

Assessment of Various Stressors Affecting the Undergraduate Dental Students at Mysuru, India- A Cross-sectional Study

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ABSTRACT

Introduction: Professional Dental Education can be a stressful experience. Identification of the stress sources will not only help in advocating policy changes and strategies to alleviate the stress, but also will improve the academic performance and psychological well-being of the students. This study was undertaken to assess the various stressors affecting the undergraduate (UG) dental students and also to assess their attitude towards psychiatric treatment.

Materials and Methods: A questionnaire-based cross-sectional survey study was conducted at a private dental college, India, to assess academic stressors, psycho-social stressors, health-related stressors and the attitude towards psychiatric treatment among UG dental students. A five-point Likert scale was used to record the responses from the subjects. The data were statistically evaluated both quantitatively and qualitatively.

Results: Our results were statistically significant and showed that the overall stress levels among all the years of UG students was high and no student fell in the no stress category. Severe stress peaked in the first-year students followed by third-year students. An interesting finding noted was that students of all the years showed a similar trend in the type of stressor experienced with a high level of psycho-social stressors followed by health-related and lastly the academic stressors. There was no gender difference in stress perception and a significant portion of our study population expressed a positive attitude towards psychiatric treatment.

Conclusion: The immense burden of stress on undergraduate dental students indicates a need for stress management, interpersonal communication and life-skills programmes to be implemented into dental education.

Keywords: Dental students, Dental Education, Stress, Stressors.

Introduction

Academic life is an integral part of the student period. Performance in academic life demands all aspects of well-being, which encompasses physical, social, psychological and spiritual well-being. Psychological stability contributes significantly towards success in academics and life, in general. Stress, anxiety and depression are some of the common psychological problems faced by the student community of all streams.^[1] Stress is not a mental health disease but is a normal biological response to life situations. A minor amount of stress is in fact favourable and motivational. But if it aggravates, it may lead to mental health issues such as anxiety and depression. Anxiety and depression are treatable conditions that need to be addressed before they worsen and result in severe consequences and even death.^[2]

Dental students have to undergo extensive academic, pre-clinical and clinical training during the course of their learning.^[3] Stress in dental students may be multifactorial, arising from the academic and socio-cultural environment.^[4] Dental education is globally perceived as a highly demanding and stressful experience.^[5] A high-stress prevalence among dental students may result in poor academic performance, dropout, mental illnesses, substance abuse and even suicide.^[6]

Several studies from the USA, UK and Australia reveal that the students pursuing Dentistry are prone to high-stress levels and hence face mental health issues.^[7] Previous studies from India have shown that students of healthcare professional courses are more stressed than their counterparts of the same age group.^[8] It is a well-known fact that there is a lot of negativity among all sections of society towards psychiatric treatments, not

sparing the dental students too. Therefore, it is not surprising that dental students also fail to reach out to the care and professional psychiatric treatments when in need.

Dental students are the future doctors who provide care and treatment to patients in need. Their mental health status is equally important as their physical health. Thus, recognizing the importance of mental health, this study was undertaken with the objective to assess the various stressors affecting the undergraduate (UG) dental students and also to assess their attitude towards psychiatric treatments. Identification of the stress sources will not only help in advocating policy changes and strategies to alleviate the stress,^[4] but will also improve the academic performance and psychological well-being of the dental students.^[9]

Material and Methods

This cross-sectional survey study was conducted at a private dental college in Mysuru city, Karnataka state, India. The objectives of the study were to assess the academic, psycho-social and health-related stressors and the attitude towards psychiatric treatment among the UG dental students. The study was approved by the Institutional Ethics Committee. All the consenting UG dental students were included to be part of the study. Unwilling students and Internees were excluded. Incompletely filled questionnaire forms were withdrawn from the study. The UG Dental students were considered under 4 subgroups – Year I (1st BDS students), Year II (2nd BDS), Year III (3rd BDS) and Year IV (4th BDS).

A self-administered questionnaire form was prepared with a total of 66 items. The questions were divided into 4 categories based on the type of stressor as - Academic stressors (12 items), Psycho-social stressors (26 items), Health-related stressors (23 items), and questions on Attitude towards the psychiatric treatment (5 items). The questionnaire was subjected to face validation, content validation, response validation, reliable assessment, known group validation and piloting procedures under the guidance of subject experts of Psychiatry, Community Dentistry and Bio-statistics. The validation process revealed that the questionnaire was very clear and highly relevant.

A five-point Likert scale was used to record the responses to questions on Academic, Psycho-social and Health-related stressors as: Never, Rarely, Sometimes, Often and Always. The responses were weighted as 5, 4, 3, 2 and 1 respectively for each positive statement. Some questions were reversed as negative statements to eliminate biases of giving a single similar response in all the items. The responses for these questions were weighted as 1, 2, 3, 4 and 5 respectively. Based on the cumulative scores for the stressors, four groups were arrived at and each student was categorised as belonging to one of the four groups, namely: Group 1: Severe stress (score between 80 to 132), Group 2: Moderate stress (133-177), Group 3: Mild stress (178-222) and Group 4: No stress (223-267). Questions on Attitude towards the psychiatric treatment were also assessed using a 5-point Likert scale. The responses were: Strongly agree, Agree, Neutral, Disagree and Strongly disagree. The responses were weighed 1–5 respectively for each negative statement. The mean score of <4 represented a more positive response and >4 represented a negative response.

Informed consent was taken from all the participants and the questionnaires were distributed in classrooms by the investigators and the filled forms were collected. The data were statistically evaluated both quantitatively and qualitatively. Quantitative analysis was done by taking the mean and standard deviation. The mean of all the stressor's score between different subgroups was compared with the Independent sample t-test and one-way ANOVA. Qualitative data were analyzed by the Chi-Square test. Statistical significance was fixed at 0.05 and statistical analysis was done using Statistical Package for Social Sciences version 22 (SPSS 22).

Results

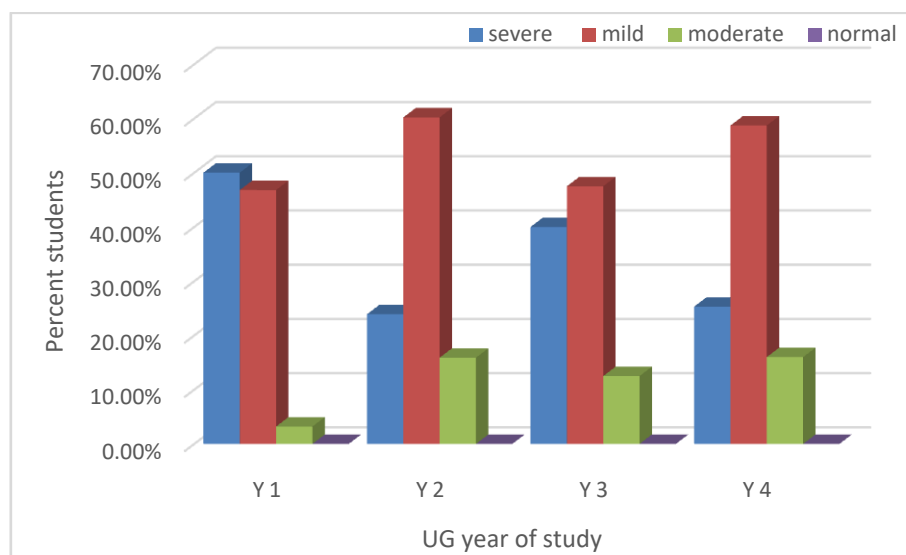
A total of 421 students participated in the study of which 126 were withdrawn due to incompletely filled forms. The final study population consisted of 295 UG students. The demographic details of the final study population are presented in **Table 1**.

Table 1: The demographic details of the final study population

Academic Year	Male	Female	Total
Year I	16	77	93
Year II	17	70	87
Year III	11	29	40
Year IV	15	60	75
Total	59	236	295

Overall stress levels: The overall stress levels which were categorized as normal, mild, moderate, and severe stress among the Year I, II, III and IV UG students was assessed and was found to be statistically significant ($P=0.001$). The details are shown in **Graph 1**.

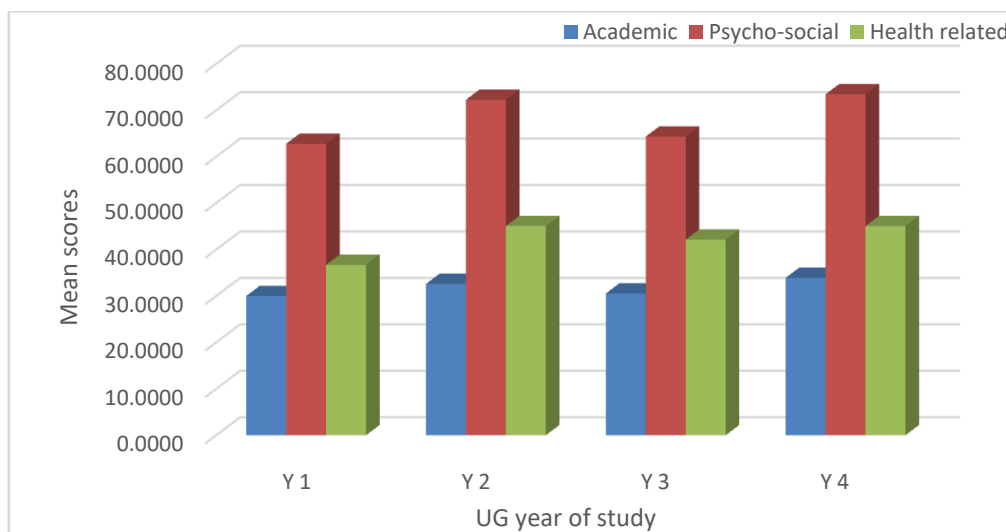
The year I students showed severe stress (50%) followed by mild (46.8%), and moderate stress (3.2%). Among Year II students, mild stress (60.2%) was relatively more followed by severe (23.9%) and moderate stress (15.9%). Among Year III students 47.5% showed mild stress followed by severe (40%) and moderate stress (12.5%). Final year UG students showed mild stress (58.7%) followed by severe (25.3%) and moderate stress (16%). Among all the groups, 0% of students fell in the no stress or normal category.



*Chi-Square test

Graph 1: Overall stress levels categorized as normal, mild, moderate and severe stress among the Year I, II, III and IV UG Dental students.

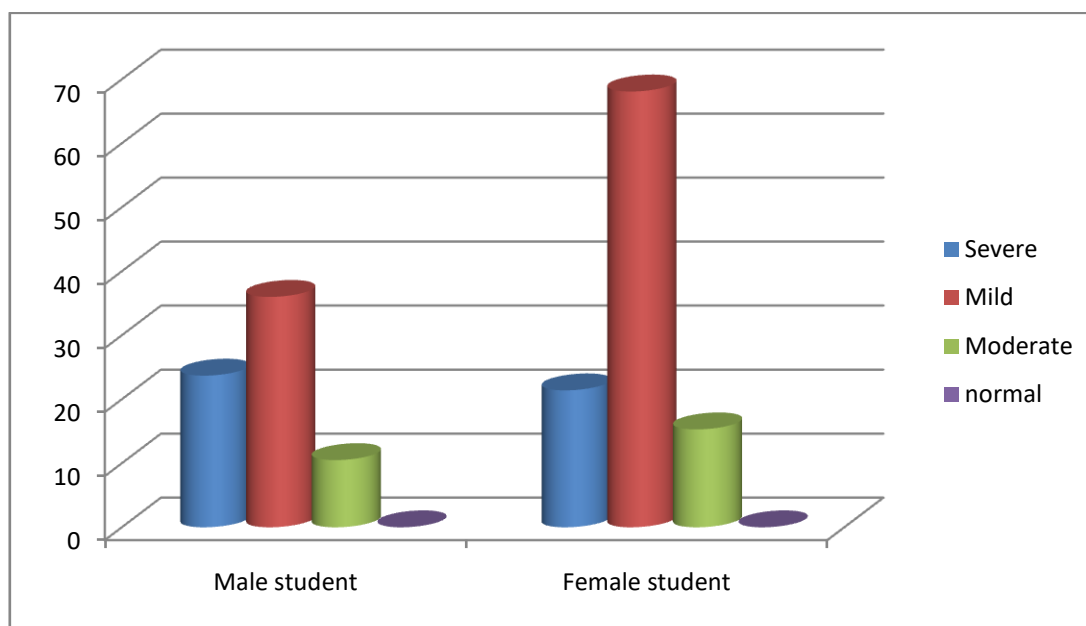
Stressor type experienced: Assessment of academic, psycho-social and health-related stressors among Year I, II, III and IV UG dental students was carried out and the results were statistically significant ($p=0.00$). The details are depicted in **Graph 2**. Students of all years showed a similar trend in the type of stressor experienced, with a high level of psycho-social stressors followed by health-related and lastly academic stressors. The mean scores of the responses for psycho-social stressors in percentage are - Year I-62.7, Year II-72.2, Year III-64.3, Year IV-73.4, followed by Health-related stressors - Year I-36.7, Year II-45.6, Year III-42.1, Year IV-45 and Academic stressors - Year I-29.9, Year II-32.5, Year III-30.5, Year IV-33.8.



*One Way ANOVA

Graph 2: Comparison of the mean scores of Academic, Psycho-social and health-related stressors among Year I, II, III and IV UG Dental students.

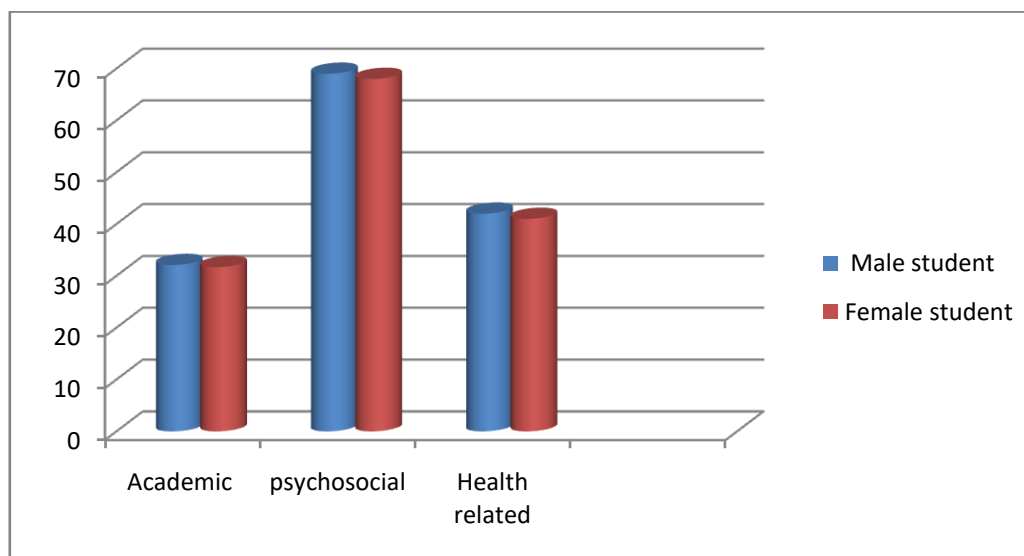
Comparison between the gender: On comparison of overall stress levels between the male and female students, the results were found to be statistically insignificant ($P=0.4$). The female students showed better stress management with 68.1% falling under the mildly stressed category compared to 36% males. However, both male and female students fared similarly in the severely stressed (23.7% and 21.4% respectively) and moderately stressed (15.3% and 10.5% respectively) categories. None of the students fell under the no stress or normal category. The details are represented in **Graph 3**.



*Chi-Square test

Graph 3: Comparison of overall stress levels categorized as normal, mild, moderate, severe stress between the male and female UG Dental students.

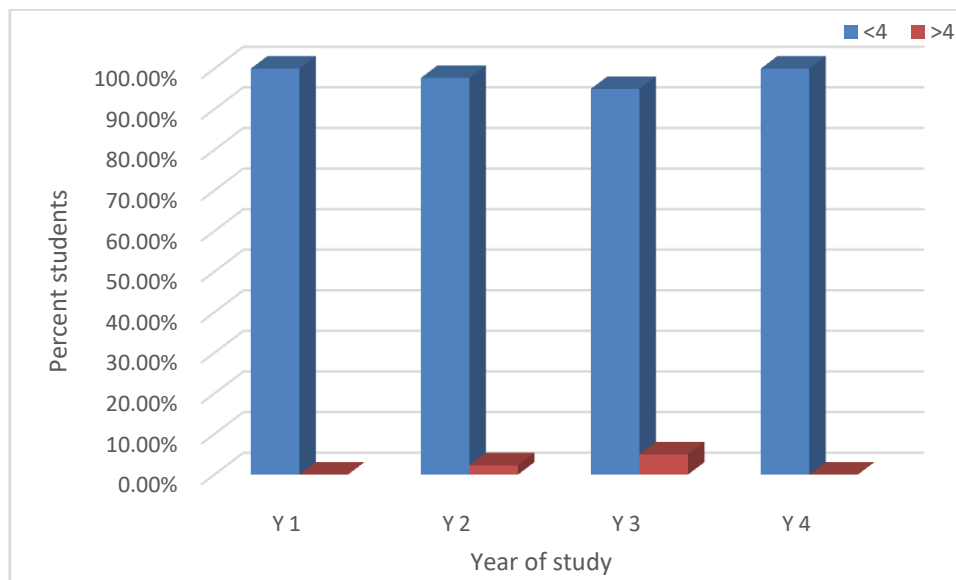
On comparison of various types of stressors among the male and female students, it was found that both faced similar levels of Academic, Psycho-social and Health-related stressors. Mirroring the results of comparison between the different academic years of students, psycho-social stress was the highest type of stressor experienced followed by health-related and academic stressors. The details are presented in **Graph 4**.



*T-test

Graph4: Comparison of the mean scores of Academic, Psycho-social and Health-related stressors among Male and Female UG Dental students.

Attitude towards psychiatric treatment: When attitude towards the psychiatric treatment among the students was assessed, more than 90% of students expressed a positive attitude. The year I and IV showed more positive response compared to Year III and II. However, the differences were statistically insignificant ($P=0.075$). The details are represented in **Graph 5**.



*Post Hoc Tests

Graph5: Attitude towards the psychiatric treatment among the UG Dental students.

Discussion

India has the world's largest dental education system with 310 dental institutions, with 26,000 undergraduate and 5,400 postgraduate dentists graduating every year.^[4] Currently, the undergraduate dental curriculum is of five years duration in India, which includes a one-year compulsory Internship. The first two years mainly focus on Basic sciences and Pre-clinical Dentistry. Later two years are dedicated to core dental subjects and imparting clinical skills. At the end of each academic year, the student's clinical skills and theoretical knowledge are judged based on oral, written and practical examination. During the Internship, in order to get clinical exposure, the students are rotated through different dental specialities.^[2,4] Cooper et al. reported that the dental profession was ranked the most stressful when compared to other healthcare professions.^[10] Thus, recognizing the importance of mental health and the need to identify the various types of stressors affecting the UG dental students, this study was undertaken.

Overall stress levels: Varying results regarding stress levels experienced by different years of students have been reported by different investigators. Findings reported by some studies show that the overall stress increased progressively through the year of study.^[11, 12] Few other studies have observed that stress was highest in third-year students when they transition to clinical settings.^[3, 13, 14, 15]

Some previous investigations have noted that the overall stress levels were significantly higher among the clinical year UG students (Years 3, 4) than those in the preclinical years (Year 1 and 2).^[4, 12, 16] However, a study by Westerman et al. noted that non-clinical years were more stressful.^[17]

Our result shows that the overall stress level among all the years of UG dental students was high. Most of the students reported mild stress followed by severe and moderate stress with no student falling in the no stress category. In our study, the severe stress peaked in the first-year students followed by the third-year students.

Severe stress being experienced mainly by the first-year students could be due to the fact that most of our study population were hostelites and moving away from home and adjusting to the new environment is perceived to be stressful. Similar to our results, Zeyad et al found that students reported increased psychological symptoms in the first year. Dental educators can support students during this phase by ensuring that the students have realistic expectations about the programme, as well as provide adequate information and encouragement to access student support facilities.^[11]

Severe stress peaking again during the third- year in dental students could be due to the new set of challenges they face as they transit from the pre-clinical to the clinical phase of their study. This calls for special attention at structuring the clinical programme, particularly at the point of transition from pre-clinical to clinical phase to suit the needs of the students.^[3]

Stressor type experienced: Our results elicited an interesting finding that all year students showed a similar trend in the type of stressor experienced with the highest levels of psycho-social stressors followed by health-related and lastly the academic stressors. Our finding of psycho-social stressors consistently remaining high among all the year dental students is unique and unreported in any other investigation. This indicates the need for rethinking the dental education programme with a more holistic learning environment being incorporated, where life skills and academic training are provided with equal emphasis.

In contrast to our findings, a study has reported that psychological stress increased from the first to the fifth year of study.^[18] Results of few more investigations have shown that psychological stress was highest in final year students and lowest in first-year students.^[19, 20, 21]

Also, we did not find any other study investigating the health-related stressors experienced among UG dental students. The fact that health-related stressors ranked above academic stressors, provides new insight that the younger generation is greatly concerned about their health and well-being. This calls for adequate attention to the students' healthcare needs to be given by the concerned institutional authorities.

Comparison between the gender: In India, there is an emerging trend of more women opting for Dentistry as a profession.^[3] This trend is recognized in the current study as well, where 80 % of the study population were females. Our study revealed that female students showed better stress management. However, the results were statistically not significant.

Varying and contrasting observations have been reported with respect to stress among the male and female dental students. In agreement with our results, few studies observed no effects of gender on perceived stress levels.^[3, 5, 18, 22, 23, 24, 25] In contrast, some studies found a significant difference between genders, and it was observed that male students had higher mean stress scores than their female counterparts.^[9, 26] Few other studies found that female students perceived more stress than male students.^[11, 27, 28]

Attitude towards psychiatric treatment: An overwhelming 90% of our study population expressed a positive attitude towards psychiatric treatment. This indicates that the younger generation is more open and non-judgemental towards seeking help for mental health concerns. In our literature search, we did not find any similar study on UG Dental students investigating this aspect.

Future directions: The value of this type of investigation is to identify the sources of stress in dental students so that educators and administrators can bring about the necessary policy modifications and strategies to alleviate the stress.^[12] It has to be emphasized that, besides imparting professional education, it is equally essential to give consideration to the quality of life and holistic development of the students.^[29] It is necessary to alter the curriculum in order to incorporate stress management, and life-skill programmes such as Yoga, meditation, relaxation techniques, time management, sports and extra-curricular activities.^[30] Availability of full-time, in-campus counsellors is also imperative. These programmes must be readily available and directed at enhancing the dental student's overall well-being.^[12]

Limitations of the study: Although our study brought forth significant findings, there are several limitations that present scope for further scientific explorations. Our study was conducted at a single dental college and lacks generalization of results. As it is a cross-sectional study carried out at a single point in time, the stress perception in students may vary in a more normalized distribution and larger sample size. Also, follow-up of the same student batches as they progress through their year of studies could reveal a different perspective on the nature of stress experienced. Since the information was obtained from a self-administered questionnaire, information bias cannot be ruled out. And no control population was used in the current study.

Conclusion

Our results show that the overall stress level among all the years of undergraduate dental students was high with severe stress peaking in the first year followed by the third-year students. Our result elicited an interesting finding that Psycho-social stressors consistently remained high among all the years of students, followed by health-related and academic stressors. We did not find any gender difference in stress perception. Also, a significant portion of our study population expressed a positive attitude towards psychiatric treatment.

The immense burden of stress on undergraduate dental students indicates a need for stress management, interpersonal communication and life-skill programmes to be implemented into dental education to improve the student's overall well-being.

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