

Prevalence and Severity of Burnout in Undergraduate Dental Students: A Study among Dental Colleges of Western Maharashtra

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ABSTRACT

Background:

Continuous exposure to academic pressure, clinical skill acquisition, and patient care responsibilities may subject Dental students to elevated stress and burnout, thereby compromising their overall welfare and potentially affecting safety of the patients.

Aim:

The study aimed to evaluate the burnout levels in Dental students and explore its impact on their mental health, academic performance, and coping mechanisms.

Methods:

This study employed a cross-sectional, Questionnaire-based survey design to assess burnout level among Undergraduate Dental students via Google forms.

Results:

115 students participated in the survey, with 48.7% male and 51.3% female participants. The majority were in their third year (29.6%) and fourth year (25.2%) of study.

Conclusion:

This study revealed that a significant proportion of Undergraduate Dental students experience moderate to high levels of academic pressure. Many students feel mentally drained after a full day of academic or clinical work and struggled to manage time between lectures, assignments, clinics and preclinical practical. These findings highlight the need to encourage a positive academic environment, where students feel supported, balanced and better equipped to handle the demands of Dental education.

Keywords: Burnout syndrome, Mental health, Dental education

INTRODUCTION

Managing a demanding academic schedule, developing hands-on clinical skills, and ensuring high-quality patient care puts Dental students under constant pressure. Though these responsibilities aim to shape competent professionals, they often lead to mental and emotional exhaustion. The continuous need to perform, adapt, and advance in a fast-evolving field creates an ongoing psychological pressure —heightened by the very nature of the profession they are training to enter. [1]

Maslach and Leiter define burnout as a psychological syndrome marked by chronic emotional exhaustion and growing cynicism, particularly prevalent among professionals who engage in continuous interpersonal interactions as part of their work [2]. This condition arises from prolonged mental strain caused by personal and social dynamics leading to both psychological strain and body fatigue [3].

Academic burnout, often resulting from intense academic pressure, can lead to reduced enthusiasm and interest in one's field of study. This disengagement may also stem from limited opportunities for personal growth, prompting students to consider alternative careers that offer greater potential for skill development and fulfilment [4].

The drive to achieve professional excellence frequently leads individuals to overlook essential dimensions of their personal well-being [5]. Although burnout is primarily a psychological phenomenon, its impact extends to physical health. Studies have linked burnout to heightened susceptibility to serious medical conditions such as diabetes and heart disease. It is also commonly associated with physical complaints including backaches, muscle tension, and cervical strain [6].

In the context of Dental education, estimating the prevalence and severity of burnout is important because it significantly affects students' mental and physical health. Furthermore, it may negatively influence clinical performance and the overall quality of patient care, thus impacting the broader healthcare system [7].

Addressing burnout in Dental students is crucial for ensuring their mental and physical health and also for sustaining high-standard, patient-centred Dental practice.

Methodology:

The manuscript complies with the STROBE guidelines, which provide a standardized framework for reporting cross-sectional observational studies in a transparent and comprehensive manner [8].

Research question:

What is the burnout level of students in Dental colleges?

Study design:

The research has cross-sectional design.

Study settings:

It was carried out at School of Dental Sciences, Krishna Vishwa Vidyapeeth, Karad.

Participants and sampling technique:

A simple random sampling strategy was adopted to identify eligible participants. Undergraduate Dental students enrolled at different Dental colleges of Western Maharashtra were considered the target population. All students from the first through the final academic year who met the inclusion criteria were approached, and participation was presented as entirely voluntary.

Sample size calculation:

The sample size of the study was calculated using the Cochran's formula with a desired confidence level of 95% and an error margin of 5%. Based on these parameters, a sample size of 106 was calculated as an acceptable sample size.

Research instrument:

A structured, self-administered questionnaire consisted of two sections. The first section gathered basic demographic details such as age, gender, academic year, living arrangements. The second section focused on getting insights into knowing the amount the academic pressure experienced by the students.

Data collection:

The questionnaire was distributed electronically via a Google Forms link to facilitate standardized distribution, systematic data management and accessibility for all participants. Prior to participation, informed consent was obtained from all respondents. The questionnaire was reviewed for clarity and reliability before being distributed. Participation was entirely voluntary, and all responses were kept anonymous to maintain confidentiality.

Data analysis:

Once all the questionnaire responses were collected, the data was carefully reviewed to ensure it was complete and accurate. The information was first organized using **Microsoft Excel** and then analysed using **IBM SPSS (Version XX)**, a commonly used software for research data.

We began by summarizing the students' responses to get a clear picture of the overall trends—such as how many students reported feeling emotionally exhausted or academically overwhelmed. We also looked at whether responses varied across groups, such as between different years of study or between male and female students.

To make sure our questionnaire was reliable and consistent, we checked how well the questions worked together using the built-in tools in SPSS.

Throughout the process, we kept all student information confidential and focused on interpreting the results in a way that was meaningful, respectful, and true to the data.

RESULTS

Out of 140 students invited, 115 completed the survey—a response rate of 82.14%

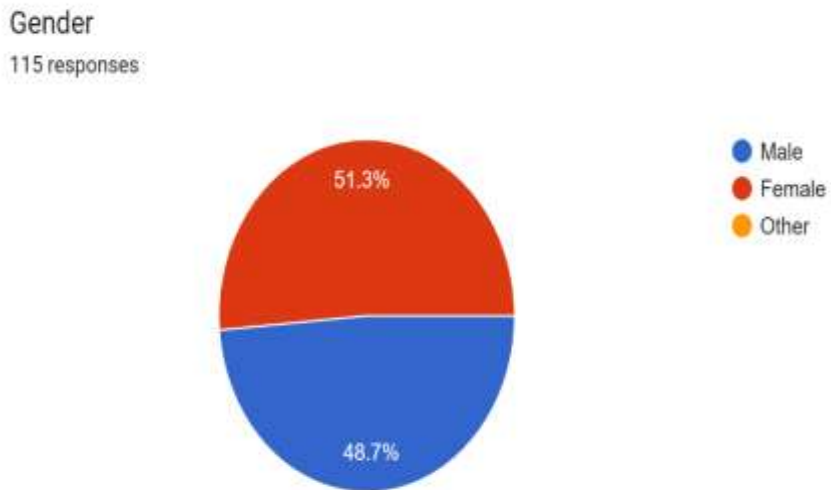


Fig1.

Among them, 51.3% were female and 48.7% were male.

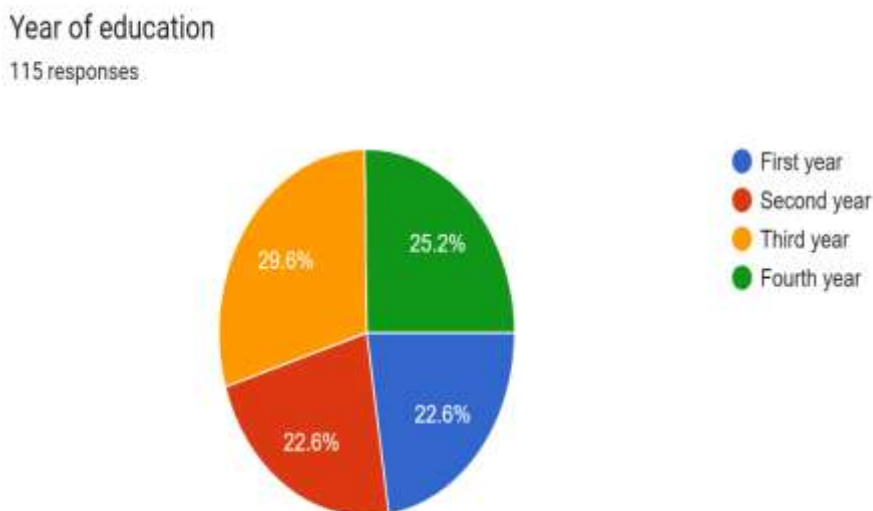


Fig 2.

The students were spread across 1st, 2nd, 3rd and 4th year of the program.

Living arrangements:

50.4% live in the hostel

20.9% live in a shared flat/apartment

15.7% live with parents

13% live in a private flat/apartment

115 responses

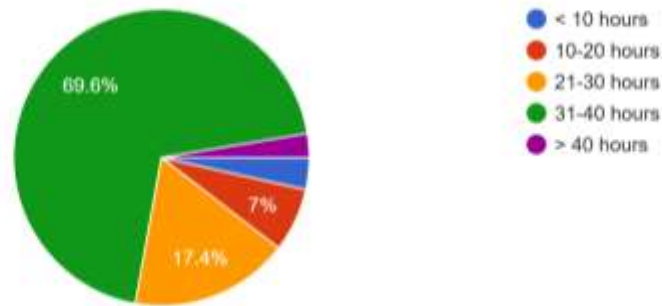


Fig 3. Hoursspent (per week) on studies and academic work outside of class/clinical postings:

69.6% students spend 31-40 hours
17.4% students spend 21-30 hours
7% students spend 10-20 hours
3.5% students spend < 10 hours
2.6% students spend > 40 hours

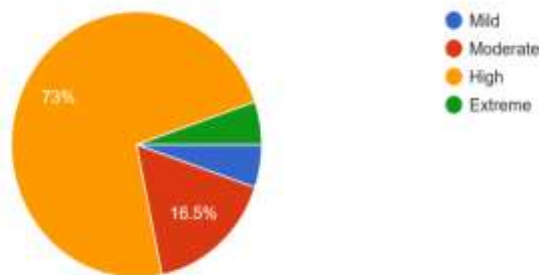


Fig 4. Academic pressure felt by students:

73% students experience high academic pressure
16.5% students experience moderate academic pressure
5.2% students experience mild academic pressure
5.2% students experience extreme academic pressure

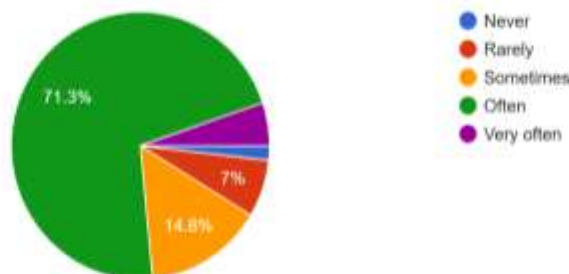


Fig 5. Students feel mentally drained after a full day of academic or clinical work:

Never -1.7% of students
Rarely – 7% of students
Sometimes – 14.8% of students
Often – 71.3% of students
Very often- 5.2% of students

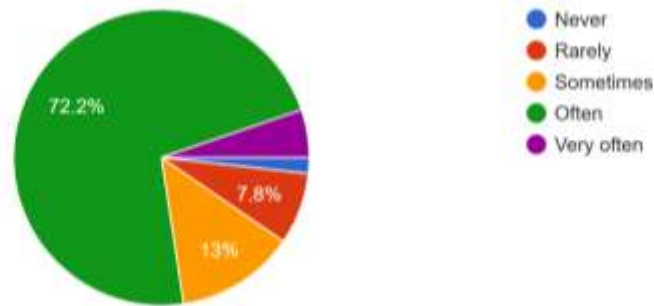


Fig 6. Students struggle to manage time between lectures, assignments, clinics/preclinical practical:

Never – 1.7% of students
Rarely – 7.8% of students
Sometimes – 13% of students
Often – 72.2% of students
Very often- 5.2% of students

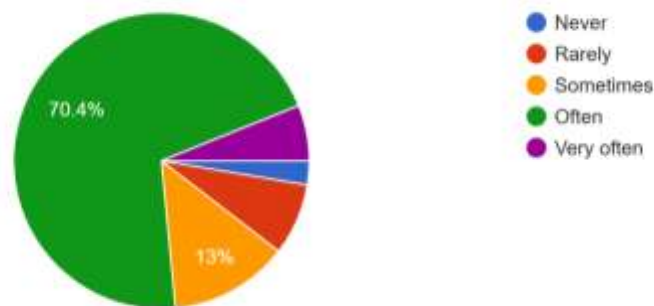


Fig 7. Students feel anxious before performing clinical procedures on patients:

Never – 2.6% of students
Rarely – 7.8% of students
Sometimes – 13% of students
Often – 70.4% of students
Very often- 6.1% of students

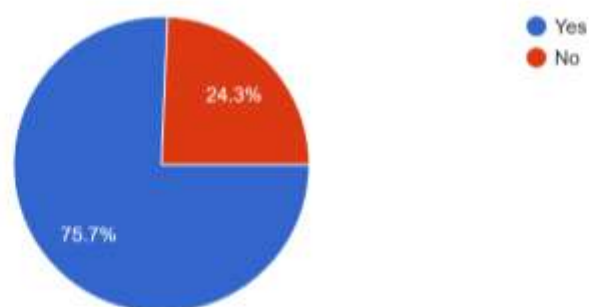


Fig 8. Time for hobbies/extra-curricular activities:

75.7% of students feel they have less time for hobbies/extra-curricular activities
24.3% of students feel they have enough time for hobbies/extra-curricular activities

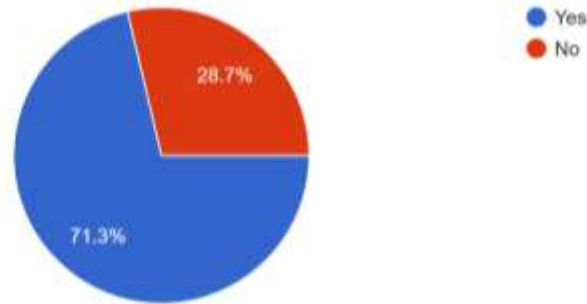


Fig 9. 71.3% of students can talk to someone (family, friends, faculty) when they feel overwhelmed.

28.7% of students are unable to talk to someone (family, friends, faculty) when they feel overwhelmed.

Table 1: Results Summary

Questions	Option 1	Option 2	Option3	Option 4	Option 5	Total
1.Living arrangements	With parents (15.7%)	Hostel (50.4%)	Shared flat/apartm ent (20.9%)	Private flat/apartment (13%)		n=115
2. How many hours per week do you spend on studies & academic work outside of class / clinical postings?	<10 hrs (3.5%)	10-20 hrs (7%)	21-30 hrs (17.4%)	31-40 hrs (69.6%)	>40 hrs (2.6%)	n=115
3. How would you rate the academic pressure you currently feel?	Mild (5.2%)	Moderate (16.5%)	High (73%)	Extreme (5.2%)		n=115
4. I feel mentally drained after a full day of academic or clinical work	Never (1.7%)	Rarely (7%)	Some-times (14.8%)	Often (71.3%)	Very Often (5.2%)	n=115
5. I often struggle to manage time between lectures, assignments, clinics / pre-clinical practical	Never (1.7%)	Rarely (7.8%)	Some-Times (13%)	Often (72.2%)	Very Often (5.2%)	n=115
6. I feel anxious before performing clinical procedures on patients	Never (2.6%)	Rarely (7.8%)	Some-Times (13%)	Often (70.4%)	Very Often (6.1%)	n=115
7. I have little time for hobbies / extra-curricular activities	Yes (75.7%)	No (24.3%)				n=115
8. I can talk to someone (family, friends, faculty) when I feel overwhelmed	Yes (71.3%)	No (28.7%)				n=115

DISCUSSION

The findings from this study reveal that a substantial proportion of undergraduate Dental students dedicate a significant amount of time to academic work beyond their scheduled classes and clinical postings. Notably, 69.6% of respondents reported spending 31–40 hours per week on academic tasks outside formal teaching hours, while an additional 17.4% reported spending 21–30 hours weekly. This intense commitment to self-study and coursework outside the classroom aligns with existing literature highlighting the high academic expectations placed on Dental students.[8]

The findings of this study make it abundantly evident that academic pressure is a major cause of stress and burnout among dentistry students. 73% of respondents who were asked to rate the amount of academic pressure they presently feel said they feel high pressure, while 16.5% said they feel moderate strain. Just 5.2% of students thought the pressure was extreme, while only 5.2% thought it was mild. In line with other research that found dentistry school to be extremely difficult both academically and clinically, almost nine out of ten students (89.5%) reported feeling moderate to high levels of academic pressure. Academic overload, which frequently results from the mix of theoretical learning, clinical performance expectations, and time-bound exams, is one of the main causes of stress for dentistry students.[9] One important aspect of academic burnout that seems to be very common among the dentistry students in this study is mental tiredness. After a full day of coursework or clinical work, 71.3% of students said they feel mentally exhausted, while 5.2% said they do so "very often." When taken as a whole, this indicates that more than 76% of respondents frequently suffer mental weariness, indicating that cognitive and emotional stress is a common occurrence in their academic lives. This finding is consistent with Maslach and Jackson's (1981) definition of burnout, which highlighted emotional weariness as the primary symptom, particularly in demanding educational and caregiving professions. Dental education is distinguished by its dual academic-clinical structure, which includes not only extensive theoretical study but also hands-on treatments requiring constant concentration and emotional engagement. As a result of this combined burden, people frequently experience chronic weariness and mental depletion.[10]

The findings of this study emphasise a key academic concern among undergraduate dentistry students: the difficulty of juggling several academic and clinical duties. In response to the statement "I frequently struggle to manage time between lectures, assignments, clinics / pre-clinical practical," 72.2% of students said "often," while 13% said "sometimes." This suggests that more than 85% of respondents have regular issues managing their time, emphasising the high scheduling needs of dentistry school. Dental programs are notoriously demanding; students must attend theory lectures, take part in hands-on labs, finish clinical rotations, write assignments, and study on their own. Due to this complex demand, students frequently have conflicting academic priorities that outweigh their ability to manage their time well. In addition to impairing academic achievement, ineffective time management greatly increases student stress, exhaustion, and ultimately burnout.[11]

Undergraduate Dental students frequently experience clinical anxiety, especially during the first several years of clinical exposure. Prior to performing clinical procedures on patients, 70.4% of students in the current study said they felt worried "often," 13% said they felt uncomfortable "sometimes," and 6.1% said they felt anxious "very often." This implies that a sizable majority (almost 90%) suffer from moderate to frequent anxiety in relation to clinical performance and patient contacts. Dental students, who frequently lack clinical experience, are expected to carry out technically complex procedures under close supervision. Performance-related anxiety is largely caused by this pressure, together with worries about patient injury, faculty criticism, and making mistakes (Humphris et al., 2002). A major stressor is the shift from preclinical to clinical practice, and this increased anxiety can have a negative impact on students' self-esteem, manual dexterity, and patient communication.[12]

A significant percentage of participants (75.7%) stated that they had limited time for extracurricular activities or hobbies, which suggests that undergraduate Dental students have a demanding academic schedule and inadequate work-life balance. Just 24.3% of respondents said they had enough time to engage in hobbies and interests outside of their academic obligations. This result is in line with previous research, which emphasises how the rigorous character of dentistry school contributes to students' low participation in extracurricular and leisure activities.[13]

Of the participants in this survey, 71.3% said they could talk to a faculty member, friend, or family member when they were feeling overwhelmed. This is a good sign since it shows that most of the Dental students who were polled felt that they have social support. But it's crucial to remember that a sizable minority (28.7%) said they had no one to turn to when they were feeling overwhelmed, pointing to a worrying weakness in emotional support networks. By their very nature, Dental programs can encourage intense competitiveness and pressure on students to perform well, which may unintentionally restrict their ability to communicate honestly and emotionally. In addition to being educators, faculty members frequently serve as potential support systems. Therefore, fostering relationships between mentors and mentees, setting up wellness committees, and setting up peer support groups may offer safer and easier ways for people to express their emotions.[14]

Reducing burnout among Dental students requires a range of interventions, including addressing academic workload, strengthening support systems, and promoting mental health awareness while being mindful of gender-related

differences. Managing workload involves enhancing time management skills and offering flexible scheduling to help students balance their responsibilities more effectively. Support structures can be reinforced by implementing initiatives such as family engagement sessions, peer support forums and mentorship schemes that provide both empathetic and solution-focused guidance. Access to counselling services within institutional facilities and comprehensive self-care programs can assist students in managing stress also improving their overall mental well-being. Additionally, integrating emotional coping skills development workshops and career counselling into the academic framework can equip students with essential skills for coping and long-term success.

However, certain limitations need to be acknowledged. Primarily, the sample was restricted to students from a single university, which may limit the generalizability of the findings. Including participants from multiple Dental schools across the country would offer a broader and more representative perspective on burnout levels among Dental students. Another limitation is that the questionnaire did not address how burnout might influence academic outcomes such as grades, attendance, or clinical performance, which limits the study's capacity to evaluate its tangible effects in an educational context.

Future research could focus on longitudinal studies to examine how burnout levels change as Dental students' progress from their pre-clinical to clinical years.

Furthermore, examining the connection between internal factors like personality traits, time management skills, confidence levels, and self-esteem with burnout could provide deeper insights.

CONCLUSION

Numerous undergraduate Dental students report feeling stressed about time management, clinical anxiety, and having little time for hobbies or extracurricular activities, according to this study. A significant percentage still lacks adequate emotional support, even if the majority have someone to talk to when they're feeling overwhelmed. According to these results, dentistry schools must implement efficient stress-reduction plans, encourage improved time management, and provide robust support networks. Improving students' mental health, academic performance, and general well-being during their dentistry education journey requires addressing these issues.

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Disclosure:

The author declares **no conflicts of interest** related to the content, authorship, or publication of this research.

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Legends:

Figure 1: Gender

Figure 2: Year of Education

Figure 3: Hours spent (per week) on studies and academic work outside of class/clinical postings

Figure 4: Academic pressure felt by students

Figure 5: Students feel mentally drained after a full day of academic or clinical work

Figure 6: Students struggle to manage time between lectures, assignments, clinics/preclinical practical

Figure 7: Students feel anxious before performing clinical procedures on patients

Figure 8: Time for hobbies/extra-curricular activities

Figure 9: Students able/ unable to talk to someone (family, friends, faculty)

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