



## Original Article

## Should the Postgraduate Dental Curriculum Be Revamped? - A Stress Assessment Study

B R Premalatha<sup>1,\*</sup>, Usha Hegde<sup>2</sup>, Priyanka Nitin<sup>3</sup>, H S Sreeshyla<sup>3</sup>, Nitin V Muralidhar<sup>4</sup>, P Swetha<sup>5</sup>

<sup>1</sup>Reader, Department of Oral Pathology and Microbiology, JSS Dental College and Hospital, JSS Academy of Higher Education and Research, Mysuru, 570015, Karnataka, India

<sup>2</sup>Professor and Head, Department of Oral Pathology and Microbiology, JSS Dental College and Hospital, JSS Academy of Higher Education and Research, Mysuru, 570015, Karnataka, India

<sup>3</sup>Senior Lecturer, Department of Oral Pathology and Microbiology, JSS Dental College and Hospital, JSS Academy of Higher Education and Research, Mysuru, 570015, Karnataka, India

<sup>4</sup>Reader, Department of Orthodontics & Dentofacial Orthopaedics, JSS Dental College and Hospital, JSS Academy of Higher Education and Research, Mysuru, 570015, Karnataka, India

<sup>5</sup>Professor, Department of Oral and maxillofacial Pathology, Vishnu Dental College, Bhimavaram, Andhra Pradesh, India

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## \* Corresponding author.

B R Premalatha

[drpremalathabr\\_dch@jssuni.edu.in](mailto:drpremalathabr_dch@jssuni.edu.in)

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## ABSTRACT

Dental education is widely regarded as a demanding experience. Information about the stress sources and their degree is crucial since it will aid in the development of appropriate interventional methods for the student's overall development. Thus, our study was aimed at assessing the different forms of stress that affect Postgraduate dentistry students, as well as their attitudes toward psychiatric therapies. The study was conducted on 93 postgraduate dental students at a dental institution in Mysuru, India, using a cross-sectional questionnaire-based survey format. The information gathered was statistically examined. The mean and standard deviation were used in the quantitative analysis. The mean of all stressor scores was compared between groups using an independent sample t-test and one-way ANOVA. The Chi-square test was employed to examine qualitative data. The overall stress level among postgraduate dental students was high. All the year students demonstrated a similar trend with a high level of academic stress followed by health-related and psychosocial stress. The academic stress increased as the year of study progressed. We discovered no differences in stress perception between male and female students. In addition, a notable proportion of the participants had a favourable attitude toward psychiatric therapy. Stress levels among postgraduate dental students were found to be high in our study. This indicates a need for upgrading the current postgraduate dental educational system to be less stressful.

**Keywords:** Dental education; Dental students; Mental health; Postgraduation; Stress; Stressors

### 1 INTRODUCTION

Psychological stability is a significant aspect of student life which contributes toward success in academics and also success in life in general<sup>(1)</sup>. Individual, interpersonal, and institutional components of a student's life are all affected by mental health<sup>(2,3)</sup>. It is often assumed that dental education and stress are interconnected<sup>(4)</sup>. Dental education is an extensive course which can be quite taxing on the students' mental resources<sup>(5,6)</sup>. Postgraduate (PG) training in Dentistry is a sophisticated educational programme which presents distinct hurdles to young professionals<sup>(5)</sup>. Several

studies have revealed that dental students are prone to excessive stress and, as a result, encounter a variety of mental health disorders.<sup>(7)</sup>

It is a well-known truth that there are many stigmas associated with psychiatric diseases among all segments of society, including dental students<sup>(1)</sup>. As a result, it is not surprising that dentistry students also don't seek professional medical help when in need.<sup>(7)</sup>

It's imperative that these future doctors are competent both physically and mentally as they are going to be the backbone of the healthcare system<sup>(8,9)</sup>. While a substantial

number of studies exist regarding the mental health of undergraduate (UG) dental students, similar studies among PG dental students are lacking<sup>(10)</sup>. Information regarding the sources and magnitude of stress is important, as it helps design appropriate interventional strategies for the all-round development of students. In this regard, we undertook the current research to assess the different forms of stress that affect postgraduate dental students, as well as their attitudes about psychiatric therapies.

## 2 MATERIAL AND METHODS

The current research was undertaken at a dentistry institution in Mysuru city, India. The study was designed as a cross-sectional survey and approval by the Institutional Ethics Committee was obtained (JSSDCH IEC Research protocol no: 49/2018). The study sample consisted of PG students pursuing Master of Dental Surgery (MDS) from nine dental specialties namely: Oral Medicine and Radiology, Pedodontics, Public Health Dentistry, Oral and Maxillofacial Surgery, Periodontics, Prosthodontics, Conservative Dentistry and Endodontics, Orthodontics and Oral Pathology & Microbiology. The criteria for inclusion in the study was consenting individuals. Incompletely answered forms were not considered for the study. The PG students were divided into 3 groups – Year I (1<sup>st</sup> year MDS), Year II (2<sup>nd</sup> year MDS) and Year III (3<sup>rd</sup> year MDS).

A questionnaire was prepared with 66 items consisting of questions on Psychosocial stressors (26 items), Health-related stressors (23 items), Academic stressors (12 items) and attitude towards psychiatric therapy (5 items). The questionnaire was self-administered type and was subjected to validation and piloting procedures. A 5-point Likert scale was employed and the responses for questions on stressors were designated as: Never, Rarely, Sometimes, Often and Always. For each positive statement, the responses were weighed as 5,4,3,2 and 1 respectively. To avoid biases in giving similar responses, some questions were rephrased as negative statements. These responses were weighted as 1,2,3,4 and 5 respectively. Four categories were arrived at based on the cumulative scores: Category 1: Severe stress (score between 80 to 132), Category 2: Moderate stress (133-177), Category 3: Mild stress (178-222) and Category 4: Normal/ no stress (223-267). The responses for questions on attitude towards psychiatric therapies were: Strongly agree, agree, neutral, disagree and strongly disagree and were weighed 1 to 5 respectively for each negative statement. A positive response was defined as a mean score of less than four, whereas more than four was defined as a negative response.

The students were invited to complete the questionnaire forms. The anonymous nature and the study's purpose were explained to the participants. SPSS 22 software (Statistical Package for Social Sciences version 22) was utilized to analyze the information gathered. The mean and standard

deviation were used in the quantitative analysis. The mean of all stressor scores was compared between groups using an independent sample t-test and one-way ANOVA. The Chi-Square test was employed to examine qualitative data. The level of statistical significance was fixed at 5%.

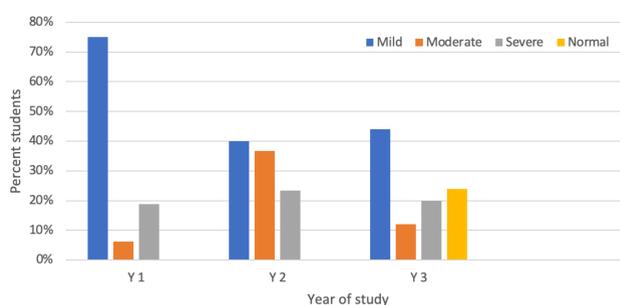
The study consisted of 93 students, 6 of whom were withdrawn owing to incomplete paperwork. A final total of 87 PG students were part of the study. Table 1 indicates the final research population's demographic characteristics.

**Table 1: The final research population's demographic characteristics**

Academic Year	Male	Female	Total
I	6	26	32
II	5	25	30
III	4	21	25
<b>Total</b>	<b>15</b>	<b>72</b>	<b>87</b>

## 3 RESULTS

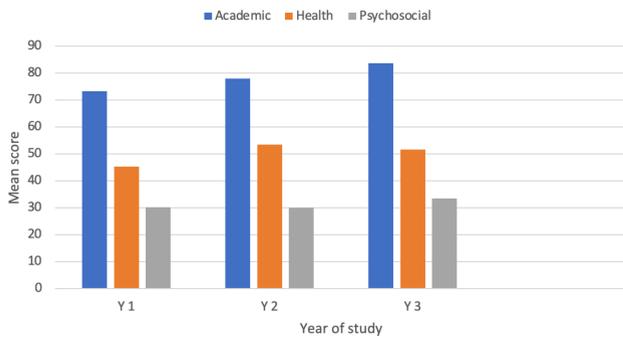
The overall stress levels of Year I, II, and III PG students were measured and classified as normal, mild, moderate, and severe. Mild stress was reported by 75% of first-year students followed by severe (18.8%) and moderate stress (6.2%). Mild stress (40%) was most common among second-year students, followed by moderate (36.7%) and severe (23.3%). Mild stress (44%) was reported by the third-year students, followed by normal (24%), severe (20%) and moderate (12%). Normal (no stress) students accounted for 0% of first- and second-year students. The findings were deemed statistically significant ( $p=0.00$ ). Graph 1 depicts the specifics.



**Graph 1: Overall levels of stress among the PG dentistry students in Years I, II, and III. \*Chi-Square test**

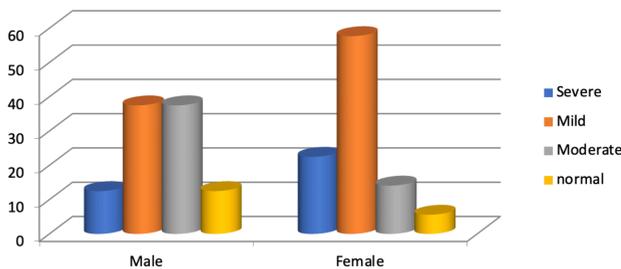
On assessment of academic, psychological, and health-related stressors in PG dental students in Years I, II and III, it was found that the academic stress increased as the study year increased and it was a statistically significant finding ( $p=0.04$ ). The results for psychosocial and health-related stress were statistically insignificant. All the year students showed a similar trend with an escalated level of

academic stress followed by health-related and psychosocial stress. The mean values of the responses were as follows: Academic stress: Year I-73.25, Year II-78, Year III- 83.7; health-related stressors: Year I-45.3, Year II-53.5, Year III- 51.7 and psychosocial stressors: Year I-30.2, Year II-30.1, Year III- 33.5. The details are depicted in Graph 2.



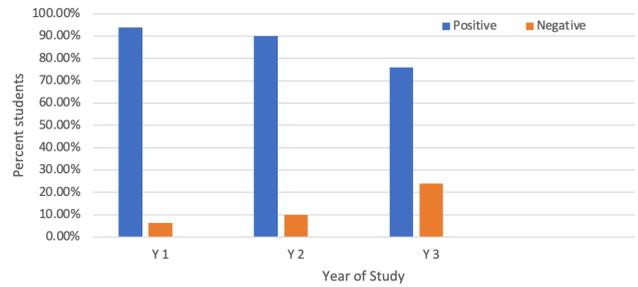
Graph 2: Academic, psychosocial, and health-related stress levels of Year I, II, and III PG dental students. \*One Way ANOVA

On comparison of stress levels between the gender, 57.7% female students had mild stress followed by severe (22.5%), moderate stress (14.1%) and 5.6% were in the normal category. Among the male students, 37.5% experienced mild stress followed by moderate (37.5%), severe (12.55%) and 12.5% were in the normal category. The results of the comparison of overall stress levels between the gender were determined to be statistically negligible ( $P=0.09$ ). The details are represented in Graph 3.



Graph 3: Overall stress levels between the male and female students. \*Chi-Square test

When students' attitude towards receiving psychiatric treatment was assessed, a sizable number demonstrated a favourable attitude. The year I (93.8%) and II (90%) expressed more favourable responses compared to year III (76%). However, the differences between the years were statistically insignificant. The details are depicted in Graph 4.



Graph 4: Attitude of PG dentistry students toward Psychiatric therapies. \*Post Hoc Tests

#### 4 DISCUSSION

Stress is often considered a double-edged sword<sup>(11)</sup>. Some degree of stress has a good influence in the form of improved performance, knowledge and skills acquisition and self-confidence<sup>(8,12)</sup>. However, high-stress levels can have a damaging effect in the form of physical and mental health issues, poor academic performance, low life quality and self-esteem.<sup>(7,8)</sup>

The PG program in Dentistry is a full-time three-year course that on successful completion results in a Master's degree in Dental Surgery (MDS) specific to each speciality<sup>(5)</sup>. Unlike graduation, post graduation presents a new set of challenges in a student's life, like working under the same faculty members and studying the same subject<sup>(13)</sup>. PG students frequently have a variety of clinical, educational, and research duties. In a relatively short time, they are expected to acquire a vast quantity of knowledge, attitudes, and abilities. Apart from this, examinations, long work hours, lack of time for recreational activities, financial constraints, family duties and uncertainty about future employment add substantially to the stressful situation<sup>(5,10,14,15)</sup>. These stressors can result in development of mental health issues such as depression, anxiety, burnout and also other problems such as substance abuse, absenteeism and diminished work efficiency<sup>(16)</sup>. Stress can also negatively impact patient care<sup>(17-19)</sup> and increase rates of medical errors<sup>(10)</sup>. Thus, in recognition of the significance of mental health, this research was conducted to assess the different forms of stress that affect postgraduate dental students, as well as their attitudes about psychiatric therapies.

On assessing the overall stress levels, our results showed that most students from all the three years of the course experienced mild stress followed by moderate and severe stress. Notably about three fourth of first-year students experienced mild stress and about a quarter of third-year students did not experience any stress. No students from the first and second years fell in the normal stress category. When the type of stressors was considered, all the year students showed a similar trend with escalated level of academic stress followed by health-related and psychosocial

stress. Similar to our results, another study on medical PG students observed that academic stress was the most important stressor. Academic stress coming on top is no surprise as the PG students are expected to accumulate vast amount of knowledge and gain abilities to accurately diagnose and appropriately treat the patients.<sup>(8)</sup>

Similar to our results few other studies among PG dental students<sup>(2,5,11)</sup> and PG medical students<sup>(14,17,20)</sup> found significant stress levels. In contrast, a study by Divaris et al on Swiss dental residents observed low levels of perceived stress and burnout<sup>(10)</sup>. Another study observed that medical PG students described stress as “severe”, while among dental PG students, many reported having “mild” stress.<sup>(16)</sup>

On comparison between the years of study, our study revealed that the academic stress increased as the study year progressed and the result was significant statistically. Findings by Divaris et al showed that the overall stress progressively escalated with the year of study<sup>(10)</sup>. Studies on dental PGs by Shetty A et al<sup>(5)</sup> and medical PGs by Singh N et al<sup>(4)</sup> did not find stress levels to be linked to the year of study. Few studies reported that second-year students experienced maximum stress among both medical PGs<sup>17</sup> and Dental PGs<sup>(7,13,21,22)</sup>. Few other studies on medical PGs<sup>(8,16,20)</sup> and Dental PGs<sup>(16)</sup> reported that final year students experienced maximum stress. A study on medical PG students by Gobbur SB et al reported that first-year students showed more stress<sup>(23)</sup>. A study by Joshi RA and Nagpal M showed a direct correlation between perceived stress and salivary cortisol levels among first and final year PG medical students.<sup>(8)</sup>

On comparison between the gender, our study did not reveal statistically significant difference in the stress levels experienced. This is in agreement with a few studies on Dental PGs<sup>(11,13)</sup>. In contrast, some studies on dental PGs<sup>(17,24)</sup> and medical PGs<sup>(4,17,25)</sup> showed that male students were more stressed compared to females. Few other studies on dental PGs<sup>(2,5,9,10)</sup> and medical PGs<sup>(9)</sup> showed females with higher levels of stress. In our study, when the grade of stress levels was compared, females showed predominantly mild stress, whereas males showed mild and moderate levels of stress to be in equal percentage.

On assessment of attitude towards psychiatric therapies, a sizable majority of our study population expressed positivity. This suggests that the younger generation is open-minded and unprejudiced about getting medical attention and care for their mental health issues. We did not find any similar study in the literature, probing this aspect of PG dental students.

With the findings of our study, we suggest that besides professional education and training, educators, administrators and policymakers must consider the overall holistic development of the students<sup>(1)</sup>. Dental education regulating bodies ought to take steps to provide students with employment opportunities and financial security; and also implement regulations to make examination systems less stressful.<sup>(5)</sup>

Mentorship, campus social network and integrated learning must be introduced<sup>(2)</sup>. The curriculum must be upgraded to integrate communication and life skills, stress and time management, extra-curricular activities, sports, yoga, meditation and relaxation techniques. It's also essential to have full-time, on-campus counsellors available<sup>(1)</sup>. The students' living conditions and their recreational facilities must also be improved<sup>(7)</sup>. Early identification of vulnerable students with regular mental health screening programs must be organized<sup>(4,8)</sup>. Periodic counselling sessions emphasizing stress management and coping methods are essential<sup>(4)</sup>. Also, mental health awareness programs are the need of the hour.

## 5 CONCLUSION

Our study observed that stress levels are high among dental postgraduate students. This should alert the policy-makers to nip the problem at the bud stage by upgrading the current postgraduate dental educational system to be less stressful. This will not only enhance the academic environment and professional training but also will ensure competent future doctors who will be the pillars of a robust healthcare system.

## REFERENCES

- 1) Premalatha BR, Hegde U, Shirona AP, Sreeshyla HS, Vidya GD, Nitin P. Assessment of various stressors affecting the undergraduate dental students at Mysuru, India- A cross-sectional study. *Annals of the Romanian Society for Cell Biology*. 2021;25(5):5571–5578. Available from: <http://annalsofscb.ro/index.php/journal/article/view/6540>.
- 2) Jain M, Sharma A, Singh S, Jain V, Miglani S. The stress of clinical dental training: A cross-sectional survey among dental students and dentists of a dental college in India. *Journal of Indian Association of Public Health Dentistry*. 2016;14(4):434–439. Available from: <https://www.jiaphd.org/article.asp?issn=2319-5932;year=2016;volume=14;issue=4;spage=434;epage=439;aulast=Jain>.
- 3) Kessler RC, Foster CL, Saunders WB, Stang PE. Social consequences of psychiatric disorders, I: Educational attainment. *The American Journal of Psychiatry*. 1995;152(7):1026–1032. Available from: <https://doi.org/10.1176/ajp.152.7.1026>.
- 4) Singh N, Badkur M, Chouhan Y, Patel S, Khan A, Melwani V. Determination of stress levels among post graduate students of Gandhi Medical College, Bhopal: A cross-sectional study. *National Journal of Community Medicine*. 2018;9(9):675–679. Available from: <https://njcmindia.com/index.php/file/article/view/793/577>.
- 5) 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. Available from: <https://nitte.edu.in/journal/december2014/SABA.pdf>.
- 6) Atkinson JM, Millar K, Kay EJ, Blinkhorn AS. Stress in dental practice. *Dental Update*. 1991;18(2):60–64. Available from: <https://europepmc.org/article/med/1915991>.
- 7) Mathew MJ, Sudeep CB, Jain J, Jain V. Perceived sources of stress among postgraduate students of a dental college in Karnataka. *Journal of Indian Association of Public Health Dentistry*. 2017;15(3):230–233. Available from: <https://www.jiaphd.org/article.asp?issn=2319-5932;year=2017;volume=15;issue=3;spage=230;epage=233;aulast=Mathew>.
- 8) Joshi AR, Nagpal M. Assessment of Perceived Stress in Postgraduate Medical Students during Training Programme. *Journal of Clinical and Diagnostic Research*. 2018;12(6):1–4. Available from: <https://doi.org/10.7860/JCDR/2018/28300.11634>.

- 9) Nayak MR, Rout D, Dash M, Behera T, Sahoo S. Impact of perceived stress among medical postgraduate students of SCB Medical College, Odisha, India and its relation with burn out. *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*. 2019;18(8):25–27. Available from: <https://www.iosrjournals.org/iosr-jdms/papers/Vol18-issue8/Series-12/F1808122527.pdf>.
- 10) Kimon D, Lai CS, Polychronopoulou A, Eliades T, Katsaros C, ;. Stress and burnout among Swiss dental residents. *Schweizer Monatsschrift für Zahnmedizin*. 2012;122(7-8):610–615. Available from: <https://doi.org/10.5167/uzh-76301>.
- 11) Nettam V, Mandava P, Singaraju GS, Ganugapanta VR, Yelchuri H, Peddu R. Comparison of Stress, burnout and its association among postgraduate orthodontic and undergraduate students in India. *Indian Journal of Dental Sciences*. 2018;10(2):66–71. Available from: [https://doi.org/10.4103/IJDS.IJDS\\_127\\_17](https://doi.org/10.4103/IJDS.IJDS_127_17).
- 12) Hoonpongsimanont W, Murphy M, Kim CH, Nasir D, Compton S. Emergency medicine resident well-being: stress and satisfaction. *Occupational Medicine*. 2014;64(1):45–48. Available from: <https://doi.org/10.1093/occmed/kqt139>.
- 13) Chacko A, Tikku T, Srivastava K. Evaluation of psychological stress in orthodontic PG students in India. *International Journal of Orthodontic Rehabilitation*. 2017;8(1):19–25. Available from: <https://doi.org/10.4103/2349-5243.200218>.
- 14) Abraham J, Navya CJ, Joshy V. Perceived stress and coping strategies among post graduate students of a medical college in Thrissur, Kerala. *International Journal Of Community Medicine And Public Health*. 2019;6(2):814–817. Available from: <https://doi.org/10.18203/2394-6040.ijcmph20190213>.
- 15) Thomas NK. Resident Burnout. *JAMA*. 2004;292(23):2880–2889. Available from: <https://doi.org/10.1001/jama.292.23.2880>.
- 16) Tamilselvan AS, Thapa R, Sharma AD, Thapa T, Singh S. How stressed are our postgraduate medical and dental postgraduate students in southern Asia? A cross-sectional survey. *International Healthcare Research Journal*. 2020;4(9):OR1–OR4. Available from: <https://doi.org/10.26440/THRJ/0409.12361>.
- 17) Chandan N, Sherkhane MS. Assessment of stress and burnout among postgraduate medical students. *National Journal of Community Medicine*. 2017;8(4):178–182. Available from: <https://njcmindia.com/index.php/file/article/view/655>.
- 18) Sherman JJ, Cramer A. Measurement of Changes in Empathy During Dental School. *Journal of Dental Education*. 2005;69(3):338–345. Available from: <https://doi.org/10.1002/j.0022-0337.2005.69.3.tb03920.x>.
- 19) Hojat M, Mangione S, Nasca TJ, Gonnella JS, Magee M. Empathy Scores in Medical School and Ratings of Empathic Behavior in Residency Training 3 Years Later. *The Journal of Social Psychology*. 2005;145(6):663–672. Available from: <https://doi.org/10.3200/SOCP.145.6.663-672>.
- 20) Sharma B, Prasad S, Pandey R, Singh J, Sodhi KS, Wadhwa D. Evaluation of Stress among Post-graduate Medical and Dental Students: A pilot study. *Delhi Psychiatry Journal*. 2013;16(2):312–316. Available from: [https://www.researchgate.net/publication/349072994\\_Evaluation\\_of\\_stress\\_among\\_postgraduate\\_medical\\_and\\_dental\\_students\\_a\\_pilot\\_study](https://www.researchgate.net/publication/349072994_Evaluation_of_stress_among_postgraduate_medical_and_dental_students_a_pilot_study).
- 21) Polychronopoulou A, Divaris K. Perceived Sources of Stress Among Greek Dental Students. *Journal of Dental Education*. 2005;69(6):687–692. Available from: <https://doi.org/10.1002/j.0022-0337.2005.69.6.tb03952.x>.
- 22) Tangade PS, Mathur A, Gupta R, Chaudhary S. Assessment of stress level among dental school students: An Indian outlook. *Dental Research Journal*. 2011;8(2):95–101. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3177400/pdf/DRJ-8-95.pdf>.
- 23) Gobbur SB, Nigudgi SR, Reddy S. Prevalence of stress among post graduate doctors at Mahadevappa Rampure medical college Kalaburagi, Karnataka. *International Journal of Community Medicine and Public Health*. 2016;3(2):576–580. Available from: <https://doi.org/10.18203/2394-6040.ijcmph20160453>.
- 24) Acharya S. Factors Affecting Stress Among Indian Dental Students. *Journal of Dental Education*. 2003;67(10):1140–1148. Available from: <https://doi.org/10.1002/j.0022-0337.2003.67.10.tb03707.x>.
- 25) Malviya A, Tiwari S, Vandana Meena, Simhal B, Singh D. Stress among post graduate medical students in central India: A cross section study using perceived stress scale. *GJRA - Global Journal for Research Analysis*. 2016;5(3):368–370. Available from: [https://www.worldwidejournals.com/global-journal-for-research-analysis-GJRA/fileview/March\\_2016\\_1458037534\\_\\_124.pdf](https://www.worldwidejournals.com/global-journal-for-research-analysis-GJRA/fileview/March_2016_1458037534__124.pdf).