopoulou A, Divaris K. Dental students' perceived sources of stress: a multi-country study. *J Dent Educ.* 2009;73:631–9
26. Pau AK, Croucher R. Emotional intelligence and perceived stress in dental undergraduates. *J Dent Educ* 2003; 67(9):1023–8
27. Acharya S. Factors affecting stress among Indian dental students. 2003;67:1140-8.
28. VJ Wilson; CA Rayner; NA Gordon; AB sheikh; K cormbie; S yasin-Harnekar. Perceived stress among dental students at the University of the Western Cape . *South African Dental Journal.* Vol.70 n.6 Johanneburg Jul.2015)
29. Bala Jyoti, Rajkumar, Singh VP. Dental environment stress, burnout and perceived health status among dental students. July 2018. *International Journal of advanced Research*. DOI: 10.21474/IJAR01/7444
30. Jowkar, Masoumi, Mahmoodian. Psychological Stress and Stressors Among Clinical Dental Students at Shiraz School of Dentistry, Iran. *Dove press Journal, Advances in medical Education and Practice.* 29-Nov-2022
31. Mirsaifi R, Daneshkazemi A, Sadeghian AH, Vosooghi MR. Evaluating stress level causes by studying environment and related factors in dental students of Yazd dental college in 2014. *Avicenna J Dent Res 2015*; 7(1): 1-4
32. Al-Saleh SA, Al-Madi EM, Al-Angari NS, Al-Shehri HA, Shukri MM. Survey of perceived stress-inducing problems among dental students, Saudi Arabia. *Saudi Dent J* 2010;22:83-8
33. Telang LA, Nerali JT, Telang A, Chakarvarthy PV. Perceived sources of stress among Malaysian students. *European J Gen Dent* 2013;2:300-7
34. Alzahem AM, Van der Molen HT, De Boer BJ. Effect of year of study on stress levels in male undergraduate dental students. *Adv Med Educ Pract*. 2013;4:217–222. doi:10.2147/AMEP.S46214.
35. Garbee WH Jr, Zucker SB, Selby GR. Perceived sources of stress among dental students. *J Am Dent Assoc.* 1980;100(6):853-7.
36. Yamane, Taro. (1976). Statistics: An Introductory analysis, 2nd edition, New york: Harper and Row, New York.