

# Burnout Syndrome, a reality among dentists - systematic review



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## Abstract

The aim of this paper is to provide an up-to-date systematic review of the literature dedicated to Burnout Syndrome and to assess the incidence, level of occurrence and spread of this syndrome among dentists. In order to select the appropriate studies, a systematic search of the literature was performed in the electronic databases PubMed, Science Direct and Google Scholar, reaching a number of 7 final studies included. A long-term conceptual and operational definition characterizes burnout as a triad of emotional exhaustion (emotional overexpression and exhaustion), depersonalization (negative, painful, and detached responses from others), and reduced personal achievement (feelings of incompetence). The research of individual stressors and the many ways in which those in the medical field can actively fight with them is a gateway to improving an entire medical environment by focusing on the individual and providing a successful education to the next generation of physicians.

**Keywords:** burnout, review, dentistry professionals

## INTRODUCTION

Burnout Syndrome in health care professionals has gained significant attention in recent years. Given the intense emotional demands of the work environment, clinicians are particularly sensitive to the development of this syndrome more than in other workplaces [1,2].

The term "burnout" was described by psychologist Herbert Freudenberger in 1974 in an article entitled "Staff Burnout", in which he discussed dissatisfaction with work, precipitated by work-related stress. A broadly applicable description defines burnout as a state of mental and physical exhaustion related to work or care activities. Freudenberger (1974) was the first to describe the concept of staff burnout. The basic elements of his definition of exhaustion have described these experiences as failure, wear, or exhaustion due to excessive demands on energy, power, or resources [3].

Burnout is associated with a variety of negative consequences, including depression, increased risk of medical errors, and negative effects on patient safety. In recent years there has been disagreement as to whether exhaustion and depression are the same or are different constructions, as they seem to have some common features (for example: loss of interest and impaired concentration). However, the results so far are inconclusive, and researchers do not agree on the degree to which we should expect such an overlap [4].

The Maslach Burnout Inventory (MBI) is the most widely used questionnaire to measure exhaustion in research studies. The MBI Human Services Survey is a self-administered 22-item questionnaire that was developed to measure exhaustion in human services workers and is the "gold standard" for measuring exhaustion. MBI items are rated on a Likert scale from 0 to 6 (0 = never, 1 = several times a year, 2 = once a month, 3 = several times a month, 4 = once a week, 5 = several times a week, 6 = every day) and noting elements from the sample, such as "I feel emotionally exhausted because of my work" [2].

It is designed to evaluate the 3 main dimensions of exhaustion:

1. Emotional exhaustion
2. Depersonalization
3. Personal achievement [2].

Burnout is detected using high scores of: high emotional exhaustion ( $\geq 27$ ), high depersonalization ( $\geq 10$ ), low personal achievement ( $\geq 33$ ), based on normative data of medical professionals [2].

Maslach summed it up in an extremely useful way, as well as methods to combat burnout, saying: "If all the knowledge and advice on how to overcome exhaustion could be summed up in one word, that word would be balance - balance between giving and receiving, balance between stress and calm, balance between work and home" [2].

One way to avoid the exhaustion of dentists and dental staff is to create enough time and space to meet work activities that promote involvement. Work aspects identified as providing an interesting and stimulating work environment include:

- Recognition of immediate and long-term work results;
- Patient care;
- Mastery / idealism / pride of work;
- Entrepreneurship;
- Material benefits;
- Professional mastery [5,6].

*Aim and objectives*

The aim of this paper is to provide an up-to-date systematic review of the literature dedicated to Burnout Syndrome and to assess the incidence, level of occurrence and spread of this syndrome among dentists of various specialities.

The aim of this systematic review was also to find, evaluate and synthesize evidence of burnout in the workplace of dentists.

**MATERIAL AND METHODS**

The question that led to the need for this study was formulated according to the PICOS qualitative analysis tool, composed of the following elements: "P" - population, "I" - intervention, "C" - comparison, "O" - result and "S" - type of study.

The formulation of the question was made by selecting the following eligibility criteria:

- P - dentists suffering from burnout
- I - assessment of the incidence and spread of Burnout syndrome
- C - comparing the incidence between different dental specialties and countries
- O - the spread of Burnout syndrome
- S - cross-sectional studies

Thus, the final research question led to the following goal: Comparative assessment of the incidence and spread of Burnout Syndrome among dentists in different dental specialties and countries.

The selection of studies for this systematic review paper was made in accordance with the PRISMA guide (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) on the development of systematic reviews and meta-analyses.

In order to select the appropriate studies, a systematic search of the literature was performed in the electronic databases PubMed, Science Direct and Google Scholar. As keywords used in the search, terms such as: burnout, syndrome, dentist, dentistry were used. The terms used could be found in both titles, abstracts or topic titles. For the selection of studies in these search engines, certain specific filters were used that do not allow an age of more than 10 years and the finding of "free full-text" articles as much as possible.

The titles and abstracts of the recording studies were exported to the EndNote X8 computer program and were scanned to exclude irrelevant studies and duplicates.

To be eligible, the studies had to meet the chosen inclusion and exclusion criteria:

**Inclusion criteria:**

- studies specifying Burnout syndrome in dentists
- cross-sectional studies
- studies using the Maslach Burnout Inventory (MBI) questionnaire as a data collection tool
- studies using only dentists as subjects
- studies published between 2011 and 2021

**Exclusion criteria:**

- studies published before 2011 (older than 10 years),
- studies written in a language other than English
- studies which included the term 'dentist' but investigated Burnout syndrome in other medical or dental professions than dentists
- letters to the publisher, case studies, systematic review

The search strategy eventually led to a total of 106 articles. After reading all the titles, 27 duplicates were found, which were removed, leaving a number of 79 articles. Also, another

31 articles were excluded because they were not relevant for the present study. The analysis of the 48 articles from the point of view of abstracts led to the elimination of another 18. The remaining 30 articles were fully reviewed and were subject to inclusion and exclusion criteria. Thus, we reached a number of 7 final studies included in the systematic review.

**RESULTS**

The validated data measurement tool used in the 7 studies underlying this systematic review is the The Maslach Burnout Inventory (MBI) questionnaire. It consists of 22 questions, with 5 answer options (on a scale of 1 to 5), which include three fundamental aspects of Burnout syndrome: emotional exhaustion (assessed by 9 questions), depersonalization (assessed by 5 questions) and personal fulfilment (assessed by 8 questions). The questionnaire was distributed to dentists by post, personally at their private practices [7] or distributed during postgraduate courses [8-10].

Also, all studies present as population of interest only dentists, these being mostly generalists [7], [8] or specialists [9,11,12]. Both public and dental practitioners [8], [12] or academics [10] were included.

The selection of study participants was generally made using data taken from the lists of dental councils [9] or dental associations [8], [11], public or private sector dental institutions [12], their personal practices [7] or were recruited during continuing education courses [10]. The participation of the subjects in the studies was done voluntarily [10].

The studies integrated in this paper vary greatly in terms of their location. Thus, two of them were performed in two different cities in India [8], [11], another in Iran [7], China [8], America [10], Pakistan [12] and Brazil [13].

The methodological quality of the primary studies was assessed using a modified version of the Newcastle Ottawa Scale (NOS) for the qualitative evaluation of cross-sectional studies. It uses 8 elements to assess the methodological quality of the study. For each item, 1 point is awarded for each "yes" answer, with a maximum possible score of 8 (Table 1).

Table 1. Study quality analysis based on the modified Newcastle-Ottawa quality assessment scale for cross-sectional studies. Legend: 1. Representativeness of the sample 2. Size of the sample 3. Non-respondents 4. Determination of exposure (absent or excluded) 5. Subjects in groups with different results are comparable, based on the design of the study or analysis. Confusion factors are controlled 6. Evaluation of the result (self-harm or suicide) 7. Statistical test 8. Clear variables (additional parameter)

Author, Year (Country)	Selection				Comparison	Results		Clear variables	Total score (%)
	1	2	3	4	5	6	7	8	
Bolbolian et al[7], 2017 (Iran)	1	1	0	0	2	0	1	0	5(62.5%)
Reddy et al[8], 2017 (India)	1	1	0	0	2	0	1	0	5(62.5%)
Choy et al [9], 2017 (China)	1	1	0	0	2	0	1	0	5(62.5%)
Calvo et al [10], 2017 (America)	1	1	0	0	2	0	1	1	6(75%)
Chainani et al[11], 2015 (India)	1	1	1	0	2	0	1	1	7(87.5%)
Azad et al [12], 2013 (Pakistan)	1	1	1	0	2	0	1	1	7(87.5%)
Carneiro et al [13], 2013 (Brazilia)	1	1	0	0	2	0	1	0	5(62.5%)
Methodological assessment score (%): Inadequate (0-33); Satisfactorily (34-66); Good (67-100)									

Thus, according to the analysis performed in Table 1, it can be seen that three of the studies integrated in this systematic review have a good methodological evaluation score [10], [11], [12], and the remaining four have a satisfactory score [7], [8], [9], [13].

Analyzing comparatively the seven studies, it was observed that only five of them specify the response rate of the subjects to the study, of which only three have a satisfactory value of over 60% [11], [12], [13]. One of the two items that specifies the response rate, but which has an inadequate value, approaches the satisfactory one, but does not exceed it (56%) [10], and the second has a much too low value (28.3%) [2, 3]. Instead, all 7 studies included, analyze subjects by age and sex and in addition, present other additional factors of comparison such as: specialty [8], [9], [10], [11], marital status [9], [12], if the spouse works [9], working environment (state or private) [8], [9], [9], [10], [11], [12], hours working [7], [12], [13].

The incidence and prevalence of Burnout Syndrome in dentists found in the seven cross-sectional studies analyzed, can be seen in Table 2 which compares the results in terms of sample size, specialization, country where the study was conducted and also analyzes work environment, which can be state or private.

Table 2. Characteristics of cross-sectional studies included in the systematic review. Abbreviations: EE = emotional exhaustion, DP = depersonalization, PA = personal accomplishments

Article, Author, Country	Year	Disease	Evaluation instrument	Sample size and type	Results
[7], Bolbolian et al, Iran	2017	burnout	Questionnaire - The Maslach Burnout Inventory(MBI)	103, General dentists, state and private	6.7% presented with Burnout syndrome
[8], Reddy et al, India	2017	burnout	Questionnaire - The Maslach Burnout Inventory(MBI)	150, General dentists, state and private	11.3% presented with a high level Burnout syndrome
[9], Choy et al, China	2017	burnout	Questionnaire - The Maslach Burnout Inventory(MBI)	301, General dentists, state and private	7% presented with a high level Burnout syndrome
[10], Calvo et al, America	2017	burnout	Questionnaire - The Maslach Burnout Inventory(MBI)	167, General dentists, state and private	13.2% presented with a high level Burnout syndrome, 79.6% moderate and 7.2% low
[11], Chainani et al, India	2015	burnout	Questionnaire - The Maslach Burnout Inventory(MBI)	140, General dentists, state and private	11.4% presented with a high level Burnout syndrome, 84.3% moderate and 4.3% low
[12], Azad et al, Pakistan	2013	burnout	Questionnaire - The Maslach Burnout Inventory(MBI)	General dentists, state and private	18,6% presented a high or moderate level of EE, 43,4% moderate or high level of DP and 31,8% low level of PA.
[13], Carneiro, Brazilia	2013	burnout	Questionnaire - The Maslach Burnout Inventory(MBI)	100, not specified speciality	32% presented Burnout syndrome

## DISCUSSIONS

The results of the study conducted by Bolbolian et al. they showed that more than half of them practiced their profession both in the morning and in the evening, and half of them worked between 21 and 30 hours a week [7]. More than two-thirds of them treated more than 6 patients a day and also more than two-thirds reported more than 30 years of experience [7]. Most dentists were over 40 years old and more than 60% reported moderate emotional exhaustion, but almost 14% reported severe emotional exhaustion [7]. The investigation reported that most dentists had a moderate level of depersonalization and only 15% had

severe depersonalization [7]. In this study, all dentists had a high and sufficient performance at work [7].

In the study by Reddy et al, a high level of burnout was observed in only 11.3% of participants [8]. Although small in number, this syndrome can lead to harmful addictions such as alcohol, drug addiction, extramarital affairs or self-destructive behaviors [8]. Burnout syndrome can thus be considered a serious risk for the dental profession, causing both a threat to the available workforce and a tragedy for the individual [8]. Therefore, burnout prevention is of key importance for dental professionals [8]. This study found that there is a statistical significance between the association between sex and Burnout syndrome [8]. Other findings of this study show the same results as other studies, that there was a high level of burnout in the age group under 25 years and in the age group 25-35 years, predominantly in women and those with only a university degree [12,13].

Choy et al, observed that 6 of the top 10 largest stressors are patient-related stressors and 3 are time-related [9]. Women dentists had higher average scores than men in terms of stressors related to the patient, work, staff or technical stressors [9]. This may be due to the fact that in addition to working as a dentist, they must also take care of their family [9]. Dentists with more than 20 years of practice who had postgraduate qualifications or completed their training as specialists had a lower average score of patient-related stressors than those with less than 20 years of professional experience [9]. It was also observed that the chance of having an increased total level of burnout was 5.08 times higher among dentists without postgraduate qualifications [9]. This may imply that dentists with broader skills and more knowledge have been less stressed [9]. Those with postgraduate qualifications had more knowledge, better techniques, better communication skills regarding the relationship with the patient, and this could have contributed to lowering the total burnout score.

The limitations of the study by Choy et al are the low response rate to the study [9]. The authors assumed that it was possible that the selected dentists were very busy and did not allocate the necessary time to complete the questionnaire or that they might not be interested [9].

Calvo et al, consider that it is possible that some of these dentists who suffer from Burnout syndrome continue to practice actively, which can be harmful both for them, for their health and for their patients [10]. Although most dentists in this study appear to be very involved in the work, they experience low levels of exhaustion [10]. Thus, in this study, burnout was negatively correlated with work commitment [10]. Burnout has been correlated with reduced cognitive performance and reduced practice safety [10]. It has been observed that younger doctors tend to be more exhausted due to less work experience, and doctors who are in the middle of their career have a higher risk of burnout because they work most hours, the balance between personal life and profession is the lower and have the highest rates of emotional exhaustion [10].

As limitations, Calvo et al. States that their target population used in the study may not be the most representative of the U.S. workforce, as participants were selected from dentists in 4 geographic locations who participated. to a course for further education [10]. Thus, it can be assumed that dentists who experience high levels of burnout are less likely to be among the participants in this course [10].

In the study by Chainani et al., Dentists with postgraduate qualifications showed high levels of professional fulfillment, which may be due to many reasons such as: the fact that receiving a diploma is an important thing, that there are qualification benefits that can be applied in general practice routine and that these qualifications allow access to more diverse career opportunities [11]. Also, high levels of professional fulfillment among those with other sources of income could be due to a sense of financial stability [11].



As limitations, Chainani et al., States that overtime was not assessed in association with Burnout syndrome, which can be explained by various levels of the syndrome [11]. Also, the data were cross-sectional and were collected through individual reports, which does not allow causal conclusions [11].

In the study by Azad et al. there were some limitations [12]. First, the data were collected using self-administered questionnaires, this being acknowledged, some subjects may have responded much more positively, although the survey was conducted anonymously [12]. Second, another limitation was the proportion of the target population composed predominantly of women practicing dentistry [12]. And thirdly, the sample size was reduced [12].

Carneiro et al. points out that the analysis of dentists with burnout syndrome (n = 32) showed a significantly high value, as less than a third of them had at least one of the dimensions of Burnout syndrome at critical levels [13]. This study did not show a significant difference in the relationship between sex and working hours, marital status and years of practice [13].

One of the limitations of the correct diagnosis of Burnout syndrome is that there is no general consensus regarding the interpretation of the questionnaire The Maslach Burnout Inventory (MBI), so each study shows different criteria for classification and diagnosis [10], [13]. The most used interpretations are those that use the parameters used by Grunfeld et al. in relation to the three dimensions of the questionnaire as follows: when there are high scores of emotional exhaustion and depersonalization and low scores for personal fulfillment, the existence of Burnout syndrome can be assessed [13].

## CONCLUSIONS

Dentists are part of a profession characterized by many hours of work and involving direct daily contact with patients, who are often tense and anxious about the treatment, because there is an idea implemented that suggest dental treatments can cause pain. As health care providers, dentists are subject to interpersonal stress due to the demanding nature of the occupation and the closeness to the patient. Therefore, dentists practice a profession, being prone to the development of Burnout Syndrome.

Burnout does not occur suddenly, but is the final stage of a process, leading to symptoms related to the size of the syndrome. Burnout poses a significant risk to dentists that should not be ignored. While restoring oral health and maintaining the patient's well-being is of paramount importance in the dental profession, the well-being of the service provider should not be neglected. In addition, it is obvious that the exhaustion of dentists has implications on the oral health of patients.

Thus, the present study highlights a clear incidence of Burnout Syndrome among dentists, with high prevalence rates in both women and men. It also shows us that its spread is varied around the globe and affects both general and specialist dentists, whether they work in the private sector or in state institutions.

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