

# Burnout Level among General and Specialist Dentists: A Global Manpower Concern

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## Abstract

**Introduction:** Professional burnout is considered a risk to the dental profession. In order to measure the professional burnout levels among Israeli dentists, an initial survey was conducted in 2010 among purposive cluster sample of 320 dentists.

**Methods:** Professional burnout level was measured by the burnout measure short version questionnaire. Independent variables included sex, age, specialization (general or specialist dentist), and years of professional experience. Univariate and multivariate analysis were performed testing the relationship of these independent variables to each of the 10 separate items in the burnout instrument.

**Results:** 144 dentists (45%) were found to be experiencing burnout, 10 dentists (3%) demonstrated severe burnout level. The most prevalent burnout items were physical exhaustion (76%) and negative attitude towards patients (60%). The multiple logistic regression model revealed that general dentist were more likely than specialist dentists to report a burnout score for feeling tired, feeling physically weak and sickly, feeling helpless, and feeling worthless and like a failure.

**Conclusions:** As general dentists are the majority of the dental manpower worldwide, our findings are relevant to the general dental practice and to the efforts to prevent and cope with professional burnout.

**Keywords:** Burnout level; General; Specialist dentists

## Introduction

Burnout is a prolonged response to chronic emotional and interpersonal stressors on the job, and it is a state of exhaustion, cynicism, and inefficacy. Exhaustion is described as the feeling of not being able to offer any more of oneself at an emotional level, cynicism as a distant attitude towards work, the people being served by it and colleagues, and inefficacy as the feeling of not performing tasks adequately and of being incompetent at work [1-5].

Dentistry is a profession with a wide range of possible stressors, and professional burnout is considered a risk to the dental profession [5-7]. Previous studies among dentists demonstrated that burnout is strongly related with depression, anxiety, sadness, distraction and psychological discomfort [5-8]. Early recognition, efficient coping strategies, and valuable prevention of professional burnout are strongly and urgently recommended [6-9].

Professional burnout studies in Israel were performed among teachers and the police workforce [10,11], but not among the dental profession. The dental profession in Israel has gone through deep and extreme organizational changes in the last decades, including an inclusion of a dental component in the national health insurance service [12-14].

As burnout in dentistry has been investigated in a relatively small number of studies and countries, we considered it valuable to perform an initial survey to measure the professional burnout levels among dentists in Israel by sex, age, specialization (general or specialist dentist), and years of working experience. We hypothesize that because of the recent implementation of the changes in the Israeli dental field, dentists will exhibit high level of job burnout.

## Methods

The study which was performed in 2010 was approved by the

Hebrew University Ethical Committee (3.1.10) and confidentiality was assured.

Out of 625 specialist dentists in Israel in 2009, the e-mail addresses of 360 of them were traced and a letter with an attached questionnaire was mailed. Eighty nine (25%) specialists answered the questionnaire. During a general Israel Dental Association 2010 convention, additional 32 dental specialists and 199 general dentists answered the questionnaire. Together, the purposive cluster sample comprised of 320 dentists-121 specialists and 199 general dentists- participating in the Israeli dentists' burnout levels initial survey.

The professional burnout level (dependent variable) was measured by the validated BMS (Burnout Measure Short Version) questionnaire, comprised of 10 items, previously validated for the Hebrew language [15].

According to this burnout measure [1,2,4,15], a person is (Table 1):

1. Physically (tired-item 1, weak/sickly-item 9), emotionally and mentally (helpless-item 3, hopeless- item 4, trapped- item 5, difficulties sleeping- item 7, depressed- item 8) exhausted.
2. Develops a negative attitude towards patients (disappointed with people- item 2, I've had it- item 6).

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3. Evaluates himself negatively (worthless/failure- item 10).

For each of the 10 items, the participants were asked how often they experienced the following according to the scale: Never-1, almost never - 2, rarely - 3, sometimes - 4, often - 5, usually - 6, always - 7.

According to the literature, the operational definition for burnout level was dichotomized as follows:

1. Not experiencing burnout - score 1- 2.
2. Experiencing burnout - score 3-7.

A score higher than 4, is an indication of severe burnout level [4,15].

Independent variables included:

1. Sex: male and female.
2. Age: ≤ 40 yrs, 40-60 yrs, and > 60 yrs.
3. Specialization: general or specialist (granted a certificate of specialty training) dentist.
4. Professional experience: ≤ 10 yrs, 10-20 yrs, and >20 yrs.

A cross-sectional design was utilized to compare burnout rates among specialist dentists and general dentists as well as across sex, age, and a range of professional experience. Prevalence of burnout measures by item are presented by frequency and percent. Univariate analysis was performed by Chi-Square test for the comparison of specialization. Multiple logistic regression model included sex, age, specialization, and professional experience, and we tested the relationship of these independent variables to each of the 10 separate items in the burnout instrument. SPSS 19.0 software was utilized with a statistical significant level of  $p < 0.05$ .

## Results

The study population comprised of 320 dentists, 216 (68%) males and 104 (32%) females. 106 (33%) dentists were over the age of fifty. 121 (38%) were specialists and 199 (62%) were general dentists. 163 (51%) had more than 20 years of professional experience.

144 dentists (45%) were found to be experiencing burnout (mean score >2). 10 dentists (3%) demonstrated severe burnout level (mean score >4).

Burnout measure prevalence (frequency and percent) among 320 study participants are presented in Table 1. As seen at the burnout total column, in the physical exhaustion item “I feel tired”, a burnout level was demonstrated among 76% of the 320 dentists. In the mental exhaustion item “I feel disappointed with people”, a burnout level was demonstrated among 60% of the 320 dentists. In the other 8 items a burnout level was demonstrated in less than 50% of the dentists.

In regard to the distribution among the different groups of dentists (specialist and general dentists’ burnout columns, Table 1), statistically significant differences were revealed in 4 items: “I feel tired” ( $p < 0.001$ ,  $OR = 2.52$ ), “I feel disappointed with people” ( $p = 0.05$ ,  $OR = 1.58$ ), “I feel helpless” ( $p = 0.003$ ,  $OR = 2.31$ ), and “I feel physically weak/sickly” ( $p = 0.02$ ,  $OR = 2.06$ ). In all 4 items, general dentists were found to be in higher risk for burnout than specialist dentists.

A multiple logistic regression model for independent variables’ effect on burnout measure, by item, is presented in Table 2.

Specialization was significantly associated with the item “I feel tired”. General dentists were more likely than specialist dentists ( $OR = 2.69$ ,  $p = 0.001$ ) to report a burnout score for this item.

Specialization and professional experience were significantly associated with the item “I feel helpless”. General dentist were more likely than specialist dentists ( $OR = 2.78$ ,  $p = 0.002$ ), and dentist having 10-20 years of professional experience were more likely than dentists having more than 20 years of professional experience ( $OR = 2.70$ ,  $p = 0.009$ ) to report a burnout score for this item.

Sex was significantly associated with the item “I feel depressed”. Females were more likely than males ( $OR = 3.17$ ,  $p = 0.005$ ) to report a burnout score for this item.

Sex and specialization were significantly associated with the item “I feel physically weak/sickly”. Females were more likely than males ( $OR = 2.76$ ,  $p = 0.001$ ), and general dentists were more likely than specialists ( $OR = 2.43$ ,  $p = 0.01$ ) to report a burnout score for this item.

Age, specialization and professional experience were significantly associated with the item “I feel worthless/like a failure”. Dentists at the age of 40-60 years were more likely than those at the age of 60 years and more ( $OR = 0.14$ ,  $p = 0.03$ ), general dentist were more likely than specialist dentists ( $OR = 2.97$ ,  $p = 0.007$ ), and dentist having 10-20 years of professional experience were more likely than dentists having more

Item	Burnout (Total)	Specialist Dentists Burnout	General Dentists Burnout	OR	p'
I feel tired	242 (76%)	78 (65%)	164 (82%)	<b>2.52</b>	<b>&lt; 0.001</b>
I feel disappointed with people	193 (60%)	64 (54%)	129 (65%)	<b>1.58</b>	<b>= 0.05</b>
I feel helpless	83 (26%)	20 (17%)	63 (32%)	<b>2.31</b>	<b>= 0.003</b>
I feel hopeless	52 (17%)	15 (13%)	37 (19%)	-	NS
I feel trapped	82 (26%)	24 (20%)	58(29%)	-	NS
I feel "I've had it"	116 (37%)	38 (32%)	78 (39%)	-	NS
I feel difficulties sleeping	81 (26%)	35 (29%)	46 (23%)	-	NS
I feel depressed	30 (10%)	12 (10%)	18 (9%)	-	NS
I feel physically weak / sickly	61 (20%)	15 (13%)	46 (23%)	<b>2.06</b>	<b>= 0.02</b>
I feel worthless / like a failure	47 (15%)	12 (10%)	35 (18%)	-	NS

Chi-Square test

**Table 1:** Burnout measure prevalence (univariate analysis) among 320 study participants - 121 specialist dentists and 199 general dentists.

Item	Sex	Age	Specialization	Experience
I feel tired	NS	NS	<b>p=0.001, OR=2.69 (general dentist)</b>	NS
I feel disappointed with people	NS	NS	NS (p=0.08)	NS
I feel helpless	NS	NS	<b>p=0.002, OR=2.78 (general dentist)</b>	<b>p=0.009, OR=2.70 (10-20 yrs)</b>
I feel hopeless	NS	NS	NS (p=0.06)	NS
I feel trapped	NS	NS	NS (p=0.07)	NS
I feel "I've had it"	NS	NS	NS	NS
I feel difficulties sleeping	NS	NS	NS	NS
I feel depressed	<b>p=0.005, OR=3.17 (female)</b>	NS	NS	NS
I feel physically weak / sickly	<b>p=0.001, OR=2.76 (female)</b>	NS	<b>p=0.01, OR=2.43 (general dentist)</b>	NS
I feel worthless / like a failure	NS	<b>p=0.03, OR=0.14 (40-60 yrs)</b>	<b>p=0.007, OR=2.97 (general dentist)</b>	<b>p=0.03, OR=2.48 (10-20 yrs)</b>

Sex: Male (ref.), Female  
 Age: >60 yrs (ref.), ≤ 40 yrs, and 40-60 yrs  
 Specialization: Specialist dentist (ref.), General dentist  
 Experience: >20 yrs (ref.), ≤ 10 yrs, 10-20 yrs  
 NS: Non significant

**Table 2:** Multiple logistic regression model for independent variables' effect on burnout measure, by item, among 320 dentists study participants.

than 20 years of professional experience (OR=2.48, p=0.03) to report a burnout score for this item.

Being a general dentist (Specialization), reached a close to statistical significant level in the "I feel disappointed with people" (p=0.08), "I feel hopeless" (p=0.06), and "I feel trapped" (p=0.07) items.

## Discussion

Since its introduction to the scientific community, burnout has been a focus of interest for both researchers and practitioners. Working in a dental practice is recognized to be a physically and mentally demanding activity. One of the possible consequences of chronic occupational stress is professional burnout [1-5]. Burnout is considered a serious risk to the dental profession, causing a threat to the individual dentist and the work force [6-9].

It is recognized that the majority of dentists do not suffer from burnout [5,16]. However, a recent study among dental staff in Northern Ireland, demonstrated that almost 25% of the dentists suffered a high level of burnout [5]. This is an alarming finding when compared with a study in the Netherlands [17], in which only 2.5% of Dutch dentists fell into the highest burnout category, and with a recent UK study [18], where approximately 8% of the responding dentists fell into the highest burnout category.

Very few studies regarding dentists' burnout were published and among dental specialists results are even sparse [16]. In a study of positive engagement and job resources in the dental practice, the researchers suggested to further explore the question whether specialization in dentistry could enhance one's engagement, as from medical specialisms it can be learned that the level of burnout is lower among specialists as compared to general practitioners [16]. Researchers who looked at three types of clinicians, found that general dentists and oral surgeons had the highest levels of burnout and that orthodontists had the lowest levels of burnout [19-21]. Burnout studies demonstrated that lack of career perspective is a major source for burnout risk among dentist [5,9,16,20-22]. Encouragement and support of dental specialty programs is recommended as well as the extension of burnout studies beyond general dental practice to dental specialists and specialization in order to discover whether additional guidelines and professionalism

in a specific area and specialty program can reduce the burnout level [16,23-26].

In our initial survey, 3% of the Israeli dentists fell into the highest burnout category, and these results are in accordance with the limited available global data. Hence, our hypothesis of the Israeli dentists exhibiting greater burnout rates due to organizational profession changes was not verified. In Israel, the dental profession system is gradually changing from complete private financing system to a system with public financing component. The fact that most of the data of burnout in dentistry is from European countries where public financing component of dental service always existed, might explain the point that differences were not revealed.

Nevertheless, our "matrix of effects" presented in Table 2, yield a substantial findings that general dentist were more likely than specialist dentists to report a burnout score for feeling tired, feeling physically weak and sickly, feeling helpless, and feeling worthless and like a failure. We believe that this data is imperative with regards to the important issue of general dental practice and dental specialism. As general dentists are the majority of the dental manpower worldwide, in Israel, only 9% of the dentists are specialist dentists, our findings are relevant to the general dental practice and to the efforts to prevent and cope with professional burnout. Also, as a western world dental professional system that experiencing organizational changes, the study of the Israeli dental workforce provides an important case in point.

Important issues should be addressed with regards to the limitations of the present study. First, a compliance bias should be considered as it might be that burned out dentists were more prone to answer the questionnaire, leading to an overestimation of the phenomena. Second, the different modes of recruiting dentist groups might have an impact on study results, as the specialist dentists were derived from a complete national list and might be considered representative, while the general dentists were not. Third, our study does not indicate differences between dentists working in the public, private, or mixed professional service which might have an impact on burnout levels as described in the literature. Fourth, as there are different ways and instruments to measure the burnout syndrome, caution should be employed when comparing the results of different studies. The ability to work

physically, mentally and emotionally with satisfaction over the years necessitates a knowledge and awareness of burnout. Additionally, it is obvious that a dentist's burnout has also implications to the oral health of the patients. Hence, the problem is not only the care giver problem but also a public health problem.

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