

Burnout in dental students: Navigating stress, exhaustion and academic pressure

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Abstract

Background and Aim: Dentistry is quite a challenging profession which demands physical and mental efforts along with patient interaction, resulting in burnout. Student burnout is defined as 'negative reactions resulting in emotional exhaustion, depersonalization, and diminished personal accomplishment along with reduced academic efficiency due to prolonged academic stress'. Burnout is commonly associated with high stress levels, anxiety and depression. Students' well-being may improve if these psychological issues are addressed and managed at an early age. This study aimed to determine the prevalence of burnout in dental students of our institute and find its relationship to socio-demographic characteristics.

Materials and Methods: This questionnaire-based study was conducted in our institute, and a total of 200 dental students were included in the study. Students were surveyed using a self-reported questionnaire that included 25 questions related to burnout symptoms, stress, anxiety, depression and demographic characteristics. The Google Forms questionnaire was sent via e-mail to the target students, and their responses were recorded.

Results: The study showed that the following categories of students were more stressed than others: postgraduate students (28.1%), students belonging to middle-class socioeconomic status (77.4%) and female (54.3%) students.

Conclusion: It is pertinent to mention here that in our study, we have not used any specific scale like depression anxiety stress scale-21 (DASS-21), Maslach Burnout Inventory scale, etc., Instead, we prepared a questionnaire for dental students of our institute based on anxiety, stress, etc., Hence, we are of the opinion that further research is warranted to explore additional factors contributing to burnout and mental health issues among dental students and to develop effective strategies for prevention and intervention.

Keywords: Anxiety, burnout, dental students, depression, stress

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INTRODUCTION

Burnout is defined as a protracted reaction to ongoing emotional and interpersonal stressors. The global literature

has recognised three dimensions of burnout: exhaustion, professional inefficacy and cynicism.^[1] Emotional exhaustion, burnout and stress are the phrases widely used in literature on concerns linked to problems at

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work.^[2] Burnout impedes social and personal functioning, results in reduced work quality and harms one's mental well-being.^[3] The psychological effects of student burnout include suicidal thoughts, sadness, a lower quality of life, diminished academic performance and giving up on ambitions for their education and careers.^[4-6]

Dental students face a highly demanding learning environment as the field demands a combination of clinical and theoretical knowledge, as well as face-to-face practice and daily patient interaction.^[7] Stress is a result of certain external physical or mental factors that affect an individual's physical and psychological well-being.^[8]

To check mental health, tools like the Beck Depression Inventory (BDI), Maslach Burnout Inventory, Cambridge Depersonalisation Scale, Hospital Anxiety and Depression Scale, Spielberger State-Trait Anxiety Inventory and Self-Rating Depression Scale have been used alone or in combination. Thus, it would be beneficial to examine stress, anxiety and depression using one tool rather than multiple assessments.^[7]

The objective of this study was to 1) assess the severity of burnout among dental students; 2) understand the contributing factors like academic, clinical and personal stress leading to burnout; 3) evaluate the impact of burnout on mental health, academic performance and overall well-being of the students; 4) identify the coping mechanism to manage stress and prevent burnout and 5) provide recommendations for institutions to implement support system in the form of wellness programmes and counselling to create effective measures to prevent the risk of suicide and dropping out of college.^[4,9,10]

MATERIALS AND METHODS

This cross-sectional, institutional-based, questionnaire study was conducted by the Department of Oral and Maxillofacial Pathology in the month of June–July 2024. Two hundred student participants (undergraduate and postgraduate dental students) were included in the study. Data was collected using a self-administered questionnaire that was prepared through Google Forms and was sent via e-mail to the target students. Date of ethical approval: Sept 2024.

The study population was divided into two groups:

group A – undergraduates (first, second, third, final year students and interns)

group B – postgraduates

The questionnaire consisted of 25 questions related to socio-demographic characteristics, stress, anxiety, depression and burnout. The questionnaire consisted of four main sections. The first section included questions related to socio-demographic characteristics such as age, gender, year of study, marital status, etc., The second section included questions related to stress; the third and fourth sections included questions related to anxiety and depression, respectively.

RESULTS

A total of 200 students (both undergraduates and postgraduates) participated in the study. Their responses revealed the following results, which were found to be statistically significant. Females reported a higher level of stress (54.3%) compared to males (45.7%). Majority of the students in the age group of 24 years and above presented with higher stress (12.1%) compared to others. Highest stress levels were observed among group B students (28.1%) as compared to group A students. The stress levels differed in students of different socioeconomic status. In group B, middle-class students faced the highest stress (73.2%) compared to students belonging to other socioeconomic backgrounds and among group A also, middle class students faced more stress compared to others with a percentage of 78.4%. The study revealed that only 12.5% of group B and 28.5% of group A students have been facing health-related issues. Among group A students, 46.5% suffered frequently from headache, gastric issues and backaches, whereas among group B students, only 46.4% suffered. In group A, 27.7% students experienced twitching, stiffness, myoclonic jerks and teeth grinding sometimes, 11.1% experienced them often, 4.8% always, 31.9% rarely and 23.6% never experienced them, while among group B students, 30.3% students experienced twitching, stiffness, myoclonic jerks and teeth grinding sometimes, 7.1% experienced them often, 7.1% always, 30.3% rarely and 25% never experienced them. The study also revealed that among group A students, 25% students noticed themselves shouting often at others for no reason, while 30.5% did it sometimes, 25% always, 9.7% rarely and 9% never shouted. Among group B students, 28.5% students noticed themselves shouting often at others for no reason, while 37.5% did it sometimes, 25% always, 5.3% rarely and 3.5% never shouted. Furthermore, in group A, 21.5% students often, 31.2% sometimes, 2.7% always, 29.1% rarely and 14.5% never had difficulty in falling asleep, experienced broken sleep, woke up feeling fatigued or had nightmares. In group B, 25% students often, 32.1% sometimes, 3.5% always, 32.1% rarely and 7.1% never had difficulty in falling asleep, experienced broken sleep, woke up feeling fatigued or had nightmares. The study also revealed that among group A students, 11.1%

often, 46.5% sometimes, 4.1% always, 25.6% rarely and 11.8% never felt angry, irritated or annoyed with the people around them. In group B, 19.6% students often, 44.6% sometimes, 7.1% always, 19.6% rarely and 8.9% never felt angry, irritated or annoyed with the people around them. In group A, 20.1% students often, 40.27% sometimes, 11.8% always, 21.5% rarely and 6.25% never experienced pressure from deadlines, while in group B, 37.5% students often, 32.14% sometimes, 17.8% always, 5.3% rarely and 7.14% never experienced pressure from deadlines. In addition, 23.2% of group B students often, 33.9% sometimes, 12.5% always, 21.4% rarely and 5.35% never felt uninterested or demotivated to engage in activities, while in group B, 15.9% students often, 44.4% sometimes, 2.7% always, 22.9% rarely and 13.8% never felt uninterested or demotivated to engage in activities [Tables 1 and 2].

DISCUSSION

Stress and emotional exhaustion have an impact on dental students' academic performance.^[11] In addition, stress and emotional exhaustion can trigger other psychological disorders such as depression, which can lead to college dropout and increased risk of suicide.^[10,12] Dentists, due to professional specificities, face different stresses based on cause, duration and impact, such as workplace stress in the form of work responsibilities and high patient workload, financial stress, physical stress like specific working posture, and episodic acute and chronic stress due to working within the limited space of the oral cavity.^[13] The literature has shown that the chronicity of this stress, combined with factors such as lack of energy and enthusiasm, feelings of

exhaustion, job dissatisfaction and emotional instability, may lead to the onset of burnout syndrome.^[14] It is possible for the syndrome to have an early onset, during the graduate course, and this may enhance the future onset of the syndrome in these professionals.^[15]

Our study is first of its kind and unique in a sense that we didn't use any scale like beck depression inventory (BDI), Maslach Burnout Inventory, Cambridge Depersonalization Scale etc for the purpose of this study but we framed it on questions related to Stress, anxiety, depression etc. Pohlmann *et al.* found high scores of Burnout in Dentistry students which align with the findings of our study with group B (postgraduates) having higher levels of stress which, according to the authors, may reflect the insecurity felt by students in dealing with patients.^[16] On the other hand, Carlotto *et al.* found no presence of the syndrome among students, but found high levels of Exhaustion similar with the findings of our study along with increased anger, annoyance and shouting without any reason.^[17] This fact, according to Pohlmann *et al.* can be explained by the anxiety, students feel regarding assessments, the little leisure time, and the stress felt in the transition to the clinical phase. Wayt observed that personal relationships have a greater effect on college student's persistence in studying than academic factors but our findings revealed no such relationship.^[18] Rosal *et al.* noted that when medical students enter medical school, they exhibit depression levels comparable to those of the general population, but these levels increase notably as they progress through medical school which was confluent to our study with postgraduates having highest degree of stress.^[19] According to Othman Z *et al.*, dental students report three times more psychological stress than medical students,^[20] due to more academic burden compared to medical students.^[21]

CONCLUSION

Dental students often face high levels of depression, stress and anxiety, with a significant number experiencing moderate to severe burnout. It is important to offer support and resources to those students who are struggling with their mental and physical health need as soon as they begin their studies. Efforts should focus on addressing both chronic physical and mental health issues and reducing the stigma associated with mental health challenges. In addition, interventions should be customised to address the unique needs and cultural contexts of dental students, considering the various expressions of depression and the specific stressors related to different stages of their academic journey.

Table 1: Socio-demographic characteristics of the study participants

| Sociodemographic characteristics | Percentage of participants |
|----------------------------------|----------------------------|
| Gender | |
| Male | 45.7% |
| Female | 54.3% |
| Age in years | |
| Below 24 | 87.9% |
| Above 24 | 12.1% |
| Study year | |
| First year | 22.1% |
| Second year | 7% |
| Third year | 16.6% |
| Final year | 17.1% |
| Interns | 9% |
| Postgraduates | 28.1% |
| Socioeconomic status | |
| Upper class | 2.75% |
| Upper middle class | 17.1% |
| Middle class | 77.4% |
| Lower class | 2.75% |
| Marital status | |
| Unmarried | 84.4% |
| Married | 15.6% |

Table 2: Questions based on anxiety, stress, depression and burnout used in the survey (based on percentage values)

| Questions asked (based on health status and symptoms) | | Percentage (%) | | | | |
|---|--|----------------|-----------|--------|--------|-------|
| | | Often | Sometimes | Always | Rarely | Never |
| Group A | Health-related issues | | | 28.5 | | |
| | Pains and aches, twitching, stiffness, myoclonic jerks and teeth grinding | 11.1 | 27.7 | 4.8 | 31.9 | 23.6 |
| | Difficulty in falling asleep, experience broken sleep, wake up feeling fatigued or have nightmares | 21.5 | 31.2 | 2.7 | 29.1 | 14.5 |
| | Headache, gastric issues and backaches | | | 46.5 | | |
| | Shouting at others for no reason | 25 | 30.5 | 25 | 9.7 | 9 |
| | Feeling angry, irritated or annoyed with the people around | 11.1 | 46.5 | 4.1 | 25.6 | 11.8 |
| | Under pressure from deadlines | 20.1 | 40.2 | 11.8 | 21.5 | 6.2 |
| | Uninterested or demotivated to engage in activities | 15.9 | 44.4 | 2.7 | 22.9 | 13.8 |
| Group B | Health-related issues | | | 12.5 | | |
| | Pains and aches, twitching, stiffness, myoclonic jerks and teeth grinding | 7.1 | 30.3 | 7.1 | 30.3 | 25 |
| | Difficulty in falling asleep, experience broken sleep, wake up feeling fatigued or have nightmares | 25 | 32.1 | 3.5 | 32.1 | 7.1 |
| | Headache, gastric issues and backaches | | | 46.4 | | |
| | Shouting at others for no reason | 28.5 | 37.5 | 25 | 5.3 | 3.5 |
| | Feeling angry, irritated or annoyed with the people around | 19.6 | 44.6 | 7.1 | 19.6 | 8.9 |
| | Under pressure from deadlines | 37.5 | 32.1 | 17.8 | 5.3 | 7.1 |
| | Uninterested or demotivated to engage in activities | 23.2 | 33.9 | 12.5 | 21.4 | 5.3 |

Proper counselling, motivational talks and strong peer and faculty support are essential for the mental well-being of dental students. The intense academic and clinical workload often leads to burnout, making stress management crucial. Institutions should promote mindfulness, time management and open discussions on mental health, while ensuring access to professional counselling. A supportive environment fosters resilience, helping students stay motivated and balanced throughout their studies and careers.

Further research is warranted to explore additional factors contributing to burnout and mental health issues among dental students and to develop effective strategies for prevention and intervention.

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Conflicts of interest

There are no conflicts of interest.

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