

Burnout and Work Engagement Among Dental Practitioners in Bangalore City: A Cross-Sectional Study

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ABSTRACT

Introduction: Burnout is a job-related stress reaction; a potential hazard for personal, professional lives of dentists. Work Engagement (WE) is the antithesis of Burnout and they can co-exist.

Aim: This study was taken up to know the prevalence of Burnout and WE among dentists in Bangalore, India.

Materials and Methods: In a cross-sectional study, all (n=116) dentists practicing in Bangalore East Zone were randomly selected. A structured, self-administered questionnaire revealing dentists' demographics, practice characteristics, Burnout level [6-item from Maslach Burnout Inventory] and WE [4-item from Utrecht Work Engagement Scale] was used. Ethical clearance and informed consent was obtained. The data was analyzed using SPSS version 15.0.

Results: With a response rate of 58.6%, high burnout was seen in 5.15% dentists. Personal Accomplishment was significantly associated with dentists in older age-group ($p=0.002$), married ($p=0.014$), MDS qualified ($p=0.038$), having long working hours ($p=0.009$) with assistants ($p=0.024$), more years into practice (0.007), travelling more distance from residence ($p=0.021$). Significance was also seen for dedication among dentists with assistants ($p=0.006$), emotional exhaustion among dentist with long working hours ($p=0.009$), and driving own vehicle ($p=0.028$). Finally absorption was found significant in dentists practicing solo.

Conclusion: Higher WE were found but still burnout persisted. Thus, burnout and WE were found to co-exist.

Keywords: Emotional exhaustion, Oral health care professionals, Practice characteristics

INTRODUCTION

Burnout is a particular type of job-related stress reaction. It is a syndrome of emotional exhaustion, depersonalization and reduced personal accomplishment that can occur among individuals who do 'people work' of some kind. It is defined as a response to the chronic emotional strain of dealing extensively with other human beings, particularly when they are troubled or having problems [1]. Thus, burnout is rephrased as an erosion of engagement with the job [2].

As dentists undertake intricate work on patients who are frequently in a highly anxious state, burnout could well be a type of stress response for which they are particularly at risk [1]. Chronic work stress and burnout are recognized as potential hazards for both the professional and personal lives of dentists [3,4]. It appears to be a factor in job turnover, absenteeism and low morale [5]. Studies have shown that personal time, patient and professional relations, work organizations and work load to be critical and often hazardous area of dental practice [6].

How the stress is processed determines how much stress is felt and how close the person is to burnout. Maslach and her colleague, Michael Leiter defined the antithesis of burnout as engagement, which is characterized by energy, involvement and efficacy [7]. The introduction of Work Engagement (WE) has led to a new arena of work related stresses. The focus is on strengths and optimism in work thus directing the emphasis on a 'positive psychology' rather than weaknesses. Thus, engagement is defined as positive, fulfilling, work-related state of mind that is characterized by vigour, dedication and absorption [2].

Burnout and WE are thus two sides of the same coin depicting complete polarized ideologies. However, this empiric relationship between burnout and engagement is of great interest. Burnout forms the negative pole whereas Engagement becomes the positive pole. In positioning burnout and engagement as the end points of one and the same dimension, the assumption is made that the two opposites are complementary. The inference is that every dental

practitioner lies somewhere on the continuum, few might be more burnt out whereas few might process their stressors and might be more engaged in the profession. Thus, it is not unlikely that some level of engagement and burnout can co-exist. This article thrives on finding the co-existence of two polarized concepts of Burnout and WE among dental practitioners.

Many studies have been done on 'burnout of dentists' in India and other countries [8,9]. But none relate the burnout and WE of Indian dentists. Thus, finding the relationship between burnout and WE of dentist in Indian scenario in diversified population would be essential. In India, there are 344 dental colleges, of which 46 are in Karnataka state and 17 itself in Bangalore city [10]. Further, India has one dentist for 10,000 urban and 250,000 rural populations [11,12]. Thus, three fourth of the total number of dentists are clustered in urban areas. So, in a metropolitan city of Bangalore, where commuting, price hike and job-insecurity lead to more exhaustion, a study to know the prevalence of burnout in dentists and it's relation to work engagement need to be sought.

MATERIALS AND METHODS

A cross-sectional study in Bangalore city was conducted to determine the level of Burnout and WE among dental practitioners. The data regarding the practicing dentists in Bangalore city was obtained from The Karnataka Dental Directory, conceived, compiled and published by Info-Dentinova System Private Limited [13]. This directory consisted of 468 registered and practicing dentists. Further, Bangalore city was divided into four zones-East, West, North and South. A lottery method was employed to choose one of these zones. Bangalore east zone was included in the study accordingly which comprised 116 dentists. All dentists (n=116) practicing in this zone and who gave their consent to participate in the study were included in this study.

A structured self-administered questionnaire was used to collect data from the participants. It consists of two sections. First section consists of variables to allow investigation of possible

associations between Burnout and WE subscales. This section consists of questions pertaining to personal characteristics of the dentists (age, gender, marital status and qualification) and practice characteristics of the dentists which inquired about years in practice, number of assistants, working hours, distance of clinic from residence, mode of transport, affiliation to institution and type of practice. The remainder of the questionnaire used valid and reliable psychological inventories: Maslach Burnout Inventory (MBI) to assess Burnout and Utrecht WE Scale (UWES) to assess Work Engagement [7,14].

Six statements from the Maslach Burnout Inventory (MBI) were used to score burnout. Each of these 6 statements relates to one of the three independent subscales of burnout syndrome identified by Maslach. Indicative of burnout are high scores on Emotional Exhaustion (EE), depersonalization (DP) and low scores for Personal Accomplishment (PA). No summative burnout score is made. Four items from the Utrecht Work Engagement Scale were used, which were divided over three subscales and is psychometrically modeled to Maslach Burnout Inventory (MBI): Vigour (VI) one item, Dedication (DE) two items and Absorption (AB) one item. A seven-point Likert answering scale ranging from never (scoring 0) to always/ everyday (scoring=6) was used. A box is provided to left of each statement for the respondents to enter a score depending on how frequently they experience the feeling described in the statement. A key is provided at the top to allow identification of the score to be allotted to each statement. The validation of the final questionnaire was done after a pilot study conducted on 20 dentists who were excluded from the analyses. The value of Cronbach's alpha obtained was 0.87.

Ethical clearance and approval to conduct this research was obtained from the Institutional Ethical Committee. The data was coded and analysed using SPSS version 15.0. Mann Whitney U-Test and Kruskal Wallis Test were undertaken to predict association of Burnout and WE to demographic variables and practice characteristics of the practicing dentists.

RESULTS

Out of the 116 practicing dentists in Bangalore East, 76 of them responded to the questionnaire. Eight questionnaires were incomplete and so unusable for analysis. Thus, total 68 practicing dentists with completely filled questionnaire were included for analysis with a valid response rate of 58.6%.

Mann Whitney test was used to compare Burnout and WE subscales according to their demographic variables and practice

Demographic →	Age		Gender		Marital status		Qualification	
	20-30 y	31above	Male	Female	Unmarried	Married	BDS	MDS
Burnout								
EE	4.51 (±3.23)	5.48 (±4.45)	4.98 (±3.93)	5.00 (±3.86)	4.97 (±3.7)	5.00 (±4.05)	4.69 (±3.43)	5.21 (±4.2)
DP	0.31 (±1.08)	0.12 (±0.42)	0.29 (±0.99)	0.12 (±0.43)	0.31 (±1.17)	0.15 (±0.43)	0.28 (±1.16)	0.18 (±0.45)
PA	3.77 (±1.75)	4.97* (±1.69) p=0.002	4.40 (±1.91)	4.27 (±1.66)	3.66 (±1.93)	4.87* (±1.54) p=0.014	3.90 (±1.74)	4.69* (±1.81) p=0.038
Work Engagement								
VI	5.06 (±1.21)	5.09 (±1.13)	5.02 (±1.2)	5.15 (±1.12)	4.79 (±1.61)	5.28 (±0.6)	5.14 (±0.99)	5.03 (±1.29)
DE	10.69 (±2.43)	10.67 (±2.78)	10.31 (±3.03)	11.27 (±1.51)	10.34 (±3.05)	10.92 (±2.19)	10.72 (±2.25)	10.64 (±2.84)
AB	5.60 (±1.14)	5.75 (±0.71)	5.64 (±1.1)	5.73 (±0.67)	5.48 (±1.35)	5.82 (±0.45)	5.76 (±0.79)	5.62 (±1.07)

[Table/Fig-1]: Comparison of demographics of dentists with Burnout and Work Engagement subscales #.
 • The data in parenthesis are Standard Deviations [Mean (±SD)], • * For significance
 • EE, DP, PA, VI, DE, AB, BDS, MDS = Emotional Exhaustion, Depersonalization, Personal Accomplishment, Vigor, Dedication and Absorption, Bachelor of Dental Surgery, Master of Dental Surgery,
 • #: Mann Whitney U Test

Inventories →	Practice variables ↓	EE	DP	PA	VI	DE	AB	
		Yrs in practice	1- 10	5.23 (±3.97)	0.27 (±0.93)	4.02 (±1.89)	4.98 (±1.29)	10.5 (±2.8)
	11-abv	4.19 (±3.53)	0.06 (±0.25)	5.44* (±0.89)	5.38 (±0.5)	11.25 (±1.69)	5.81 (±0.54)	
p=0.007								
No. of Assistants	Nil	5.52 (±2.99)	0.48 (±1.29)	3.72 (±1.95)	4.64 (±1.66)	9.56 (±3.44)	5.48 (±1.36)	
	1-above	4.67 (±4.31)	0.07 (±0.26)	4.72* (±1.64)	5.33 (±0.64)	11.33* (±1.66)	5.79 (±0.6)	
	p=0.024				p=0.006			
Working hours	1-5 hrs	4.11 (±3.92)	0.29 (±1.04)	4.84* (±1.72)	5.08 (±1.19)	10.95 (±2.51)	5.61 (±1.08)	
	p=0.004							
	6-10 hrs	6.10* (±3.58)	0.13 (±0.43)	3.73 (±1.76)	5.07 (±1.14)	10.33 (±2.68)	5.77 (±0.77)	
p=0.009								
Distance from residence	0-5 km	5.16 (±4.32)	0.27 (±0.97)	4.00 (±1.89)	5.07 (±1.21)	10.7 (±2.55)	5.7 (±0.76)	
	6km-above	4.67 (±2.94)	0.13 (±0.45)	5.00* (±1.47)	5.08 (±1.10)	10.63 (±2.72)	5.63 (±1.24)	
	p=0.021							
Mode of transport	Own Veh.	5.59* (±4.04)	0.14 (±0.45)	4.43 (±1.89)	5.20 (±1.04)	10.84 (±2.41)	5.78 (±0.61)	
	p=0.028							
	Pub. Trans	3.18 (±2.67)	0.47 (±1.46)	4.12 (±1.58)	4.71 (±1.45)	10.18 (±3.09)	5.35 (±1.58)	
Affiliation to institution	Yes	5.31 (±4.38)	0.13 (±0.34)	4.66 (±1.89)	4.94 (±1.32)	10.53 (±3.07)	5.56 (±1.16)	
	No	4.69 (±3.4)	0.31 (±1.09)	4.08 (±1.71)	5.19 (±1.01)	10.81 (±2.11)	5.78 (±0.72)	

[Table/Fig-2]: Comparison of practice characteristics of dentists with Burnout and Work Engagement subscales#.
 • Data in parenthesis represents Standard Deviation (Mean (± SD))
 • * for significance • #: Mann Whitney U Test
 • EE, DP, PA, VI, DE, AB = Emotional Exhaustion, Depersonalization, Personal Accomplishment, Vigor, Dedication and Absorption.

characteristics. When Burnout and WE was evaluated for the demographic variables considered in the study [Table/Fig-1].

Inventories →		EE	DP	PA	VI	DE	AB
Practice variables ↓							
Type of practice	Solo	4.83	0.21	4.72	5.31	11.03	5.90*
		(±4.37)	(±0.56)	(±1.58)	(±0.66)	(±2.32)	(±0.41)
							p=0.018
	Group	5.39	0.25	3.89	4.93	10.43	5.68
		(±3.61)	(±1.14)	(±1.95)	(±1.46)	(±2.63)	(±0.86)
	Consultation	4.36	0.18	4.55	4.82	10.36	5.09
		(±3.29)	(±0.4)	(±1.92)	(±1.33)	(±3.23)	(±1.76)

[Table/Fig-3]: Comparison of 'Type of Practice' with Burnout and Work Engagement subscales#.

- Data in parenthesis represents Standard Deviation [Mean (± SD)]
- * for significance
- EE, DP, PA, VI, DE, AB = Emotional Exhaustion, Depersonalization, Personal Accomplishment, Vigor, Dedication and Absorption
- #: Kruskal Wallis Test

Personal Accomplishment was found significantly higher among elder age groups ($p=0.002$), married ($p=0.014$) and highly qualified ($p=0.038$) dental practitioners.

For practicing characteristics of the dentists [Table/Fig-2], Personal Accomplishment was found significant for dentists practicing for 11 years and more ($p=0.007$), with more than one assistants in clinic ($p=0.024$), with lesser working hours ($p=0.004$) and with more distance to travel to work ($p=0.021$). Dedication ($p=0.006$) was found statistically significant among dentist having one or more assistants for their clinics. However, Emotional Exhaustion was significant among dentist working for longer hours ($p=0.009$) and among dentist who commuted on their own vehicle ($p=0.028$).

Kruskal-Wallis test was employed to analyse and compare the Burnout and Work Engagement subscales according to the type of practice [Table/Fig-3]. Statistical significance was obtained only for the WE subscale of Absorption ($p=0.018$) wherein Absorption

was higher in dentist with Solo practice followed by Group practice and Consultations respectively.

DISCUSSION

In the present study, the instruments used and the methodology applied were relevant to achieve the aim of the study. The self-structured questionnaire proved as a reliable instrument in collecting the relevant demographic variables and practice characteristics data which were proposed to be closely related to the level of burnout and/or WE [1,6,15]. Owing to the time constrains, the entire MBI (22 item questionnaire) and UWES (17 item questionnaire) were not used. Six questions from MBI and four questions from UWES were relevant and suitable for the present study. According to the models proposed by Te Brake [14], Personal Accomplishment closely relates to WE, whereas Emotional Exhaustion and Depersonalization are the core Burnout subscales. Therefore, the present study included five questions for Emotional Exhaustion and Depersonalization and five questions on Personal Accomplishment, Vigour, Absorption, and Dedication since they collectively evaluate WE.

Response rate in previous reports about burnout in dental practitioners ranges from 77% [16] to 53% [17]. So the present study response rate (58.6%) is comparable. This response rate is considered valid due to the intriguing nature of the questions and the time taken by the dentists to answer them in their clinical working hours.

The present study indicated overall higher feelings of Personal Accomplishments when compared to individual demographic and practice characteristics variable; similar to previous studies [14-16,18]. [Table/Fig-4] tabulates the findings of the previous study and the current study and the possible explanations for the obtained results.

Variables	Authors (Years)	Findings	Current study
Age	Brand & Chalmers (1990) [19]	The study was done among older ($n=36$) and younger dentists ($n=41$) in private practice to evaluate the stress patterns to a number of situations and events. It was found out that favourable adaptation and low level of stress were evident in most of the older dentist (over 54 years).	Personal Accomplishment was found significant in older age group of 31 years and above as compared to the younger age group [20-30 years] similar to other studies. The plausible explanation for such inference matches with the studies previously done. But few studies have found Burnout Syndrome, especially Emotional Exhaustion 8 to be higher in older age group. Thus, further studies needs to be conducted to establish an exact relation between age and burnout.
	Osborne & Croucher (1994) [1]	A study among 340 GDPs in South East England was conducted in 1992. It was found that due to increased socialization skills with age, more skillful conversation, experience facilitates early diagnosis which allows more personal contact contributed to a higher sense of personal accomplishment among older aged dentists.	
	Alina Puriene et al., (2008) [18]	A postal questionnaire survey was mailed to 2449 licensed dentists registered with the Lithuanian Dental Association. It was found that increasing age significantly reduced the possibility of nervousness or depression and increased the possibility of being satisfied with dental practice.	
Marital status	Osborne & Croucher (1994) [1]	A Study among 340 GDPs in South East England was conducted in 1992. The study suggested that involvement with spouse and children made married people more experienced in dealing with personal problems.	The results of the current study also found married dentists more personally accomplished as compared to unmarried dentist. This could be due to the completion of his responsibilities at his personal and family fronts that a married dentist is more accomplished emotionally at his work and thus is efficient to tackle the stressors at work place and faces lesser levels of burnout.
	Gorter RC et. al (1998) [16]	A literature search was done to describe the work stress or burnout among dental hygienists. The study concluded that married dentist felt settled in his personal life due to the social support he receives at home.	
Qualification	Osborne & Croucher (1994) [1]	A Study among 340 GDPs in South East England was conducted in 1992 which concluded that achieving a post graduate qualification may itself be important, the benefits of those qualifications and the wider and more diverse professional opportunities leads to lesser Burnout.	The current study also found significant results for Personal Accomplishment to be higher among dentists with higher qualification. The reasons for such results appear to be similar to the previous studies.
	Gorter RC et al., (1998) [16]	In a literature search it was seen that lack of career perspectives in less qualified dentists was found to be the most crucial aspect in the development of burnout.	
Years into practice	Daily reporter (2011) [20]	In a report stating few previous studies, it was found that a worker with more than 16 years' service in the same place of work is 5 times more at risk of developing Burnout Syndrome than another worker with a service record of less than four years. Thus, the number of years in practice have a significant impact on the psychology of dentists.	Conversely, the present study has found significant Personal Accomplishment in the senior group of dentists who have practiced for more than 11 years. This can be attributed to the concept that accomplishment increases with increased years of successful practice.
Number of assistants	David C. Holmes et al., (2009) [21]	A study conducted among fourth year dental students practicing four-handed model and solo unassisted model were compared for clinical productivity. Personal Accomplishment in dentist employing an assistant would be higher due to the fact that the clinical productivity increases with assisted practice.	Personal Accomplishment and Dedication was found significant in the present study since a dentist employing an assistant can entirely concentrate on the operatory. And the health education, oral hygiene instruction, record keeping etc. can be handled by the auxiliaries.

Number of hours in practice	Osborne & Croucher (1994) [1]	A Study among 340 GDPs in South East England was conducted in 1992 and was found that the continuous emotional load caused due to the grievances of pain heard from the patient makes a dentist emotionally drained.	Contrary, Personal Accomplishment was found to be significant in those dentists who worked for shorter duration. This may be due to the satisfaction earned after treating patients in pain with additional lesser stress in personal and psychological front. Complementary to the increased Emotional Exhaustion in dentists working for longer hours, Personal Accomplishment is more in dentists working for lesser hours.
	Alina Puriene et al., (2008) [18]	A postal questionnaire survey was mailed to 2449 licensed dentists registered with the Lithuanian Dental Association. It was found that increasing working hours increased the risk of burnout anxiety and loneliness.	
	Jose-Vicente Rios-Santos et al., (2010) [22]	In a study done among 284 periodontology practitioners, it was discussed that more hours in practice might lead to loss of motivation due to repetitive tasks and monotony of work shift.	
Type of practice	Osborne & Croucher (1994) [1]	Solo practice made significant contribution in achieving Personal Accomplishment among 340 GDPs in South East England due to the income autonomy and the match between technical aspiration and practice outcomes.	The current study found Absorption significantly higher among Solo Practitioners. This is in line with the study done by Osborne and Croucher [1]. This could be due to the freedom a dentist possesses over their working conditions which can reduce stress levels.
	Gorter RC et al., (1998) [16]	Group practice reduces the chances of Burnout syndrome similar to studies done by Myers HL and Myers LB, 2004 [23] and Gorter RC, 2005 [24]. Factor like organization of work was considered as a preventive factor for Burnout trait in a literature search done by Gorter RC et al.	

[Table/Fig-4]: Highlightes the findings of the previous studies reported in the literature.

Distance travelled from residence and the modes of transport were entirely new practice characteristics parameters studied in the present study. Personal Accomplishment was higher in dentists who travelled 6-10 km from residence to clinic as compared to those who travelled less. This can be due to the fact that dentists who travel long distance make sure about the treatment outcomes. They are more planned regarding their appointment schedules. And thus, completion of work gives them more satisfaction and sense of accomplishment. Further, dentist who drove in their own vehicle were more emotionally exhausted as compared to those using public transport for commuting from residence to clinic. This can be due to the heavy traffic on Bangalore roads at peak hours which are also the usual clinic and consultation times. The continuous strain of driving in traffic and bad roads drains the dentists. And the additional attending of the pain and suffering of the patients increases the emotional load on dentist.

In early definitions [7], Engagement was defined as being opposite of Burnout. Thus, looking at the sphere of Burnout and WE it appears that engagement is indicated by a combination of low levels of Emotional Exhaustion and Depersonalization and high levels of Personal Accomplishment. So, there is a possibility that the two opposites are complementary. However, someone who is not burned out cannot automatically be considered engaged (or vice versa) and it is not unlikely that some level of engagement and burnout can co-exist. Thus, it is possible that someone who indicates experiencing a negative state 'once a week', experiences feelings of joy in the same week. In the present study, such situation is seen for the practice characteristic of working hours which was found significant for Emotional Exhaustion (core Burnout subscale) and Personal Accomplishment (subscale that measures WE). The present study findings indicate the presence of Burnout; although to a lower extent. Early signs of Emotional Exhaustion, as well as feelings of reduced Personal Accomplishment, should be taken as early warnings of Burnout risk [25].

LIMITATION

It is accepted that the present study has limitations due to the relatively small number of participants, which have consequences for the generalisability of the outcomes. Further the information collected is a self reported data. Hence, there is higher propensity for social desirability bias. A longitudinal study using physiological measures (example 24 hour blood pressure monitoring) and biological measure (example saliva) of stress cortisol would be more inferential. The current study is a snapshot of the relation between Burnout and WE and there potential co-existence.

CONCLUSION

Research on Burnout among dentists serves a scientific goal of providing information on the prevalence but also serves the goal

of providing information on prevention. Further research in other occupation and research setting is needed to shed more light on these findings and possibly replicate and strengthen them. Increased attention to the positive side of work experience will inspire a closer examination of the important correlates to Work Engagement. In the same vein, research on Work Engagement can yield practical implications of the construct of Work Engagement.

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