



Evaluation of Occupational Burnout and Job Satisfaction among Endodontists in Iran

Bahareh Hosseini ^a , Hamed Manocherifar ^{a*} , Arash Shahravan ^b , Aseman Yazdani ^c ,
Tayebeh Malek Mohammadi ^c , Iman Mohammadzadeh ^d , Amir Hossein Nekouei ^e

^a Endodontology Research Center, Kerman University of Medical Sciences, Kerman, Iran; ^b Endodontology Research Center, Kerman University of Medical Sciences, Kerman, Iran; ^c Endodontic Department, Kerman Dental school, Kerman University of Medical Sciences, Kerman, Iran; ^d Social Determinants on Oral Health Research Center, Kerman University of Medical Sciences, Kerman, Iran ^e PhD Candidate in Epidemiology, Faculty of Public Health, Department of Biostatistics and Epidemiology, Kerman, University of Medical Sciences

Article Type: Original Article

Received: 11 Jan 2024

Revised: 14 April 2024

Accepted: 10 May 2024

Doi: 10.22037/iej.v19i3.40955

*Corresponding author: Hamed Manocherifar, Endodontology Research Center, Kerman University of Medical Sciences, Kerman, Iran

E-mail: h.manochehrifar@kmu.ac.ir

Introduction: Occupational burnout has been introduced as one of the most critical social problems. The present study aimed to evaluate occupational burnout among a group of Iranian endodontists. **Material and Methods:** Seventy-two Iranian endodontists participated in this cross-sectional study by completing the abbreviated Maslach Burnout Inventory (aMBI), consisting of one questionnaire in three domains. The data were analyzed with SPSS 21, using the chi-squared test, correlation test, and linear regression. **Results:** Concerning occupational burnout, 2.9% of the participants had severe emotional exhaustion, 4.2% exhibited an intense feeling of decreased accomplishment, 67.2% exhibited moderate occupational burnout, and 78.9% of the participants were satisfied with their job. Of all the variables, only the years elapsed since graduation had an inverse and significant correlation with occupational burnout among endodontists. **Conclusion:** The overall mean scores of endodontists showed a moderate rate of occupational burnout compared to the standard mean scores in this field. Recent graduates exhibited higher scores.

Keywords: Dentist; Endodontist; Iran; Maslach Inventory; Occupational Burnout

Introduction

Occupational burnout is a gradual reaction to chronic mental processes, stressful situations, and intense excitement in the work environment [1]. According to Maslach's definition, which is the most complete and most commonly used description of occupational burnout, it is a psychological syndrome consisting of three dimensions [1, 2]: emotional exhaustion (EE), which refers to intense feelings, including physical and non-physical ones; depersonalization (DP), which refers to the development of negative or pessimistic attitudes towards patients; and a feeling of personal accomplishment (PA), which determines an individual's accomplishments and competence in their occupation. Higher EE and DP and lower PA increase the severity of occupational burnout. According to previous studies, emotional burnout is positively correlated with depression [3].

Gorter reported that 26% of dental staff are at risk of emotional exhaustion (EE) and depersonalization (DP). Based on previous

studies, approximately 11-16% of dentists exhibit high levels of occupational burnout [4-6]. It appears that the three dimensions that define occupational burnout are much related to the dental practitioners' field of work [7]. The following items have been reported to be some of the factors leading to occupational burnout in dentistry: time and work pressures, practice management, patient relations, inflicting pain or fear, medical-technical aspects, interferences of work and private life, physical and economic pressure regulations and restrictions, dentistry in society, and communication with colleagues.

It has repeatedly been reported that occupational burnout results from chronic occupational stress involving many factors. Burnout is different from stress; however, long-term stress can exacerbate the symptoms and signs of burnout, although it is not the only factor leading to burnout. In addition, the symptoms and signs of stress might be more physical than emotional [8].

One of the specialty fields in dentistry is endodontics. It has been suggested that psychosocial and psychological problems are

noteworthy among endodontists; however, these factors do not lead to occupational burnout in all these professionals. However, endodontists generally suffer from stresses related to patients and difficult and complicated cases [6, 9]. Some studies are available on occupational burnout in different dental fields. However, no specific report is available on endodontists, especially in Iran.

Material and Methods

The study population consisted of endodontists participating in the Symposium of the Iranian Association of Endodontists. The sample size, calculated using the t-distribution and assuming a population standard deviation of 12, is determined to be 92. This sample size is needed to estimate a mean with 95% confidence and a precision of 2.5.

In the present study, the abbreviated Maslach Burnout Inventory (aMBI) was used in association with a questionnaire on demographic data prepared by the researchers. The demographic data consisted of age, gender, and marital status (not married vs other), and the data on the occupational status consisted of the time elapsed since graduation from the undergraduate dental course and the specialty course in endodontics, the years in the dental practice, and root canal treatment, the location of the occupational activity (Clinic vs Private office), the employment status, the mean work hours in a week, and the approximate number of patients dealt with each day. In addition, there was a question about the participants' general health status (Good vs Poor) and activities such as studying and reading, sports, and artistic activities (Have vs not Have).

The study protocol was approved by the Ethics Committee of the University under the code KA94/592. The validity and reliability of the questionnaire were confirmed in a pilot study.

The questionnaire's internal consistency was reported with Cronbach's alpha coefficient ($\alpha=0.71$, $r=0.90$) in the main version [10, 11]. In the present study, the aMBI, which is specific for physicians, was used [2, 12]. The face and content validity of this inventory was evaluated by nine endodontists, and its content validity index (CVI) was estimated at 0.94. The aMBI consists of nine domains. The frequencies of the feelings are determined by scores from zero to six in terms of percentile values. To determine the severity of burnout, the response scores of each group are summed up, and the achieved score in each domain of occupational burnout is characterized in three categories: low (0-6), moderate (7-12), and high (13-18). The score range in all the domains is 0-18. Higher scores in the EE burnout domain and depersonalization and lower scores in the domain of a feeling of decreased personal accomplishment indicate higher occupational burnout. Besides, three questions related to job satisfaction were used, too, whose validity has been confirmed in a study by McManus [13]. The score range of these three questions was 0-18, with higher scores indicating a higher level of job satisfaction. The demographic data consisted of age, gender, and marital status (not married vs other), and the data on the occupational status consisted of the time elapsed since graduation from the undergraduate dental course and the specialty course in endodontics, the years in the dental practice, and root canal treatment, the location of the occupational activity (Clinic vs Private office), the employment status, the mean work hours in a week, and the approximate number of patients treated with each day. In addition, there was a question about the participants' general health status (Good vs Poor) and activities such as studying and reading, sports, and artistic activities (Have vs Not Have) (Table 1).

Table 1. The effect of demographic, workload, health status, and general activities variables on endodontist burnout

	B	Std. Error	95%CI of B	P-value
(Constant)	54.05	18.34	(18.1,90)	0.006
Sex(Female vs Male)	-0.37	3.05	(-6.35,5.61)	0.904
Age	-0.19	0.62	(-1.41,1.03)	0.762
Marital status(Not married vs others)	4.44	3.67	(-2.75,11.63)	0.235
Time elapsed since graduation from the undergraduate dental course	0.3	0.87	(-1.41,2.01)	0.733
Time elapsed since graduation from the specialty course in endodontics	-0.64	0.31	(-1.25,-0.03)	0.047
Years in the dental practice	-0.02	0.52	(-1.04,1)	0.965
Practice years in the root canal treatment	0.03	0.73	(-1.4,1.46)	0.969
City (Tehran vs Others)	0.2	0.24	(-0.27,0.67)	0.425
Location of the occupational activity (Clinic vs Private office)	-0.48	0.98	(-2.4,1.44)	0.624
Employment status (University vs Others)	1.4	1.47	(-1.48,4.28)	0.348
Work Shifts	-1.01	2.8	(-6.5,4.48)	0.72
Mean work hours in a week	0.07	0.11	(-0.15,0.29)	0.518
Approximate number of patients treated in a day	-0.27	0.54	(-1.33,0.79)	0.623
General activities (Have vs not Have)	-0.73	0.55	(-1.81,0.35)	0.194
General health status(Good vs Poor)	-1.43	1.99	(-5.33,2.47)	0.476

Statistical analysis

Statistical analyses were conducted using IBM SPSS Statistics 20 software (IBM SPSS Inc., Chicago, IL, USA) at a significance level of 5% (P=0.05). The normality of continuous variables was assessed with the Shapiro-Wilks test and t-test was used to compare the mean scores of occupational burnout and job satisfaction with two-state variables such as gender and marital status; multi-state variables were compared with ANOVA, including the workplace. Chi-squared test was used to compare different levels of occupational burnout and qualitative variables; the correlation test was used to analyze the relationship between quantitative variables, and linear regression was used to analyze the effect of variables simultaneously. The qualitative variables in the regression model were considered as dichotomous variables.

Results

Eighty-nine endodontists from different parts of Iran, taking part in the Symposium of the Iranian Association of Endodontists, were included in the present study and 72 person completed the questionnaire (response rate=80.89%). The endodontists completed a questionnaire from 19 different cities and towns in Iran, with the majority from Mashhad and Tehran, with 26.5% and 20.6%, respectively. Seventy-two participants completed the questionnaire, indicating a response rate of 80.89%. The participants' age range was 28-62, with a mean age of 39.36±7.90 years, with 58.3% and 41.7% of the subjects being male and female, respectively. Table 2 presents the demographic data of the participants. Concerning the various activities of the

endodontists included in the study, 35.3% participated in sporting activities, 14.7% had reading and cultural affairs activities, 4.4% had artistic activities, 10.3% had various activities, 2.9% were engaged in both sporting and artistic, and other activities, 14.7% had sporting and reading activities, 7.4% had sporting and artistic activities, 2.9% had sporting, artistic, and reading activities, 1.5% had reading and other activities, and 5.9% had artistic and reading activities. The participants' self-assessment of their general health was as follows: very bad, 1.4%; bad, 4.2%; moderate, 36.1%; good, 51.4%; and very good, 6.9%.

Table 3 presents the participants' frequency distributions regarding employment status and the activity's location. The majority of the participants had private offices and all of them, worked morning or evening shifts or both. Simultaneous with educational and research activities in the university concerning employment, most of the participants were government employees and worked in the morning or afternoon shifts. Table 4 presents the endodontists' responses to questions on the abbreviated Maslach Burnout Inventory. Gender (P=0.92%) and marital status (P=0.76%) were not significantly related to occupational burnout and job satisfaction (P=0.82, P=0.39). Tables 5 and 6 present the severity of occupational burnout and its domains and job satisfaction among the participants.

Simultaneous analysis of the variables through the linear regression only showed a significant relationship between the years elapsed since graduation from the university in endodontics and occupational burnout in endodontists (P=0.047, regression coefficient=-0.64). However, there were no significant relationships between the other variables and occupational burnout and job satisfaction.

Table 2. The frequency distributions of the participants' demographic data

	Mean (SD)	Minimum	Maximum
The number of years elapsed since graduation from the undergraduate course	14 (8.10)	4	47
The number of years elapsed since graduation from the endodontics course	8.67 (6.90)	1	30
The number of years in the dental profession	9.60 (7.01)	1	25
The number of years in the endodontic profession	5.20 (2.94)	1	15
The number of patients visited each day	5.20 (2.90)	1	15
Weekly work hours	32.70 (16.50)	3	100

Table 3. The frequency distributions of the participants in terms of the employment status

Location of activity	University 11.3%	Private Office 18.3%	Dental clinic 8.5%	University and Private office 35.1%	University and Dental clinic 11.3%	Private office and Dental clinic 15.5%
Employment status	Officially employed 27.5%	Working based on a contract 46.3%	None 26.2%			
Work shift	Morning 2.9%	Afternoon 15.7%	Morning and afternoon 81.4%			

Discussion

The present study showed that the endodontists in Iran had moderate occupational burnout, and a large proportion exhibited proper job satisfaction. Occupational burnout has been identified as a significant social problem [10]. However, it is not customary in some occupations to evaluate such a problem because admitting that some professionals might behave non-professionally might not be pleasant for some people [10]. Maslach and Jackson defined occupational burnout as a mental syndrome of emotional exhaustion, depersonalization, and decreased feeling of personal accomplishment that might occur in individuals who cooperate with others in some capacity. Emotional exhaustion refers to an excessive feeling of emotion and a deficiency in emotional resources. Depersonalization refers to a negative, obstinate, or excessively isolated response to other individuals who usually receive care or self-care. Reduced personal accomplishment refers to a feeling of decreased competence and success in the occupation [14]. The abbreviated Maslach Burnout Inventory (aMBI) has gained widespread

acceptance in burnout research within the field due to its ease of administration and its demonstrated ability to improve survey response rates [15-17]. This study utilized the abbreviated Maslach Burnout Inventory (aMBI), a validated tool specifically designed to assess burnout among healthcare professionals.

Occupational burnout is a state of mental and physical exhaustion caused by chronic and high stress levels. If mental and psychological stresses continue, they might lead to the loss of motivation and exhilaration in individuals. An increase in occupational burnout might result in decreased professional Activity, limitation of healthcare quality, increased procedural errors, and an increased retirement rate [18].

Occupational burnout decreases an individual's energy, causes a decreased feeling of hope and ability, and induces a feeling of pessimism and irritation. A lack of job satisfaction due to occupational burnout leads to the loss of job and social relations and health injuries [19]. Evidence from a parallel pattern shows that occupational burnout is not merely a specific stress response; instead, it is a syndrome with some identifiable principles [20]. Of all the tools introduced to evaluate occupational burnout, the

Table 4. The severity of occupational burnout and its domains and job satisfaction among the participants

	Low	Moderate	Severe
Occupational Burnout	32.8%	67.2%	0 %
Emotional Exhaustion	66.7%	30.4%	2.9%
Depersonalization	95.8%	4.2%	0 %
A decreased feeling of individual success	78.9%	16.9%	4.2%
Job satisfaction	4.2%	16.9%	78.9%

Table 5. The descriptive data on occupational burnout and its domains and job satisfaction among the participants

Feeling	Mean (SD)	Min	Max
Occupational burnout	19.47 (5.57)	3.00	36.00
Emotional exhaustion	4.31 (4.20)	0.00	18.00
Depersonalization	0.78 (1.91)	0.00	11.00
Decreased feeling of individual success	14.61 (3.21)	3.00	18.00
Job satisfaction	15.12 (4.30)	0.00	18.00

Table 6. The effect of demographic, work load, health status, and general activities variables on endodontists burnout

	B	Std. Error	95%CI of B	P-value
(Constant)	54.05	18.34	(18.1,90)	0.006
Sex(Female vs Male)	-0.37	3.05	(-6.35,5.61)	0.904
Age	-0.19	0.62	(-1.41,1.03)	0.762
Marital status(Not married vs others)	4.44	3.67	(-2.75,11.63)	0.235
Time elapsed since graduation from the undergraduate dental course	0.3	0.87	(-1.41,2.01)	0.733
Time elapsed since graduation from the specialty course in endodontics	-0.64	0.31	(-1.25,-0.03)	0.047
Years in the dental practice	-0.02	0.52	(-1.04,1)	0.965
Practice years in the root canal treatment	0.03	0.73	(-1.4,1.46)	0.969
City (Tehran vs Others)	0.2	0.24	(-0.27,0.67)	0.425
Location of the occupational activity (Clinic vs Private office)	-0.48	0.98	(-2.4,1.44)	0.624
Employment status (University vs Others)	1.4	1.47	(-1.48,4.28)	0.348
Work Shifts	-1.01	2.8	(-6.5,4.48)	0.72
Mean work hours in a week	0.07	0.11	(-0.15,0.29)	0.518
Approximate number of patients treated in a day	-0.27	0.54	(-1.33,0.79)	0.623
General activities (Have vs not Have)	-0.73	0.55	(-1.81,0.35)	0.194
General health status(Good vs Poor)	-1.43	1.99	(-5.33,2.47)	0.476

Maslach Burnout Inventory was used in the present study as the most commonly used tool to assess occupational burnout in individuals with different occupational histories and experiences. It has high validity, with a limited number of questions [21]. In the present study, 32.8% of endodontists exhibited a low level of occupational burnout, 67.2% had moderate, and none exhibited severe. The response rate for the questionnaire was 80.89%. However, the response rate in a study by Gorter *et al.*, [20] on the occupational burnout among maxillofacial surgeons in the Netherlands was 70% (14), while in a study by Rios-Santos *et al.* [22] on Spanish periodontists, the response rate was 59.85%, with a response rate of 45.9% in a study on Korean dentists. Therefore, the response rate in the present study was higher than in the studies above. The differences in response rates might be explained because the present study was carried out in person, while the studies above were carried out through mail or telephone calls. Occupational burnout has been evaluated in different studies. Houri *et al.* [23] reported that 29% of dentists in Turkey exhibited occupational burnout. Eslamipour reported a low rate and frequency of occupational burnout among dentists in Isfahan, Iran [11]. A study on dental practitioners in Northern Ireland showed that approximately 25% of dentists suffered from a high level of occupational burnout [24]. A national survey in England showed that 8% of British dentists exhibited occupational burnout [6]. In addition, several studies showed that 2.5% of German dentists and 13% of Dutch dentists exhibited occupational burnout [25].

The discrepancies between the results of the present study and previous studies might be attributed to differences in the dental procedures carried out by general dental practitioners and endodontists, differences in the procedures carried out by different specialists, and differences in the environmental and cultural conditions and also health care system conditions between different countries [18]. Besides, the use of different tools to assess occupational burnout might affect the results. The occupational burnout rate in the present study was less than that in previous studies on dental specialists. Rios-Santos *et al.* [22] Reported a rate of 13.83% for occupational burnout among Spanish periodontists. In the present study, 2.9% of the participants suffered from severe emotional exhaustion, which is different from a study in India, in which its rate was 47.22% [26]. In a study by Houri *et al.*, [23] 38% of Turkish dentists exhibited severe emotional exhaustion. Another study reported that this rate in Swiss postgraduate students was 18% [27] In another study on dental postgraduate students in Greece, 80% of endodontic postgraduate students had severe EE and DP, and 40% of the subjects exhibited severe EE overall. [28].

None of the participants in the present study suffered from depersonalization. However, in the domain of a feeling of decreased individual accomplishment, 4.7% of the participants exhibited severe burnout, which is different from other studies. Such a difference might be attributed to differences in the study populations and differences in the work conditions and regulations in different countries.

Evaluation of the relationship between occupational burnout and demographic variables showed an inverse and significant relationship only between the number of years elapsed since graduation from the endodontic specialty course. There was higher occupational burnout with a shorter time since graduation. The results of evaluations concerning age and years showed increased occupational burnout and occupational participation in the early years of the profession, which was more common among postgraduate medical students and young nurses and physiotherapists [6, 29]. This indicates that the work conditions become normal with increased inexperience, and the individual can better adapt himself/herself to the occupational conditions. Occupational burnout occurs in the profession's early years and in younger professionals due to a lack of adaptation to new conditions, and more knowledge and experience increase preparation for dealing with stressful situations.

In the present study, there were no significant relationships between occupational burnout and other variables such as age, gender, the number of patients treated every day during the weekdays, the type of employment, and the time elapsed since graduation from the undergraduate course. Some studies have reported a higher rate of occupational burnout and EE in females than males [18]. Some others have reported higher DP in male dentists than in females [18, 29]. Even some others have reported no significant differences in the incidence of occupational burnout between males and females [6]. Some studies have reported a higher rate of occupational burnout in female dentists, older individuals, and those majoring in specialty courses [30]. A systematic review showed that occupational burnout was directly correlated with younger age, university students' status, high occupational pressures, work hours, and personality traits. The review revealed a lack of studies that evaluated the direct reasons for occupational burnout in dentistry, necessitating further studies [18]. In addition, a study showed that general dental practitioners had higher DP and EE than dentists with higher professional competence, with a lower individual accomplishment rate [6].

The present study is the first one to evaluate occupational burnout in endodontists. Considering the characteristics of

different dental specialty fields, such studies are necessary for each field in dentistry. Considering the questionnaire-oriented and self-report nature of the study that might be associated with a lower or higher tendency to report the symptoms and signs of occupational burnout, it is necessary to design and carry out cross-sectional studies to evaluate the long-term effects of occupational burnout on dentists' performance.

Workload as a predictor factor for burnout was considered as Mean work hours in a week, years of dental practice in endodontics, and the approximate number of patients dealt with each day. However, there were no significant differences between these predictors. Empirical studies have indicated that an individual's coping strategy such as problem-focused coping and emotion-focused coping can significantly influence the level of psychological burnout, either increasing or decreasing it, one meta-analysis results show that problem-focused coping is negatively correlated with all three dimensions of burnout symptoms, while emotion-focused coping is positively correlated with these dimensions.[31] While we acknowledge the potential importance of coping mechanisms, we chose to focus solely on other factors in this study due to limitations related to questionnaire length and the complexity of burnout moderators. We plan to explore the influence of coping strategies on burnout in a future independent study.

Our study is only valid when interpreted within the context of its limitations. Firstly, the surveys were self-reported, which might not accurately represent actual behaviors and could introduce reporting bias. Secondly, while we evaluated a group of demographic, social, and work-related characteristics that have been examined in prior studies, we did not consider other potentially significant factors. Variables such as race, organizational culture, coping strategies to deal with burnout, perceived support structure, or other stressors that could affect work-life balance were not included in our analysis. These unexamined factors may play a more important role than those we assessed, potentially influencing the study's outcomes and generalizability. Although despite achieving a response rate of 80.89%, there remains the possibility of non-response bias. This bias could affect the generalizability of our findings; the total number of respondents was small (n=72). As a result, the prevalence rates and other findings reported in this study cannot be directly extrapolated to other endodontists and countries. Future research with larger sample sizes and diverse populations is necessary to validate and expand upon these results.

For clinical practice, our study suggests the need for tailored interventions that address specific demographic and work-related factors affecting professionals' work-life balance. Healthcare providers and administrators should consider implementing support systems that mitigate the impact of stressors identified in this study

Future research should aim to include larger and more diverse samples to enhance generalizability and conduct longitudinal studies to understand the evolution of work-life balance over time in Endodontists. Incorporating additional variables such as race, social supports, coping strategies, workload and perceived support structures, along with objective measures of behaviors and stress, will provide a more comprehensive understanding. Additionally, designing intervention studies, comparative studies across professions and cultures, qualitative research, and assessing the impact of technology and existing policies can offer deeper insights and inform effective strategies for improving work-life balance in various professional settings.

Conclusion

The present study showed that 67.2% of endodontists included in the present study suffered from occupational burnout. According to the results, the condition was more prevalent in subjects with less experience in root canal treatment. Therefore, it will be useful to design guidelines to transfer the experience of dentists with more professional experience with joint work or by holding educational courses to decrease the rate of occupational burnout. Besides, some adjunctive activities might be useful in decreasing the effect of the occupation on these dental practitioners. Proper education during study at the university might be useful in this respect.

Conflict of interest

None.

Funding support

None.

Author contributions

Conceptualization: A Shahravan, T Malekmohammadi, B Hosseini. Data Curation: AH Nekouei, I mohammadzadeh, H Manochehrifar. Methodology: A Shahravan, B Hosseini, A Yazdani. Investigation: A Yazdani, B Hosseini, H Manochehrifar Writing Original Draft: H Manochehrifar, B Hosseini. Review & Editing H Manochehrifar, I Mo Hammadzadeh, AH Nekouei, A Yazdani.

References

1. Maslach C, Jackson SE, Aspa. Burnout in organizational settings. 1984.
2. Maslach C, Leiter MP, Schaufeli W. Measuring burnout. The Oxford handbook of organizational well being 2008.
3. Bianchi R, Schonfeld IS, Laurent E. Burnout-depression overlap: a review. Clin Psychol Rev. 2015;36:28-41.
4. Te Brake H, Smits N, Wicherts JM, Gorter RC, Hoogstraten J, Eijkman MJCd. Burnout development among dentists: a longitudinal study. Eur J Oral Sci. 2008;116(6):545-51.
5. Te Brake J, Bouman A, Gorter R, Hoogstraten J, Eijkman MJCd. epidemiology o. Using the Maslach Burnout Inventory among dentists: burnout measurement and trends. Eur J Dent Educ 2008;36(1):69-75.
6. Denton D, Newton J, Bower EBJDj. Occupational burnout and work engagement: a national survey of dentists in the United Kingdom. Br. Dent. J. 2008;205(7):E13.
7. Gorter RC. Burnout among dentists: Identification and prevention: Universiteit van Amsterdam; 2000.
8. Kapoor S, Puranik MP. Burnout in Dentistry: An Overview. Int J Adv Health Sci. 2014.
9. Akhavan H, Mehrvarzfar P, Sheikholeslami M, Dibaj M, Eslami S. Analysis of anxiety scale and related elements in endodontic patients. Iran Endod J. 2007;2(1):29-31.
10. Maslach C. Published in Schaufeli, WB, Maslach, C., & Marek, T.(Eds.),(1993). Professional burnout: Recent developments in theory and research. Washington, DC: Taylor & Francis.
11. ESLAMIPOUR F, YAZDCHI E. OCCUPATIONAL BURNOUT AMONG DENTISTS IN ISFAHAN. 2017.
12. McManus I, Winder B, Gordon DJTL. The causal links between stress and burnout in a longitudinal study of UK doctors. 2002;359(9323):2089-90.
13. McManus I, Smithers E, Partridge P, Keeling A, Fleming PRJB. A levels and intelligence as predictors of medical careers in UK doctors: 20 year prospective study. 2003;327(7407):139-42.
14. Maslach C, Jackson SE, Leiter MP, Schaufeli WB, Schwab RL. Maslach burnout inventory: Consulting psychologists press Palo Alto, CA; 1986.
15. de Oliveira Jr GS, Chang R, Fitzgerald PC, Almeida MD, Castro-Alves LS, Ahmad S, McCarthy RJ. The prevalence of burnout and depression and their association with adherence to safety and practice standards: a survey of United States anesthesiology trainees. Anesthesia & Analgesia. 2013;117(1):182-93.
16. Lim WY, Ong J, Ong S, Hao Y, Abdullah HR, Koh DL, Mok USM. The Abbreviated Maslach Burnout Inventory Can Overestimate Burnout: A Study of Anesthesiology Residents. J Clin Med. 2019;9(1).
17. Hyman SA, Shotwell MS, Michaels DR, Han X, Card EB, Morse JL, Weinger MB. A survey evaluating burnout, health status, depression, reported alcohol and substance use, and social support of anesthesiologists. Anesthesia & Analgesia. 2017;125(6):2009-18.
18. Singh P, Aulak D, Mangat S, Aulak M. Systematic review: factors contributing to burnout in dentistry. Occupational Medicine. 2016;66(1):27-31.
19. Hutman S, Jaffe J, Segal R, Kemp G, Dumke L. Burnout: Signs, Symptoms and Prevention. . 2011. p. 1-9.
20. Jin MU, Jeong SH, Kim EK, Choi YH, Song KB, Idj. Burnout and its related factors in Korean dentists. 2015;65(1):22-31.
21. Maslach C, Jackson SE, Joob. The measurement of experienced burnout. 1981;2(2):99-113.
22. Ríos-Santos J-V, Reyes-Torres M, López-Jiménez A, Morillo-Velázquez J-M, Bullón PJMOPOCB. Burnout and depression among Spanish periodontology practitioners. 2010;15(5):813-19.
23. Huri M, Bağış N, Eren H, Umaroğlu M, Orhan KJJoDS. Association between burnout and depressive symptoms among Turkish dentists. J. Dent. Sci. 2016;11(4):353-9.
24. Gorter RC, Freeman RJCd, epidemiology o. Burnout and engagement in relation with job demands and resources among dental staff in Northern Ireland. 2011;39(1):87-95.
25. Gorter RC, Albrecht G, Hoogstraten J, Eijkman MAJCD, epidemiology o. Professional burnout among Dutch dentists. 1999;27(2):109-16.
26. Rao R, Modi P, Sidhwa Y, Hishikar N, Langade DJJIDA. Burnout among dental professionals in India: A questionnaire based survey. 2016;10:16-25.
27. Divaris K, Lai CS, Polychronopoulou A, Eliades T, Katsaros CJSmfZ. Stress and burnout among Swiss dental residents. Schweizer Monatsschrift für Zahnmedizin. 2012;122(7-8):610-5.
28. Divaris K, Polychronopoulou A, Taoufik K, Katsaros C, Eliades TJEJoDE. Stress and burnout in postgraduate dental education. 2012;16(1):35-42.
29. Al-Mobeeriek H, Al-Mobeeriek AFJJ. Burnout among dental academics and non-academics in Riyadh and Eastern Province, Saudi Arabia. 2011;20(04).
30. Huri M, Bağış N, Şahin S, Eren H, Orhan K. <http://edukasional.com/index.php/ARSA>.
31. Shin H, Park YM, Ying JY, Kim B, Noh H, Lee SM. Relationships between coping strategies and burnout symptoms: A meta-analytic approach. Professional Psychology: Research and Practice. 2014;45(1):44.

Please cite this paper as: Hosseini B, Manocherifar H, Shahravan A, Yazdani A, Malek Mohammadi T, Mohammadzadeh I, Nekouei AH. Evaluation of Occupational Burnout and Job Satisfaction among Endodontists in Iran. Iran Endod J. 2024;19(3): 216-22. Doi: 10.22037/iej.v19i3.40955.