



Burnout in Orthodontists: A Comprehensive Review of Existing Literature

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ABSTRACT:

Background: Burnout is a concerning issue in the dental profession, and allied dental specialties, including orthodontics, which is particularly prevalent in developing countries, where dentists encounter significant stress due to the demanding nature of their work and interactions with anxious patients. This narrative review aims to explore burnout in orthodontics, investigating its causes, impact, and preventive measures.

Methodology: A comprehensive search was conducted in databases, including PubMed, Web of Science, Scopus, and Google Scholar, to identify relevant literature published in English from 1980 to 2023. Articles focused on burnout in medical and dental practices, with specific emphasis on Orthodontics, were subjected to analysis.

Results: The narrative review underscores the significant impact of burnout on orthodontic practitioners, negatively affecting their well-being, job satisfaction, and productivity. Contributing factors such as long working hours and administrative burden emphasize the importance of implementing preventive measures and support systems to mitigate the adverse effects of burnout.

Conclusion: Regular assessments, employee assistance programs, and peer support networks are crucial. Recommended treatment options include counselling, cognitive-behavioural therapy, and mindfulness interventions. Continued research is needed to understand burnout's impact in orthodontic practice. Collaboration among professional organizations and healthcare providers will foster a healthier work environment, ensuring the well-being and effectiveness of orthodontic practitioners.



Introduction

Burnout is a significant issue in the dental profession, especially in developing countries. Dentists experience high levels of stress due to the demanding nature of their work, long working hours, and dealing with anxious patients. This emotional, mental, and physical exhaustion negatively impacts their well-being, job satisfaction, and productivity. Burnout also poses risks to dentists' mental health, potentially leading to conditions like anxiety and depression [1]. Furthermore, it can compromise the quality of patient care, affecting the reputation of dental practises and patient outcomes. Recognising burnout as a public health concern is essential to addressing its implications for dentists and patients alike. Implementing support systems, promoting work-life balance, and providing access to mental health resources can help mitigate burnout's negative effects [2,3]. Increased research and awareness are crucial to developing effective strategies for preventing and managing burnout among dentists, leading to a healthier work environment in the dental profession [1].

Most orthodontic studies primarily focus on enhancing practitioners' understanding of orthodontics and treatment planning. However, it is now essential to shift attention to the mindset of orthodontic postgraduates. The question arises: *How resilient are today's orthodontists? Can they effectively handle the stresses and pressures of patient care, or are they experiencing emotional exhaustion, depersonalization, and burnout?* Stress is defined as the biological response to adverse internal or external stimuli that disrupt the organism's equilibrium [4]. It can either motivate students to excel or render them ineffective. In dental practise, unchecked stress can lead to mental anguish and depression. Different stressors have been identified across various regions, such as fear of parents in India, financial situations in Western countries, and resource constraints in developing countries in Africa [5]. Occupational stress among dentists has been a prominent subject of research in recent years. Burnout, on the other hand, is a distinct psychological condition that differs from

occupational stress. It requires sustained pressure on an individual, leading to emotional, physical, and mental exhaustion due to work conditions. Understanding the levels of stress and burnout among orthodontic postgraduates is crucial for supporting their well-being and ensuring quality patient care [6].

Concept Of Burnout

The term "burnout" was first coined by Freudenberger in the 1970s, based on his observations of volunteers working for aid organizations in New York who experienced emotional depletion and loss of motivation. He defined burnout as a state of mental and physical exhaustion caused by one's professional life, leading to a decline in motivation and dedication to work. During the same period, Maslach and colleagues interviewed human-services workers in California, who also used the term "burnout." They described experiencing exhaustion, negative attitudes towards clients, and a sense of lacking professional competence. Maslach and Jackson further defined burnout as a syndrome characterised by emotional exhaustion, depersonalization (a negative or detached response towards others), and reduced personal accomplishment (feelings of declining competence and achievement). Originally thought to be specific to the human services sector, research revealed that burnout can affect workers in various occupations. Scholars have adapted the concept of burnout to apply it to different professions. For example, the Maslach Burnout Inventory-General Survey replaced depersonalization with cynicism and reduced personal accomplishment with reduced professional efficacy. History and Concept of Burnout (Table 1) Other researchers have developed alternative measures to assess burnout, such as the Oldenburg Burnout Inventory, which assesses exhaustion and disengagement, and the Shirom-Melamed Burnout Measure, which assesses physical fatigue and cognitive weariness. These measures help identify and understand burnout in various work settings beyond the human services sector [6].

**Table 1: History and Concept of Burnout [7]**

Burnout Origins	Coined by Freudenberger in the 1970s based on observations of volunteers in aid organizations Maslach and colleagues also used the term "burnout" while studying human-services workers. Burnout is a state of mental and physical exhaustion caused by one's professional life[8].
Burnout Components	Emotional exhaustion: Feeling emotionally drained due to contact with others. Negative or detached response towards recipients of one's service or care. A decline in feelings of competence and achievement at work. Later adaptations replaced depersonalization with cynicism and reduced personal accomplishment with reduced professional efficacy[8].
Burnout Universality	Originally associated with human-services sector but found applicable to various occupations.
Burnout Measures	Maslach Burnout Inventory–General Survey (MBI-GS): Assesses exhaustion, disengagement, and reduced efficacy[8,9]. Oldenburg Burnout Inventory: Measures exhaustion and disengagement [10]. Shirom-Melamed Burnout Measure: Assesses physical fatigue and cognitive weariness[7].

Methodology

Search terms including “Burnout,” “ORTHODONTISTS,” “healthcare workers,” “medical staff,” “dentist” and “dental practitioners” were searched in PubMed, Web of Science, Scopus, and Google Scholar databases in English literatures published from the beginning of 1980 to till 2023. Fundamental studies on burnout in medical and dental practices especially pertaining to the field of Orthodontics were examined, and the entire relevant literature was included. Eventually, the narrative technique was applied based on Maclure’s[13] description of how a researcher engages with the material, comprising reading, writing, thinking, interpreting, arguing, and justifying. Finally, the critical topics in this realm were discussed as follows.

Results And Review Of Literature

Definition

Burnout is a pathological syndrome caused by prolonged occupational stress, leading to emotional exhaustion and maladaptive detachment. Initially identified through occupational psychology research, it mainly affected human service workers [11,12,13]. Researchers characterized burnout as a psychological construct through qualitative surveys, field observations, interviews, and confirmatory factor analysis, establishing its construct, discriminant, and convergent validity [14,15]. This syndrome commonly occurs among individuals engaged in "people-work," resulting in increased emotional exhaustion and negative, cynical attitudes towards clients. These aspects of burnout often intertwine, leading to a callous perception of others, particularly clients, as deserving of their troubles. Workers also tend to evaluate themselves



negatively concerning their work with clients, feeling dissatisfied with their accomplishments. Burnout among dentists can lead to avoidance of social interactions with colleagues, patients, friends, and even family members. The prolonged experience of burnout may also result in depression, posing a serious risk to the dental profession by threatening the available workforce and causing personal tragedy for individuals. In India, there is a lack of information on burnout, and only a few studies have been conducted. One study focused on stress and burnout among postgraduate students in a university, revealing that 21% of the total subjects experienced burnout. Another study explored burnout among dental faculty and students, showing that third-year, final-year, and postgraduate students experienced higher levels of burnout compared to others. The limited research on burnout in the Indian dental community highlights the need for further investigation and attention to this important issue [16].

According to Maslach et al., burnout has three dimensions: emotional exhaustion, depersonalization and cynicism, and feelings of inefficacy. These dimensions can coexist in varying degrees, making burnout a continuous and heterogeneous construct rather than a dichotomous one. The Maslach Burnout Inventory (MBI), a widely used 22-item questionnaire with 7-point Likert scales, measures all three burnout dimensions. It is commonly employed in the medical literature and has become the gold standard for identifying clinically significant burnout. The significance of burnout in various professions, including medical practice, has led to its widespread study using the MBI, highlighting the importance of identifying and addressing burnout for professionals' well-being and quality of service [8,16].

Incidence and Prevalence of Burnout in Orthodontics

Burnout's association with the dental profession emerged in the 1980s, with several studies examining dentist burnout, particularly in Europe [17,18]. These studies found that a portion of British dentists and Colombian dental students

were at risk for burnout, and there was a correlation between work environments, fatigue, and burnout among Finnish dentists. Similarly, approximately 1 out of 5 Dutch dentists were found to be at risk for burnout, leading to explorations of interventions in Holland [3,19]. Regional studies in the United States also investigated burnout among dentists and dental students [20]. One study in Texas showed low scores on personal accomplishment among dentists but not an overall high level of burnout [22]. The Michigan and Oklahoma Dental Associations have discussed burnout in dentistry but have not provided specific prevalence estimates. A systematic review in the US dental education context highlighted a possible correlation between stress levels in dental students and burnout risk. In the orthodontic field, burnout is a pervasive concern with varying prevalence rates. Studies reported an 83.6% burnout prevalence among Australian orthodontists and 16.2% among orthodontists in the United States [20]. These findings align with elevated burnout rates observed in other healthcare professions [21]. The high prevalence of burnout among orthodontists emphasizes the importance of understanding its root causes and implementing targeted interventions. Overall, burnout is a significant issue in both dentistry and orthodontics, necessitating attention and measures to safeguard the well-being of dental professionals and enhance patient care.

Numerous studies have reported a high prevalence of burnout among dentists. Studies reporting the prevalence of Burnout (Table 2). The demanding nature of the occupation and close proximity to patients contribute to interpersonal stressors, leading to burnout. Work-related stress and long working hours negatively impact dentists' psychological well-being and family life. Peterson U et al. (2008) [23] found an association between burnout and various issues, including depression, anxiety, alcohol consumption, sleep problems, and musculoskeletal complaints among service workers, including dentists. Addressing burnout is crucial to improve dentists' well-being and the quality of patient care [24].

**Table 2: Studies reporting the prevalence of Burnout**

Author (Year)	Place of the study	Participants	Burnout prevalence	Study findings
Demerouti et al[10]	Netherlands	Employees	Varies	The Job Demands-Resources model of burnout was proposed to explain burnout based on job demands and resources. The model has been applied to assess burnout in various occupational settings[15].
Humphris et al[25]	Europe	Dental students	36% psychological distress 22% emotional exhaustion	The study assessed stress in undergraduate dental students from seven European countries. Dental students reported a burnout prevalence of 36%. [5]
Thomas[16]	USA	Medical residents	55.6%	The study focused on burnout in medical residents and found a prevalence of 55.6%. Long working hours and high workload were significant contributors to burnout[7].
Shapiro et al. (2005)[26]	Not specified	Health care professionals	Not specified	Significant reductions in perceived stress, anxiety, and symptoms of burnout among healthcare professionals. Improvements in overall well-being and self-compassion. Mindfulness-based stress reduction (MBSR) intervention equipped participants with effective coping strategies for managing challenges in their work. Potential value of MBSR in promoting resilience and well-being in healthcare professionals.
Soler et al.[27]	Europe	Medical practitioners	24.8%	The study assessed burnout in family doctors across Europe, reporting a prevalence of 24.8%. High work demands and lack of autonomy were associated with burnout.
Schaufeliet al[28]	Netherlands	Employees	Varies	The study proposed the Maslach Burnout Inventory to measure burnout across various professions, including



				healthcare. Burnout rates differed among occupations.
Epstein et al[29]	USA	Physicians	44.3%	The study explored burnout in physicians, with a prevalence of 44.3%. Lack of control over work and work-life imbalance were associated with burnout.
Mache et al[30]	Germany	Health care professionals	29.8%	The study examined burnout in healthcare professionals, including dentists. Orthodontists reported a burnout prevalence of 29.8%.
West et al.[31]	Minnesota	Physicians	54.1%	An intervention for physicians utilizing a facilitated small-group curriculum improved meaning and engagement in work and reduced depersonalization, with sustained results at 12 months after the study. The study's findings highlight the potential benefits of targeted interventions in addressing burnout and improving the well-being and job satisfaction of physicians.
Dyrbye et al.[32]	USA	Medical students and residents	45.2%	The study investigated burnout in medical students, reporting a prevalence of 45.2%. The demands of medical education and training were linked to burnout.
Shanafelt et al[33]	USA	Physicians	Varies	The longitudinal study examined burnout trends in physicians over three years. Burnout rates increased significantly during the study period.
Maslach et al[9]	USA	Employees	Varies	The study developed the Maslach Burnout Inventory to assess burnout across occupations. The inventory has



				been widely used to measure burnout in various professions, including healthcare.
Dewa et al[34]	Canada	Healthcare professionals	Varies	The systematic literature review assessed the relationship between burnout and the quality of healthcare. The study found mixed results concerning the impact of burnout on patient care.

Table 3: Summary of various studies on Burnout among the medical and dental professionals

Author & year of study	Study model/design	Place of study	Study participants	Chief findings of the study	Outcome of the study
Garbee et al [35]	Not specified	Not specified	Dental students	Academic workload and clinical experiences as stressors	Dental students perceive academic workload and clinical experiences as stressors
Moore and Brodsgaard[36]	Not specified	Not specified	Dentists	Dentists' stress related to perceptions of anxious patients	Dentists' stress is influenced by perceptions of anxious patients
Naidu et al[37]	Not specified	West Indies	Dental students in the West Indies	Stress related to academic workload and personal issues	Dental students in the West Indies experience stress from academic workload and personal issues
Polychronopoulou and Divaris[38]	Not specified	Greece	Greek dental students	Academic and clinical sources contribute to stress	Greek dental students face stress from academic and clinical sources
Puriene et al [39]	Not specified	Lithuania	Lithuanian dentists	Positive mental health and job satisfaction related	Lithuanian dentists experience positive mental health and job satisfaction
Puriene et al [40]	Not specified	Lithuania	Dental personnel and patients	Stressful relationship between dental personnel and	The relationship between dental personnel and patients can be



				patients	stressful
Dentonet al [41]	Not specified	United Kingdom	Dentists	High levels of burnout and low work engagement	Dentists in the UK experience high burnout and low work engagement
Muirhead et al [42]	Not specified	Canada	Canadian dental students	Stress and lack of social support among Canadian students	Canadian dental students experience stress and lack of social support
Alzahem et al [43]	Systematic Review	Not specified	Dental students	Stress levels among dental students	Stress is prevalent among dental students
Elani et al [44]	Systematic Review	Not specified	Dental students	Stress levels among dental students	Stress is a significant issue among dental students
Chainani et al [45]	Not specified	India	Dental professionals in Mysore	Working conditions and personal factors predict burnout	Burnout in dental professionals in Mysore is influenced by working conditions and personal factors
Vasconi et al [46]	Not specified	Not specified	Orthodontists	Work-related cardiovascular stress in orthodontists	Orthodontists experience work-related cardiovascular stress
Chacko et al [47]	Not specified	India	Orthodontic PG students	High stress levels among orthodontic PG students	Orthodontic PG students in India face high stress levels
Lacyet al [48]	Not specified	Not specified	Physicians	High prevalence of burnout among physicians	Physician burnout is a critical healthcare issue
Nettam et al [6]	Not specified	India	Postgraduate and undergraduate students	Stress and burnout differ among postgraduate and undergraduate students	Stress and burnout levels differ between postgraduate and undergraduate orthodontic



					students in India
Meyerson et al [49]	Not specified	Israel	Israeli dentists	High burnout and lower quality of life in dentists	Israeli dentists experience high burnout and lower quality of life
Khanagar et al [50]	Systematic Review	Saudi Arabia	Undergraduate dental students	Psychological distress prevalent among dental students	Dental students in Saudi Arabia experience psychological distress
Al-Rawi et al [51]	Not specified	UAE	Dental students	Prevalence of burnout during COVID-19 lockdown	Dental students in UAE experience burnout during the COVID-19 lockdown
Antoniadou [52]	Not specified	Greece	Greek dentists	Factors affecting burnout in Greek dentists	Factors contributing to burnout among Greek dentists before and during the pandemic

Signs and symptoms

Professional burnout is a gradual erosion of a person and reduced personal accomplishment. This is seen in professionals who must encounter people for most of the time as a professional job. With the fast-evolving knowledge and resulting competition dentistry has become one of the stressful professions. Dental and orthodontic speciality work is characterized by isolated conditions and a strong reliance on technical skills, also less quality time with family and friends, lack of time for exercise and food etc; resulting into stressful life [53]. Summary of various studies on Burnout among the medical and dental professionals (Table 3).

The World Health Organisation (WHO) has officially recognized burnout syndrome as a disease after the approval of the eleventh revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-11)

which was approved in 2022. Burnout syndrome has significant adverse effects on organizations, clinics, and companies [54]. It leads to substandard patient service, increased absenteeism, clinical errors, and financial losses. Moreover, individuals experiencing burnout may suffer consequences akin to symptoms of depression, and in severe cases, it could even lead to suicide. According to the process model, burnout syndrome is not an abrupt occurrence but rather develops gradually, progressing through three dimensions of experienced feelings, ranging from low to moderate and high levels of severity [55].

Burnout syndrome is a multidimensional construct, encompassing these three phases, and it has been associated with high levels of burnout in the dental profession. Phases of Burnout (Table 4). They can be enumerated as under: -

**Table 4:- Phases of Burnout [3,19,49,56,57,58,59]**

Phases	Characteristics
Phase 1:-Emotional Exhaustion (EE)	Loss of energy, Psychological and physical exhaustion, Constant fatigue, Feelings of lacking strength, Overwhelmed in terms of emotional resources
Phase 2:-Depersonalisation (DP)	Irritability, Cynicism, Bad moods, Rejection of or negative feelings towards recipients of one's work, Emotional distancing, Lack of empathy, Defensive construct to protect from feelings of frustration
Phase 3:-Low Personal Accomplishment (PA)	Low self-esteem, Poor performance at work, consistently bad attitude, Negative self-perception, Feelings of failure, Avoidance of social relationships, Depression, Limited ability to solve work and personal problems

Dhillon et al. enumerated the signs and symptoms of burnout amongst the dentists as: depression, lack of energy, lack of desire, decreased productivity, increased absence and/or tardiness, abuse of

alcohol/drugs, boredom, and anger/resentment in the workplace, sleep problems and inability to relax[60]. Early warning signs and symptoms of occupational burnout (Table 5)

Table 5:- Early warning signs and symptoms of occupational burnout [61]

Stages	Signs and symptoms
Physical	Feeling constantly tired Experiencing frequent headaches or muscle pain Noticing a weakened immune system Experiencing changes in sleep patterns and appetite
Emotional	Having a sense of failure and self-doubt Feeling helpless and losing motivation Experiencing reduced satisfaction and inefficacy Feeling emotionally detached and isolated
Behavioural	Withdrawing from social interactions and responsibilities Engaging in alcohol or drug abuse Frequently skipping work or leaving early Displaying frustration and irritability towards others

Factors inducing Burnout and its impact on Dentists/Orthodontists

Dentistry is a very demanding profession that requires continuous hard work and dedication hence the reasons for developing burnout are numerous. If we start with the struggles that a newly graduated dentist in India faces, then the

first one would be meagre job availabilities rather it would be true to state nil job opportunities. Only 1% of the total GDP is allocated for public health care moreover, there is no specific separate allocation for oral health-care. There are only 11,000 sanctioned Government jobs for dentists in India [60]. The various stress inducing factors and



its impact on the orthodontists are enumerated as under (Table 6):-

Table 6: Stress inducing factors in Burnout and its impact on Dentists/Orthodontists

Authors and the year of study	Stressors	Impact of Burnout in Dentistry or Orthodontics practice
Maslach et al[62]	Workload	High patient load and time pressure leading to exhaustion, a common stress dimension of burnout.
	Lack of sufficient control	Insufficient control over resources for effective service provision, particularly in community-based dentistry.
	Lack of recognition and appropriate reward	Dentists' skills and quality of workmanship may go unnoticed or unappreciated by patients, leading to feelings of inefficacy and burnout.
	Lack of social support	Social support from colleagues and peers can act as a buffer against job stress and burnout.
Felton et al[63]	Quality of working life	Problems related to the physical environment, such as poor working posture, can significantly contribute to burnout.
Ayatollahi et al.[64]	Occupational hazards	Dentists may face exposure to infectious diseases (e.g., HIV, TB, HBV), ocular problems, eye injuries, latex allergy, and musculoskeletal pain, all of which can contribute to burnout.

Causes and consequences of Burnout in Orthodontists/Dentists

Maslach et al[9] and Shanafelt et al[65] concluded from their researches that burnout among orthodontists and dentists can be attributed to a combination of factors inherent to their profession. The demanding nature of patient care, high workload, and lack of control over resources can contribute to emotional exhaustion, one of the key dimensions of burnout. Additionally, the lack of recognition and reward for their expertise and efforts may lead to feelings of inefficacy and contribute to burnout [66] According to Dyrbeet al[32] and Shanafelt et al[33], Burnout in orthodontists and dentists can have significant consequences, both on a personal and professional level. It can result in decreased job satisfaction, reduced quality of patient care, and increased risk

of clinical errors. Furthermore, burnout can negatively impact their physical and mental health, leading to increased levels of depression, anxiety, and alcohol consumption as was proposed by Shanafelt et al[67] and West et al[68] These consequences not only affect the individual's well-being but can also have implications for the overall dental healthcare system. Addressing the root causes of burnout and implementing interventions to promote work-life balance and support the well-being of orthodontists and dentists are essential to mitigate burnout and ensure the delivery of high-quality patient care.

Severity and risk assessment for Burnout in Orthodontists/Dentists

Burnout among dentists is a significant concern that requires careful severity and risk



assessment. Several studies have emphasized the importance of evaluating the severity of burnout to identify its impact on dentists' well-being and job performance [56]. Risk assessment is crucial to identify dentists who may be more vulnerable to burnout and implement appropriate interventions [68]. Factors such as heavy workload, lack of control over resources, and inadequate social support have been associated with higher burnout risk among dentists. Understanding the severity and risk of burnout can aid in developing targeted strategies to mitigate its adverse effects on dental professionals and enhance the overall well-being of the dental workforce [3,69].

Prevention, care and treatment of burnout cases

a. Prevention: -[16,34,68,69]

Promote work-life balance: Encouraging orthodontists to maintain a healthy balance between work and personal life can help reduce stress and prevent burnout.

Create a supportive work environment: Fostering a positive and supportive workplace culture can provide a buffer against burnout and enhance job satisfaction.

Provide resources for stress management: Offering resources such as stress management workshops and counselling services can help individuals develop effective coping mechanisms.

Encourage open communication: Facilitating open and honest communication between orthodontists and their colleagues can create a sense of community and support.

b. Care: - [10,33,70]

Regular assessment: Regularly assessing the well-being and stress levels of orthodontic professionals can help identify signs of burnout early and provide appropriate support.

Employee assistance programs: Implementing employee assistance programs can offer confidential counselling and support for orthodontists facing burnout.

Peer support networks: Establishing peer support networks within orthodontic practices can provide a valuable platform for sharing experiences and coping strategies.

c. Treatment: -[16,30]

Individual counselling and therapy: Providing individual counselling and therapy sessions can help orthodontists address the underlying causes of burnout and develop personalized coping strategies.

Cognitive-behavioural therapy: Cognitive-behavioural therapy has shown efficacy in managing burnout by helping individuals reframe negative thoughts and behaviours.

Mindfulness-based interventions: Mindfulness practices have demonstrated positive effects in reducing burnout symptoms and enhancing well-being.

Burnout is considered to be a major concern in the field of orthodontics since it can have a negative impact on the well-being and professional performance of orthodontic practitioners. This narrative review drew on a variety of evidence-based literature from PubMed-indexed articles to highlight the causes, signs and symptoms, and preventive measures for burnout in orthodontics. Long working hours, administrative stress, and a lack of influence over work decisions were highlighted as potential drivers to burnout in orthodontics. Further research into the impact of technology breakthroughs, shifting treatment modalities, and changing patient demographics on burnout prevalence is required for future views on burnout in orthodontics. Developing personalised therapies and techniques to combat burnout among orthodontic professionals will also be critical in guaranteeing the long-term well-being and efficacy of orthodontic practise. Collaboration between professional bodies, academic institutions, and healthcare providers is critical to effectively combating burnout in the field of orthodontics.

Conclusion

To summarise, among the indications and symptoms found were emotional weariness, decreased job satisfaction, and worse patient-provider communication. Preventive approaches included fostering work-life balance, supportive work environments, and stress management techniques. Regular assessments, employee assistance programmes, and peer support networks were advised as part of a holistic care approach to effectively treat burnout. Individual counselling, cognitive behavioural therapy, and mindfulness-



based therapies were among the treatment possibilities.

Conflict Of Interest

The authors declare no conflicts of interest.

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