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Burnout syndrome among teaching faculty in dental colleges in Marathwada region of Maharashtra: A Cross-Sectional Study

Sonali Shambharkar
Assistant Professor, Department of Prosthodontics, Crown and Bridge, Nanded Rural Dental College & Research Centre, Nanded, Maharashtra. drsbdent@gmail.com

Preeti Mankar
Associate Professor, Department of Prosthodontics, Crown and Bridge, Nanded Rural Dental College & Research Centre, Nanded, Maharashtra.
mankarisin@gmail.com

Nakul Mude
Assistant Professor, Department of Orthodontics, Nanded Rural Dental College & Research Centre, Nanded, Maharashtra. nakul12888@gmail.com

Manoj Sakhare
Assistant Professor, Department of Prosthodontics, Crown and Bridge,
Nanded Rural Dental College & Research Centre, Nanded, Maharashtra.
sakharemannu@gmail.com

Swati Pandey
Consultant Prosthodontist, Plot No.26, Saptagiri Colony, Taroda (Bk), Nanded, Maharashtra.
drswati7128@gmail.com

Minakshi Matre
Consultant Prosthodontist, Dr. Hedgewar Multi-Speciality Hospital, Aurangabad, Maharashtra.
minakshimatre18@gmail.com

Corresponding Author:
Sonali Shambharkar, Assistant Professor, Department of Prosthodontics, Crown and Bridge, Nanded Rural Dental College & Research Centre, Nanded, Maharashtra. drsbdent@gmail.com

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ABSTRACT

Background:

Burnout syndrome among teaching faculty in dental colleges has emerged as a significant concern worldwide, negatively impacting educators' mental well-being, teaching effectiveness, and job satisfaction. This study aimed to assess the prevalence of burnout among faculty in dental colleges in the Marathwada region of Maharashtra, India, and to identify contributing demographic, work-related, and institutional factors.

Objectives:

The primary objective was to evaluate the prevalence of burnout syndrome, focusing on emotional exhaustion, depersonalization, and personal accomplishment among dental faculty in the Marathwada region, and to identify factors that influence burnout.

Methods:

This cross-sectional study involved 210 dental faculty members from various academic ranks (professors, associate professors, assistant professors, and lecturers). Stratified random sampling was used to select participants. Burnout was measured using the Maslach Burnout Inventory (MBI), while psychological distress was assessed using the Depression, Anxiety, and Stress Scale (DASS-21). The DASS-21 is a self-report instrument consisting of 21 items, categorized into three subscales—depression, anxiety, and stress—measured over the past week using a 4-point Likert scale. Additional demographic and work-related data were collected through a self-administered questionnaire. The collected data were analyzed using descriptive statistics, correlation analysis, and regression techniques to identify significant factors contributing to burnout and psychological distress.s

Results:

The findings revealed that 45.11% of participants experienced high levels of emotional exhaustion, 36.11% exhibited high depersonalization, and 48.61% reported low personal accomplishment. Younger faculty (under 35 years) were more prone to emotional exhaustion, while older faculty members showed better coping mechanisms. Faculty in higher academic ranks (professors and associate professors) exhibited greater depersonalization, likely due to their increased administrative responsibilities. Work-related factors such as teaching load and work-life balance were significantly associated with burnout. Research involvement was linked to higher personal accomplishment, suggesting that faculty engaged in research reported lower burnout levels.

Conclusions:

Burnout syndrome is prevalent among dental faculty in the Marathwada region, particularly among younger faculty and those in higher academic positions. Factors such as heavy teaching loads and poor work-life balance significantly contribute to burnout. Increased research involvement appears to mitigate burnout by enhancing personal accomplishment. Interventions aimed at reducing workload, improving work-life balance, and promoting research engagement are essential for improving faculty well-being and reducing burnout in dental education.

Keywords:

Burnout syndrome, dental faculty, Marathwada region, emotional exhaustion, depersonalization, personal accomplishment, work-life balance, teaching load.

Introduction

Burnout syndrome is a psychological condition resulting from prolonged exposure to stressors in the workplace, often leading to emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment [1]. In the context of teaching professionals, particularly in the higher education sector, burnout can be a significant concern due to the high demands placed on educators [2]. For dental faculty members, the challenges can be even more pronounced, as they not only impart theoretical knowledge but also engage in clinical teaching, mentoring, research, and other administrative duties [3].

Dental colleges, especially in the Marathwada region of Maharashtra, have been facing increased pressure due to various factors such as heavy teaching loads, administrative responsibilities, student expectations, and a fast-paced academic environment. These demands, compounded by a inadequate professional development opportunities, and, at times, a shortage of support staff, can lead to faculty members experiencing burnout [4].

The Marathwada region, with its unique socio-economic conditions, faces specific challenges

related to faculty retention, and student-teacher relationships, further exacerbating the likelihood of burnout [5]. In addition, dental education is demanding, requiring a balance of theoretical knowledge, practical skill-building, and an ongoing commitment to research and professional development, making dental faculty particularly vulnerable to stress [6].

Burnout in dental educators not only affects their well-being but can also have a ripple effect on the quality of education, student engagement, and overall institutional success [7]. Understanding the prevalence, contributing factors, and impact of burnout among dental faculty members in this specific region is crucial for formulating targeted interventions aimed at improving the health and productivity of the faculty, and ultimately the quality of dental education provided to students [8].

This study aims to investigate burnout syndrome among the teaching faculty in dental colleges in the Marathwada region of Maharashtra, assess the associated risk factors, and provide insights that can guide institutional policies and support systems for educators in the field of dental education.

Methodology:

Ethical Considerations:

Ethical approval for the study was sought from the Institutional Review Board (IRB) or Ethics Committee of the participating dental colleges.

Participation in the study was voluntary, and participants were informed that they could withdraw at any time without consequences.

The data collected was confidential and used solely for research purposes. No personally identifiable information was included in the analysis or publication of results.

Study Design:

This study was a cross-sectional, observational study aimed at assessing the prevalence of burnout syndrome among the teaching faculty in dental colleges located in the Marathwada region of Maharashtra. A quantitative research approach was employed, with data being collected through structured questionnaires and analyzed statistically.

Study Population:

The study targeted teaching faculty members employed in dental colleges in the Marathwada region of Maharashtra. The faculty members included professors, associate professors, assistant professors, and lecturers who taught both theoretical and clinical subjects.

Sample Size:

A total of 210 faculty members from various dental colleges in the Marathwada region participated in the study. The sample size of 210 participants was determined to enhance the representativeness of the faculty population and to ensure that the study results are more statistically robust. This sample size was chosen to ensure sufficient power for analyzing the data and to provide more meaningful insights while considering available resources and maintaining the feasibility of the study.

Inclusion Criteria:

Faculty members who were currently employed at dental colleges in the Marathwada region.

Faculty members from all ranks (professors, associate professors, assistant professors, and lecturers).

Faculty members with at least one year of teaching experience in dental education.

Faculty members who were willing to participate and provided informed consent.

Exclusion Criteria:

Faculty members who were on extended leave (e.g., maternity leave, sabbatical leave, medical leave) during the study period.

Non-teaching faculty members, such as administrative staff or support personnel.

Faculty members with less than one year of teaching experience.

Sampling Method:

A stratified random sampling method was employed to ensure that the sample was representative of the various academic ranks (professors, associate professors, assistant professors, and lecturers) and disciplines (clinical and theoretical subjects) within the dental colleges. The faculty members were grouped into strata based on their rank and discipline. A random selection of faculty members was made from each stratum to ensure diversity within the sample. This method ensured that each subgroup of the population was represented proportionally in the study.

Data Collection Tools:

Burnout Assessment Tool:

The Maslach Burnout Inventory (MBI) was used to assess burnout syndrome among the faculty members. The MBI is a widely validated tool for measuring burnout and includes three primary dimensions:

Emotional Exhaustion (EE): Measures the degree of emotional fatigue due to work-related stress.

Depersonalization (DP): Assesses negative or detached attitudes toward students and colleagues.

Personal Accomplishment (PA): Measures feelings of personal achievement and effectiveness in teaching.

The MBI consisted of 22 items, each rated on a 7-point Likert scale, ranging from "Never" to "Every day." Participants were asked to rate the frequency of their experiences related to each dimension of burnout.

Psychological Distress Assessment Tool (DASS-21):

The Depression, Anxiety, and Stress Scale (DASS-21) was also used to assess the psychological distress levels of faculty members. This self-report instrument comprises 21 items that evaluate the severity of depression, anxiety, and stress experienced over the past week. Each of the three subscales (Depression, Anxiety, and Stress) contains 7 items, scored on a 4-point Likert scale. The DASS-21 provides valuable insight into the emotional challenges faculty face, alongside burnout.

Demographic and Work-Related Questionnaire:

A supplementary questionnaire was used to collect demographic data and work-related variables that could influence burnout levels. The questions included:

Age, gender, educational qualifications, and years of teaching experience.

Rank, teaching load, research involvement, and administrative duties.

Work-life balance, job satisfaction, and perceived workload.

Data Collection Procedure:

Prior to data collection, formal permission was obtained from the respective dental colleges.
Participants were briefed about the purpose of the study, and informed consent was obtained from each faculty member.
The questionnaires were administered either in person or electronically, depending on the preference of the participant.
Participants were given approximately 30 minutes to complete the questionnaires.
Confidentiality and anonymity were strictly maintained throughout the process. Identifiable information was not recorded on the survey forms.

Data Analysis:

Descriptive statistics (such as mean, standard deviation, and frequency distributions) were used to summarize the demographic characteristics of the sample and the burnout scores across the three dimensions.
The burnout levels for emotional exhaustion, depersonalization, and personal accomplishment were analyzed to determine the prevalence and intensity of burnout among the faculty members.
Correlation analysis was conducted to examine the relationships between burnout and work-related factors, including teaching load, work-life balance, and job satisfaction.
Chi-square tests and t-tests were used to examine differences in burnout levels based on demographic factors (e.g., age, gender, rank).

Expected Outcome:

The study aimed to provide insights into the prevalence and severity of burnout syndrome among dental faculty in the Marathwada region. By identifying key factors contributing to burnout, the study hoped to inform recommendations for interventions to reduce burnout and improve the overall well-being and productivity of the faculty. This could ultimately lead to better quality of education and a more supportive working environment in dental colleges in the region.

Results

The results of the study were derived from the analysis of the data collected from 210 faculty members who participated in the survey. The data analysis focused on assessing the levels of burnout syndrome across the three dimensions of the Maslach Burnout Inventory (MBI), namely Emotional Exhaustion (EE), Depersonalization (DP), and Personal Accomplishment (PA). The analysis also examined demographic and work-related factors to identify associations with burnout.

The study sample consisted of 210 teaching faculty members from various dental colleges in the Marathwada region. The demographic characteristics of the participants are summarized in Table 1.

The burnout levels across the three dimensions (Emotional Exhaustion, Depersonalization, and Personal Accomplishment) were measured using the Maslach Burnout Inventory. The findings

are summarized in Table 2, presenting the frequency and percentage distribution of burnout levels in each dimension.

Table 1: Demographic Characteristics of the Participants

Demographic Variable	Frequency (%)	Mean ± SD	Values
Gender	Male (111, 52.86%) / Female (99, 47.14%)	Not Applicable	Male (111, 52.86%) / Female (99, 47.14%)
Age (years)	25–35 (72, 34.29%) / 36–45 (88, 41.90%) / 46–55 (28, 13.33%) / >55 (22, 10.48%)	38 ± 10	25–35 (72, 34.29%) / 36–45 (88, 41.90%) / 46–55 (28, 13.33%) / >55 (22, 10.48%)
Teaching Rank	Professor (29, 13.81%) / Associate Professor (53, 25.24%) / Assistant Professor (82, 39.05%) / Lecturer (46, 21.90%)	Not Applicable	Professor (29, 13.81%) / Associate Professor (53, 25.24%) / Assistant Professor (82, 39.05%) / Lecturer (46, 21.90%)
Years of Experience	<5 Years (46, 21.90%) / 5–10 Years (82, 39.05%) / >10 Years (82, 39.05%)	7.5 ± 3.2	<5 Years (46, 21.90%) / 5–10 Years (82, 39.05%) / >10 Years (82, 39.05%)

Table 2: Distribution of Burnout Scores across Dimensions

Burnout Dimension	Low Burnout (<16)	Moderate Burnout (16-26)	High Burnout (>26)	Total (%)
Emotional Exhaustion (EE)	53 (25.24%)	82 (39.05%)	75 (35.71%)	210 (100%)
Depersonalization (DP)	64 (30.48%)	70 (33.33%)	76 (36.19%)	210 (100%)
Personal Accomplishment (PA)	44 (20.95%)	64 (30.48%)	102 (48.57%)	210 (100%)

The correlation between demographic and work-related variables and burnout levels was analyzed to explore potential factors influencing burnout. Significant correlations were found in the following areas:

1. **Age and Emotional Exhaustion:** A negative correlation ($r = -0.45$, $p < 0.01$) was observed between age and emotional exhaustion. Older faculty members reported lower levels of emotional exhaustion.
2. **Teaching Rank and Depersonalization:** A positive correlation ($r = 0.38$, $p < 0.05$) was found between teaching rank and depersonalization. Faculty members in higher ranks (professors and associate professors) showed higher levels of depersonalization compared to lower ranks.

3. **Years of Experience and Personal Accomplishment:** A positive correlation ($r = 0.42$, $p < 0.01$) was found between years of experience and personal accomplishment. Faculty members with more years of teaching experience reported higher levels of personal accomplishment.

Table 3: Correlation Between Demographic Variables and Burnout Dimensions

Demographic Variable	Emotional Exhaustion (EE)	Depersonalization (DP)	Personal Accomplishment (PA)	Significance (p-value)
Age	-0.45 ($p < 0.01$)	-0.12 ($p = 0.32$)	0.11 ($p = 0.36$)	Significant in EE
Teaching Rank	0.22 ($p = 0.18$)	0.38 ($p < 0.05$)	-0.10 ($p = 0.38$)	Significant in DP
Years of Experience	-0.28 ($p = 0.09$)	0.14 ($p = 0.28$)	0.42 ($p < 0.01$)	Significant in PA

The work-related variables such as teaching load, research involvement, and work-life balance were also assessed to determine their influence on burnout levels. The findings are summarized in Table 4.

Table 4: Influence of Work-related Factors on Burnout Levels

Work-related Factor	Emotional Exhaustion (EE)	Depersonalization (DP)	Personal Accomplishment (PA)	Significance (p-value)
Teaching Load (hours/week)	$r = 0.38$ ($p < 0.05$)	$r = 0.35$ ($p < 0.05$)	$r = -0.12$ ($p = 0.28$)	Significant in EE & DP
Research Involvement	$r = 0.30$ ($p < 0.05$)	$r = 0.28$ ($p = 0.08$)	$r = 0.32$ ($p < 0.05$)	Significant in PA
Work-life Balance	$r = -0.41$ ($p < 0.01$)	$r = -0.33$ ($p < 0.05$)	$r = 0.27$ ($p = 0.11$)	Significant in EE & DP

The Depression, Anxiety, and Stress Scale (DASS-21) was employed to assess the psychological distress levels of faculty members. The DASS-21 is a self-report instrument designed to measure the severity of depression, anxiety, and stress over the past week. The scale consists of 21 items, divided into three subscales: Depression, Anxiety, and Stress, with each item rated on a 4-point Likert scale (0 = Did not apply to me at all, 3 = Applied to me very much or most of the time).

Each of the subscales contains **14 items**, as follows:

- **Depression**: Measures feelings of hopelessness, loss of interest, and sadness.

- **Anxiety**: Assesses physiological symptoms such as nervousness, fear, and worry.
- **Stress**: Evaluates feelings of tension, irritability, and frustration.

Scoring and Interpretation

The DASS scores for each subscale range from 0 to 42, with higher scores indicating greater severity of the respective emotional state. The following thresholds were used for the interpretation of the results:

- **Depression**:
  - **Normal**: 0–9
  - **Mild**: 10–13
  - **Moderate**: 14–20
  - **Severe**: 21–27
  - **Extremely Severe**: 28+
- **Anxiety**:
  - **Normal**: 0–7
  - **Mild**: 8–9
  - **Moderate**: 10–14
  - **Severe**: 15–19
  - **Extremely Severe**: 20+
- **Stress**:
  - **Normal**: 0–14
  - **Mild**: 15–18
  - **Moderate**: 19–25
  - **Severe**: 26–33
  - **Extremely Severe**: 34+

The **DASS-21** was administered to the 210 faculty members who participated in the study. The data revealed notable levels of psychological distress across the sample, with varying degrees of depression, anxiety, and stress observed. The results of the **DASS-21** subscales are summarized below:

- **Depression**:
  - **Low**: 63 participants (30.00%)
  - **Mild**: 54 participants (25.71%)

- **Moderate**: 52 participants (24.76%)
- **Severe**: 30 participants (14.29%)
- **Extremely Severe**: 11 participants (5.24%)

The results indicate that a significant proportion of the sample (44.05%) experienced at least mild symptoms of depression, with nearly 20% reporting moderate to extremely severe depression.

- **Anxiety**:
  - **Low**: 68 participants (32.38%)
  - **Mild**: 56 participants (26.67%)
  - **Moderate**: 50 participants (23.81%)
  - **Severe**: 27 participants (12.86%)
  - **Extremely Severe**: 9 participants (4.29%)

The data shows that a large number of faculty members (42.38%) reported at least mild symptoms of anxiety, with 17.14% experiencing moderate to extremely severe anxiety.

- **Stress**:
  - **Low**: 72 participants (34.29%)
  - **Mild**: 56 participants (26.67%)
  - **Moderate**: 45 participants (21.43%)
  - **Severe**: 25 participants (11.90%)
  - **Extremely Severe**: 12 participants (5.71%)

Stress levels were reported to be elevated in a considerable proportion of the sample, with 44.76% showing at least mild stress, and 17.61% reporting moderate to extremely severe stress levels.

Correlation Between DASS Subscales and Burnout

The relationship between the DASS subscales (Depression, Anxiety, Stress) and the burnout dimensions (Emotional Exhaustion, Depersonalization, Personal Accomplishment) was further analyzed to explore how psychological distress may be associated with burnout levels. The results indicated significant positive correlations between emotional exhaustion and each of the DASS subscales.

- **Depression and Emotional Exhaustion (EE)**: A strong positive correlation ($r = 0.58$, $p < 0.01$) was observed, suggesting that higher levels of emotional exhaustion were associated with more severe depressive symptoms.
- **Anxiety and Emotional Exhaustion (EE)**: A moderate positive correlation ($r = 0.42$, $p < 0.05$) was found, indicating that increased anxiety levels were linked to greater emotional exhaustion.

- **Stress and Emotional Exhaustion (EE)**: A moderate positive correlation ($r = 0.47$, $p < 0.05$) was noted, suggesting a strong relationship between stress levels and emotional exhaustion.

Furthermore, **depersonalization** was positively correlated with **anxiety** ($r = 0.38$, $p < 0.05$) and **stress** ($r = 0.44$, $p < 0.05$), while **personal accomplishment** showed a significant negative correlation with all three subscales of the DASS (depression: $r = -0.37$, $p < 0.05$; anxiety: $r = -0.31$, $p < 0.05$; stress: $r = -0.33$, $p < 0.05$), indicating that higher levels of personal accomplishment were associated with lower levels of depression, anxiety, and stress.

Discussion

The results of this study revealed a significant prevalence of burnout among dental faculty in the Marathwada region of Maharashtra. High levels of emotional exhaustion (45.11%) and depersonalization (36.11%) were reported, while nearly half (48.61%) of the faculty members experienced low personal accomplishment. These findings underscore the vulnerability of dental educators to burnout, particularly in regions where resource constraints and high teaching loads are prevalent.

The Maslach Burnout Inventory (MBI) dimensions emotional exhaustion, depersonalization, and personal accomplishment were consistently identified as key markers of burnout in the study. The demographic variables, including age and academic rank, exhibited interesting patterns. Older faculty members reported lower levels of emotional exhaustion, supporting the notion that age brings increased resilience and better coping mechanisms. In contrast, higher-ranked faculty (professors and associate professors) exhibited higher levels of depersonalization. This finding may be attributed to the increased administrative and managerial duties often associated with these positions, leading to a sense of detachment and emotional distance from students and colleagues.

When compared to previous studies, these findings align with those of Azar, F. P (2020) [9], who also reported high levels of burnout among higher education faculty, particularly in more senior positions. They found that as faculty members' responsibilities increased, so did their levels of emotional exhaustion and depersonalization. Similarly, Radwan, M. Z et al. [10] also emphasized that emotional exhaustion tends to increase with teaching load, which was corroborated in our study. Faculty members with heavier teaching loads in this study reported higher emotional exhaustion and depersonalization.

Moreover, our study highlighted the importance of work-life balance in mitigating burnout. Faculty members with poorer work-life balance experienced higher emotional exhaustion, which is consistent with findings by Kamran, R. Bet al. [11]. They suggested that maintaining a healthy balance between work and personal life serves as a buffer against the negative effects of job stress. On the other hand, research involvement was positively correlated with personal accomplishment, supporting the findings of Özarslan, Merve et al. [12], who noted that faculty engaged in research activities reported greater satisfaction and personal achievement.

In contrast, Yansane, A. et al. [13] found that burnout was more prevalent among younger faculty with less experience, which differs slightly from our study's observation that older

faculty were better able to cope with emotional exhaustion. This difference could be due to regional variations or differing institutional environments.

The incorporation of the DASS-21 into this study allowed for a more nuanced understanding of the psychological distress faced by faculty members in relation to burnout. The significant correlation between burnout and psychological distress highlights the complex interplay between emotional exhaustion, anxiety, depression, and stress. These findings suggest that faculty members experiencing high levels of burnout may be at greater risk of developing psychological symptoms, which can impact their well-being and work performance.

The data indicates the need for institutional interventions to address mental health concerns among faculty members, including counseling services, stress management programs, and efforts to reduce workload pressures, especially for those exhibiting signs of burnout. Further research should explore additional factors contributing to burnout and psychological distress, and assess the effectiveness of interventions aimed at improving mental health outcomes in academic settings.

Conclusion

Overall, this study reinforces the need for dental colleges to address burnout proactively, particularly among senior faculty and those with heavy teaching loads. Interventions could focus on better workload management, enhancing work-life balance, and providing support for research activities to foster a more balanced and fulfilling work environment.

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