Occupational burnout among Bulgarian dentists: prevalence and associated factors

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Професионално прегаряне сред българските зъболекари – разпространение и свързани фактори

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Abstract:

Background: Burnout is recognized as an important occupational health issue among dental professionals because of its negative impact on psychological well-being, professional performance, and the quality of patient care. Despite growing international evidence, data on burnout among dentists in Bulgaria remain limited. **Aim:** The aim of this study was to assess the prevalence of burnout among Bulgarian dentists and to examine its association with selected demographic and professional characteristics. **Materials and methods:** A cross-sectional online survey was conducted among dentists in Bulgaria over a one-month period. Participation was voluntary and anonymous, and electronic informed consent was obtained from all respondents. Invitations were distributed using national lists of registered dentists, followed by a reminder two weeks later. The questionnaire included demographic and professional characteristics, together with the Maslach Burnout Inventory. Overall burnout was classified according to the number of burnout dimensions reaching a high level. Descriptive statistics, Pearson's chi-square test, Fisher's exact test, and the Kruskal–Wallis test were used for data analysis. **Results:** A total of 487 dentists completed the survey. Overall, 51.5% of participants did not exhibit a high level in any burnout dimension, whereas 25.5% demonstrated low overall burnout, 9.4% moderate overall burnout, and 13.6% – high overall burnout. No statistically significant associations were found between overall burnout and sex, age, years of professional experience, or primary workplace. In contrast, marital status and professional status within the dental practice were significantly associated with overall burnout. **Conclusions:** Burnout represents an important occupational health concern among Bulgarian dentists. The findings suggest that personal and professional circumstances may influence burnout more strongly than demographic characteristics. Early identification of burnout and the implementation of targeted preventive measures may contribute to improving dentists' well-being and supporting a sustainable dental workforce.

Key words: burnout, dentists, occupational burnout, mental health, Maslach Burnout Inventory

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Резюме:

Въведение: Професионалното прегаряне е значим проблем за психичното здраве на лекарите по дентална медицина, тъй като оказва неблагоприятно влияние върху тяхното благополучие, професионално представяне и качеството на предоставяните дентални грижи. Въпреки нарастващия интерес към проблема в международен план данните за разпространението на синдрома на професионално прегаряне сред българските лекари по дентална медицина са ограничени. **Цел:** Да се оцени разпространението на професионалното прегаряне сред лекарите по дентална медицина в България и да се анализира връзката му с избрани демографски и професионални характеристики. **Материал и методи:** Проведено е кроссекционно онлайн анкетно проучване сред лекари по дентална медицина в България. Участието е доброволно и анонимно, като

всички респонденти са предоставили информирано съгласие. Поканите за участие са изпратени чрез национални списъци на лекари по дентална медицина, последвани от напомняща покана две седмици по-късно. Въпросникът включва демографски и професионални характеристики, както и въпросника на Maslach за оценка на професионалното прегаряне. Общото ниво на прегаряне е определено въз основа на броя на измеренията с високи стойности. За статистическата обработка са използвани описателна статистика, χ^2-критерий на Pearson, точният тест на Fisher и тестът на Kruskal–Wallis. **Резултати:** В проучването са включени 487 лекари по дентална медицина. При 51,5% от участниците не е установено високо ниво на нито едно от измеренията на професионалното прегаряне, 25,5% са с ниско общо ниво на прегаряне, 9,4% – със средно, а 13,6% – с високо общо ниво. Не се установява статистически значима връзка между нивото на професионално прегаряне и пола, възрастта, трудовия стаж или мястото на работа. За сметка на това семейното положение и професионалният статус в денталната практика са статистически значимо свързани с общото ниво на професионално прегаряне. **Заключение:** Професионалното прегаряне представлява съществен проблем сред българските лекари по дентална медицина. Получените резултати показват, че личните и професионалните характеристики могат да окажат влияние върху риска от развитие на професионално прегаряне. Ранното разпознаване на синдрома и прилагането на целенасочени превантивни мерки биха могли да подобрят психичното благополучие на лекарите по дентална медицина и да подпомогнат устойчивото развитие на денталната професия.

Ключови думи: професионално прегаряне; лекари по дентална медицина; психично здраве; въпросник на Maslach

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Introduction

Burnout is increasingly recognized as an important occupational health issue among healthcare professionals because of its adverse effects on individual well-being, workforce sustainability, and the quality of patient care. Dentistry is widely regarded as one of the most stressful healthcare professions, associated with particularly high levels of occupational stress due to the combination of demanding technical procedures, continuous patient interaction, and consistently high expectations for successful clinical outcomes. Evidence suggests that dentists experience burnout at rates comparable with, or even exceeding, those reported in other healthcare professions, highlighting the need for continuous monitoring and effective preventive strategies [1, 2].

The concept of burnout was first introduced by Freudenberger in 1974 to describe a state of progressive emotional and physical exhaustion, reduced motivation, anxiety, depressive symptoms, and increasingly negative attitudes towards patients, resulting from prolonged occupational stress. Subsequently, Maslach and Jackson conceptualized burnout as a multidimensional syndrome comprising three core components: emotional exhaustion, depersonalization, and reduced personal accomplishment. Emotional exhaustion reflects the depletion of emotional and physical resources, depersonalization refers to the development of detached, cynical, or impersonal attitudes towards patients, while reduced personal accomplishment is characterized by feelings of professional inefficacy, incompetence, and diminished achievement. This three-dimensional model remains one of the most widely used theoretical frameworks for understanding burnout in healthcare professionals [3-5].

The growing importance of burnout has been recognized internationally. The World Health Organization (WHO) defines burnout, according to the International Classification of Diseases (ICD-11), as a syndrome resulting from chronic workplace stress that has not been successfully managed. It is characterized by feelings of energy depletion or exhaustion, increased mental distance from one's work or negative attitudes towards work, and reduced professional effectiveness. Importantly, burnout is regarded as an occupational phenomenon specifically related to the work environment, rather than a disorder arising from other aspects of life [6, 7].

Burnout has important consequences not only for affected individuals, but also for healthcare organizations and patients. Prolonged occupational stress has been associated with reduced work performance, ab-

senteeism, increased intentions to leave the profession, decreased productivity, clinical errors, financial losses, and deterioration in the quality of healthcare delivery. At the individual level, burnout may manifest through persistent fatigue, emotional exhaustion, reduced motivation, impaired interpersonal relationships, and withdrawal from both professional and personal activities. These consequences collectively threaten the sustainability of healthcare systems by reducing the capacity to retain an experienced and productive workforce [6-8].

Dentistry represents a particularly demanding professional environment in which multiple occupational stressors interact simultaneously. Besides the responsibility associated with providing safe and effective patient care, dentists routinely perform technically complex procedures requiring prolonged concentration, precise fine motor coordination, and sustained static postures. Clinical work is further complicated by strict appointment schedules, patient anxiety, high expectations regarding both functional and aesthetic treatment outcomes, and the necessity to establish trusting relationships with patients while maintaining efficient communication. Additional pressures may arise from managing private practice, supervising auxiliary staff, ensuring financial sustainability, and adapting to changing healthcare environments. Together, these professional, organizational, physical, and psychological demands substantially increase the risk of burnout among dental practitioners [9-13].

The development of burnout is influenced not only by workplace conditions, but also by individual characteristics. Current evidence suggests that personal resources, coping abilities, and personality traits may either increase resilience, or enhance vulnerability to chronic occupational stress. Emotional stability and extraversion have been associated with lower levels of emotional exhaustion and depersonalization and with greater professional accomplishment, whereas maladaptive personality characteristics may predispose individuals to more severe manifestations of burnout. Consequently, burnout is now considered a multifactorial phenomenon resulting from the interaction between organizational stressors and individual psychological characteristics, rather than from workplace demands alone [6, 14-16].

An additional challenge concerns the close relationship between burnout and depression. Although emotional exhaustion has consistently been associated with depressive symptoms, the distinction between these two conditions remains controversial. Some studies suggest substantial overlap, whereas others emphasize that burnout should be regarded as a distinct work-related phenomenon because its symptoms are directly linked to occupational circumstances, rather than representing a generalized psychiatric disorder. Clarifying this distinction is clinically important because inappropriate interpretation of burnout symptoms may result in inaccurate diagnosis and suboptimal management of affected professionals [14, 15, 17].

Beyond its effects on the mental health of clinicians, burnout has important implications for patient safety. Growing evidence indicates that healthcare professionals experiencing burnout are more likely to report medical errors, impaired professional performance, and reduced quality of care. In dentistry, where diagnostic decisions, treatment planning, technically demanding procedures, and effective communication are essential for successful outcomes, emotional exhaustion and cognitive overload may further increase vulnerability to clinical errors. Moreover, involvement in adverse events may itself contribute to subsequent emotional exhaustion and depersonalization, creating a self-perpetuating cycle that negatively affects both practitioners and patients [18-21].

The importance of maintaining the psychological well-being of dental professionals has become even more evident in recent years. Studies conducted during and following the COVID-19 pandemic consistently reported worsening mental health among members of dental teams, including increased levels of stress, anxiety, emotional exhaustion, and depressive symptoms. These findings have raised serious concerns regarding the long-term sustainability of the dental workforce, emphasizing that strategies aimed at increasing the number of dental professionals must be accompanied by measures that improve occupational well-being and staff retention [22, 23].

Although burnout among dentists has received increasing international attention, reported prevalence estimates and associated risk factors vary considerably across countries, reflecting differences in healthcare systems, working conditions, organizational environments, and methodological approaches. Consequently, national evidence remains essential for understanding the magnitude of the problem within specific professional and healthcare contexts.

In Bulgaria, professional burnout among dentists has also been investigated. Panov reported on professional burnout among dental professionals in Bulgaria, highlighting the relevance of this occupational health problem within the dental profession [24]. However, limited evidence is available regarding the prevalence of burnout and its association with demographic and professional characteristics among

Bulgarian dentists. This gap in the available evidence underscores the need for further investigation of burnout within the Bulgarian dental workforce.

Therefore, the present study aimed to investigate the prevalence of occupational burnout among Bulgarian dentists and to examine its association with selected demographic and professional characteristics. The findings may contribute to a better understanding of the factors associated with burnout and provide evidence to support the development of targeted interventions aimed at promoting occupational well-being and the long-term sustainability of the Bulgarian dental workforce.

Materials and methods

Study design and participants

A cross-sectional, questionnaire-based study was conducted among dentists practicing in Bulgaria. Data were collected through an anonymous online survey administered over a one-month period. The study employed a voluntary response sampling approach, whereby eligible participants self-selected to participate after receiving an electronic invitation to complete the questionnaire.

Invitations were distributed electronically using contact information obtained from publicly available professional registers and mailing lists of dentists, including the publicly accessible register of the Bulgarian Dental Association (BDA) and regional dental associations. To improve participation, a reminder invitation was sent two weeks after the initial invitation. The survey remained open for a total of one month.

Participation in the study was entirely voluntary. Before accessing the questionnaire, participants were presented with an information page describing the study objectives, eligibility criteria, confidentiality procedures, and the voluntary nature of participation. Respondents provided electronic informed consent before proceeding to the questionnaire. No personally identifiable information was collected, ensuring complete anonymity of all responses.

A total of 487 completed questionnaires were returned and included in the final statistical analysis. Only fully completed questionnaires were considered eligible for inclusion.

Survey instrument

The online questionnaire consisted of two sections. The first collected demographic and professional information, including sex, age, years of professional experience, marital status, primary workplace (individual practice, group practice, or both), and professional status within the dental practice (practice owner, practice co-owner, or employee).

The second section comprised the Maslach Burnout Inventory (MBI), which assesses three dimensions of occupational burnout: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). Higher scores on emotional exhaustion and depersonalization, together with lower scores on personal accomplishment, indicate a higher level of burnout.

Statistical analysis

Descriptive statistics were used to summarize the demographic and professional characteristics of the study participants. Categorical variables were presented as frequencies and percentages, whereas continuous variables were summarized using the mean and standard deviation (Mean ± SD).

The normality of continuous variables was assessed using the Shapiro–Wilk test. As the data were not normally distributed, non-parametric statistical methods were applied.

Differences in overall burnout levels according to categorical variables were assessed using the Chi-square test or Fisher‘s exact test, as appropriate. Comparisons of continuous variables (age and years of professional experience) across the four burnout categories were performed using the Kruskal–Wallis test.

Statistical analyses were performed using IBM SPSS Statistics version 23.0. All statistical tests were two-tailed, and a p-value < 0.05 was considered statistically significant.

Ethical considerations

The study was conducted in accordance with the ethical principles of the Declaration of Helsinki. Participation was voluntary and anonymous, and electronic informed consent was obtained from all participants before completion of the questionnaire. No personally identifiable information was collected or stored, and all data were analyzed in aggregate form to ensure participants’ confidentiality.

Results

A total of 487 dentists participated in the study. The participants had a mean age of 46.40 ± 12.10 years and a mean professional experience of 21.25 ± 12.43 years, representing a predominantly middle-aged and experienced dental workforce. Most respondents were women, married, worked in individual dental practices, and were practice owners or co-owners. Detailed demographic and professional characteristics are presented in Table 1.

Table 1. Demographic and professional characteristics of the study participants (n = 487)

Characteristic	n (%) or mean ± SD
Sex	
Male	118 (24.2)
Female	369 (75.8)
Age (years)	
Mean ± SD	46.40 ± 12.10
Range	25–73
Professional experience (years)	
Mean ± SD	21.25 ± 12.43
Range	0–48
Marital status	
Single	49 (10.1)
Cohabiting	88 (18.1)
Divorced/Separated	42 (8.6)
Widowed	13 (2.7)
Married	295 (60.6)
Primary workplace	
Individual practice	347 (71.3)
Group practice	129 (26.5)
Both individual and group practice	11 (2.3)
Professional status	
Employee dentist	76 (15.6)
Practice owner	355 (72.9)
Co-owner	56 (11.5)

The overall level of burnout was determined according to the number of burnout dimensions reaching the high-risk category. This recently proposed classification provides an integrative measure of burnout severity by reflecting the cumulative number of burnout dimensions classified as high. Participants with no burnout dimension at a high level were classified as having no overall burnout, those with one high burnout dimension as having low overall burnout, those with two high burnout dimensions as having moderate overall burnout, and those with high scores across all three burnout dimensions as having high overall burnout [25, 26].

More than half of the respondents (51.5%) had no high burnout dimension, whereas 25.5% demonstrated low overall burnout, 9.4% moderate overall burnout, and 13.6% high overall burnout (Table 2).

Table 2. Distribution of participants according to the overall levels of burnout

Overall burnout level	Definition	n	%
None	No burnout dimension at a high level	251	51.5
Low	One burnout dimension at a high level	124	25.5
Moderate	Two burnout dimensions at a high level	46	9.4
High	Three burnout dimensions at a high level	66	13.6
Total		**487**	**100.0**

The results showed no statistically significant associations between overall burnout levels and participants' sex, age, years of professional experience, or primary workplace ($p > 0.05$ for all comparisons). However, overall burnout level was significantly associated with marital status ($p = 0.024$) and professional status within the dental practice ($p = 0.010$) (Table 3).

Table 3. Association between overall burnout level and marital status and professional status

Variable	Category	None n (%)	Low n (%)	Moderate n (%)	High n (%)	*p* value
Marital status	Single	28 (57.1)	15 (30.6)	4 (8.2)	2 (4.1)	**0.024**
	Cohabiting	47 (53.4)	21 (23.9)	8 (9.1)	12 (13.6)	
	Divorced/Separated	18 (42.9)	11 (26.2)	3 (7.1)	10 (23.8)	
	Widowed	4 (30.8)	9 (69.2)	0 (0.0)	0 (0.0)	
	Married	154 (52.2)	68 (23.1)	31 (10.5)	42 (14.2)	
Professional status	Employee dentist	40 (52.6)	16 (21.1)	10 (13.2)	10 (13.2)	**0.010**
	Practice owner	169 (47.6)	100 (28.2)	33 (9.3)	53 (14.9)	
	Co-owner	42 (75.0)	8 (14.3)	3 (5.4)	3 (5.4)	

Among marital status categories, divorced or separated dentists demonstrated the highest proportion of high overall burnout (23.8%), compared with married (14.2%), cohabiting (13.6%), and single respondents (4.1%). Widowed participants most frequently reported low overall burnout (69.2%), although this subgroup was small.

Professional status was also significantly associated with burnout. Practice owners showed the highest proportion of high overall burnout (14.9%), whereas employed dentists more frequently demonstrated moderate overall burnout (13.2%). In contrast, co-owners most commonly reported no overall burnout (75.0%).

Discussion

The present study found no significant associations between overall burnout and sex, age, years of professional experience, or primary workplace. In contrast, marital status and professional status within the dental practice were significantly associated with burnout levels.

The absence of sex differences in burnout is consistent with several previous studies reporting that gender is not a significant predictor of burnout among dentists [6, 16, 27, 28]. Conversely, other authors have reported higher burnout levels among either male or female dentists, suggesting that the influence of sex may depend on cultural, occupational, and social factors [29, 30]. Therefore, the relationship between sex and burnout remains inconclusive in the current literature.

Similarly, no association was observed between age or years of professional experience and burnout in the present study. Although numerous investigations have suggested that younger dentists are more susceptible to burnout, particularly emotional exhaustion, other studies have failed to demonstrate such a relationship [6, 16]. Our findings are in agreement with those reporting no significant association between age and burnout, indicating that occupational burnout may affect dentists regardless of age or professional experience [27].

Marital status was significantly associated with burnout levels in the present study. Divorced or separated dentists demonstrated the highest proportion of high overall burnout, whereas single respondents showed the lowest proportion. These findings are partially consistent with the study by Osborne and Croucher (1994), who reported that marital status was associated with certain dimensions of burnout and suggested that married dentists may benefit from greater social support, resulting in lower burnout levels [31]. However, other investigations found no significant association between marital status and burnout, suggesting that the role of family circumstances remains controversial [11, 27]. The relatively small number of participants in some marital-status categories should also be considered when interpreting these differences.

No significant relationship was identified between primary workplace and overall burnout. This finding differs from previous studies indicating that dentists working in individual practices experience higher burnout, particularly reduced personal accomplishment, potentially due to limited collegial support and fewer opportunities for professional interaction [6, 28]. These discrepancies may reflect differences in healthcare systems, practice organization, and professional working conditions across countries.

Professional status within the dental practice was significantly associated with overall burnout. Practice owners had the highest proportion of high overall burnout, whereas employed dentists more frequently experienced moderate burnout. These findings differ from those of Gómez-Polo et al. (2022), who reported significantly higher emotional exhaustion and depersonalization among employed dentists than among practice owners. The authors suggested that employed dentists may experience greater psychological pressure because they continually need to demonstrate their professional competence and clinical performance [6].

One possible explanation for the higher proportion of high overall burnout observed among practice owners in the present study is the additional organizational and managerial responsibility associated with ownership of a dental practice. Unlike employed dentists, practice owners are responsible not only for clinical care, but also for staff management, administrative activities, scheduling, financial sustainability, and the overall functioning of the practice. The combination of clinical responsibilities with these additional managerial and organizational demands may increase the cumulative occupational burden experienced by practice owners.

This interpretation should, however, be considered cautiously. The present study did not directly assess managerial workload, management training, working hours, financial pressures, or other specific responsibilities associated with practice ownership. Therefore, these factors cannot be considered established determinants of burnout based on the present findings and should instead be regarded as

plausible explanations requiring further investigation. Future studies including measures of managerial responsibilities, workload, working time, financial pressures, and management competencies could help clarify whether these factors contribute to the higher burnout observed among practice owners.

The discrepancy between our findings and previous reports may, therefore, reflect differences in employment structures, professional responsibilities, and the organization of dental services across healthcare settings. It is also possible that the relationship between professional status and burnout is context-dependent, with practice ownership representing a different combination of professional autonomy, responsibility, workload, and occupational demands in different countries.

Overall, the present findings support the view that burnout among dentists is a multifactorial phenomenon influenced by both personal and occupational characteristics. The significant association observed with professional status, together with the higher proportion of high burnout among practice owners, indicates that occupational roles and organizational responsibilities deserve particular attention in future research. At the same time, the differences between the present findings and those reported in other countries emphasize the importance of considering national and organizational context when interpreting burnout among dental professionals. National evidence remains essential for developing targeted strategies to improve dentists' occupational well-being and support workforce sustainability.

Conclusion

The present study demonstrated that burnout represents an important occupational health issue among Bulgarian dentists, with nearly half of the participants exhibiting at least one burnout dimension at a high level. Although no significant associations were found between overall burnout and sex, age, years of professional experience, or primary workplace, marital status and professional status within the dental practice were significantly associated with burnout levels.

These findings suggest that burnout among dentists is influenced by multiple personal and occupational factors, rather than by demographic characteristics alone. Considering the potential impact of burnout on dentists' well-being, professional performance, and quality of patient care, greater attention should be paid to its early recognition and prevention. Targeted interventions aimed at promoting mental well-being, reducing occupational stress, and supporting dentists in different professional roles may contribute to improving both workforce sustainability and the quality of dental services. Further multicenter and longitudinal studies are needed to better understand the determinants of burnout and to evaluate the effectiveness of preventive strategies.

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