

# PREDICTORS OF JOB SATISFACTION AMONG PRACTICING DENTISTS AT HOSPITALS IN SUEZ CANAL AREA, EGYPT

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## Abstract

**Objectives:** The aim of this study was to measure the level of job satisfaction and the work factors associated with it among practicing dentists in Suez Canal governorates hospitals. **Materials and Methods:** Four hundred forty nine dentists were contacted, and 277 agreed to participate (response rate 61.7%). They were surveyed through a self-administered questionnaire based on items from the Dentist Satisfaction Survey (DSS) questionnaire, which included 29 questions covering items related to the overall satisfaction level and work environment factors; answers were reported on 5 point Likert scale. **Results:** The mean score of overall job satisfaction among studied dentists was 3.24 out of 5. As regards work environment factors, the most satisfying aspect was patient relations (3.71) and the least was personal time (2.71). Multiple regression analysis model verified that patient relations, value of income, personal time, staff, and training opportunities accounted for 36% of variation in overall job satisfaction score. The majority of the variance was explained by patient relations. **Conclusions:** This study suggests that patient relations, perception of income, personal time, staff, and specialty training are important work environment factors for job satisfaction among the dentists. These findings might help policy makers to design plans to increase the level of job satisfaction among dentists at their workplaces.

## Key words:

Dentists, Work environment factors, Job satisfaction

## INTRODUCTION

Dentists represent one of the most stressful health professions [1–6]. To encourage dentists to provide their patients with high level of dental care, it is important to assess dentists' job satisfaction and understand how work environment factors impact it.

Studies have demonstrated that the job satisfaction of dentists was correlated with many work environment factors. One study reported that personal life, clinic location, and years in practice were positively associated with a high degree of job satisfaction among dentists [7]. Another study reported an increase in dentists' job satisfaction associated

with the increase in average income [8]. Patient relations and the number of years in practice were found to affect dentists' job satisfaction in other studies [9,10]. Identification of work environment factors related to job satisfaction could lead to a strategy and policy to provide a better work environment for dentists. This environment would enhance the improvement of patient care. As a result, the entire dental care system would benefit.

The demand for appropriate health care has gradually increased in Egypt, and such growth should be based on appropriate work conditions for health care providers to ensure the quality of care. Therefore, assessing the work

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conditions among different categories of health care providers is very important.

The purpose of this study was to measure the level and predicting factors of job satisfaction among dentists and to explore the work environment factors associated with it.

## SUBJECTS AND METHODS

The study population consisted of all practicing dentists at hospitals in Suez Canal area, which includes the cities of Ismailia, Suez and Port Said. A sampling frame was

not feasible because the lists of the registered dentists at the corresponding local syndicates in each governorate were not completely accessible, available or updated. So, visiting dental clinics at different hospitals was a convenient way to contact dentists who were actually practicing (one year work experience was the only criterion to be eligible for the study). During a six month period (Feb to July 2010), a total of 449 dentists were approached through their actual workplaces; those dentists were affiliated to Suez Canal University Hospital, faculty of dentistry clinics, general and public hospitals,

**Table 1.** Dentist Satisfaction Survey (DSS) domain factors/items

Domain/factors	Items
Overall satisfaction	<ul style="list-style-type: none"> <li>- Dentistry fulfils my current career aspiration</li> <li>- I wish I could drop my job to do something else</li> <li>- I appear more satisfied with my job than I really am</li> <li>- Knowing what I know now, I would make the same decision to go into dentistry</li> <li>- Dentistry is the place where I can make my best contribution</li> <li>- Overall, I am extremely satisfied with my career</li> <li>- I feel trapped in my current position</li> </ul>
Patient relationship	<ul style="list-style-type: none"> <li>- Relating to patients is very frustrating for me</li> <li>- I do not enjoy interacting with my patients</li> <li>- The quality of interpersonal care I provide is very high</li> <li>- I enjoy helping patients</li> </ul>
Delivery of care	<ul style="list-style-type: none"> <li>- I am skilled at dealing with my patients' dental problems</li> <li>- I lack opportunities to provide quality care</li> <li>- I am extremely pleased with the technical quality of my work</li> </ul>
Staff cooperation	<ul style="list-style-type: none"> <li>- The quality of my auxiliary personnel is lacking</li> <li>- The work performance of my auxiliaries is outstanding</li> <li>- The office staff works well together</li> </ul>
Income value	<ul style="list-style-type: none"> <li>- My income allows me to provide very well for my family</li> <li>- Compared to other dentists my total earnings are much lower than I desired</li> <li>- The income that I receive from my practice is most satisfactory for my needs</li> <li>- My income is not nearly as high as that of other dentists</li> <li>- My income compares favourably to that of other dentists</li> </ul>
Professional time	<ul style="list-style-type: none"> <li>- I have very little time to keep abreast of advances in the field of dentistry</li> <li>- I have enough time to improve my clinical skills</li> <li>- I have sufficient time for professional contracts with colleagues</li> <li>- I have very limited opportunity to discuss difficult cases with colleagues</li> </ul>
Personal time	<ul style="list-style-type: none"> <li>- I have enough time available for my personal life</li> <li>- I have sufficient time available for leisure activity</li> <li>- I have too little time available for leisure</li> </ul>

Insurance hospital and Suez Canal authority hospitals. An informed consent was obtained from each participant before introducing the questionnaire; confidentiality and anonymity were maintained according to the regulations mandated by Research Ethics Committee of Faculty of Medicine, Suez Canal University, in accordance with the Declaration of Helsinki. In order to assess any non-response bias [those who were approached and refused to complete the questionnaire], personal and basic occupational information were obtained from all non-participants through personal interview.

The survey questionnaire was developed based on the Dentist Satisfaction Survey (DSS) [11]. The questionnaire consists of 29 items: seven items to measure the overall job satisfaction and 22 items related to six work environment factors (Table 1). The work environment factors included perception of income, personal time, professional time, staff, patient relations, and delivery of care. All items were measured on a 5-point Likert scale: 1 – strongly disagree, 2 – disagree, 3 – neutral, 4 – agree, and 5 – strongly agree. The questionnaire also contained data about the personal and occupational characteristics of the subjects including gender, age, education, advanced training status, duration of practice, hours per week, and number of employed co-workers. DSS is a practical, reliable, and valid measure of dentists' job satisfaction. Internal consistency reliability coefficients for all facet subscales and the overall job satisfaction scale ranged from 0.60–0.92 [11]. The scores of items fall into three categories based on the mean score according to Roth et al., 2003 [12] as follows: dissatisfied (1.0–2.5), neutral ( $> 2.5 \leq 3.5$ ), and satisfied (3.5–5.0).

The scores of items of both the overall job satisfaction and the domains of different environment factors were described in tables and mean  $\pm$  standard error. Different qualitative factors, e.g. gender, educational levels, were tested for significance between the two groups (satisfied vs. dissatisfied) by Chi-square test.

A backward stepwise multiple regression analysis was used to identify the independent predictors (personal – occupational – work environment factors) of the overall job satisfaction and the best-fitting model was presented as denoted by  $R^2$ .

Results were considered statistically significant if  $p$  value  $< 0.05$ . All statistical procedures were done by Sigma Stat statistical package software version 3.5.

## RESULTS

Among the 449 contacted subjects, 277 answered the questionnaire, resulting in response rate of 61.7%. The causes of refusal to participate were disinterest and lack of time. Eighty two percent of the participants were males and 18% females. The majority were aged 36–45 years (56%), and 47% had a master or doctorate degree. About 25% of participants had  $< 6$  years of work experience, 32% between 6–10 years, 23% between 11–15 years, and 20% had 16 years of experience or more. As presented in Table 2, the majority of dentists reported working 41–50 h per week (66.8%), and employed less than three dental co-workers (62%). There were no statistically significant differences regarding any of the background characteristics between participants and non-participants.

The majority of the respondents (51.4%) expressed neutral view of their job satisfaction (Figure 1). Only 13% of dentists reported dissatisfaction with their job, whereas about 36% reported satisfaction. As regards work environment factors, patient relations had the highest mean score (3.71), and 78% of the participants were satisfied with their relationships with patients. By contrast, dentists showed the least satisfaction with time-related factors (personal and professional); personal time had the lowest mean score (2.71). As for perception of the value of income,

**Table 2.** Socio-demographic and occupational characteristics of the dentists (participants vs. non-participants)

Characteristics	Participants (N = 277) n (%)	Non-participants (N = 172) n (%)	p
Gender			
male	227 (81.9)	147 (85.5)	0.410
female	50 (18.1)	25 (14.5)	–
Age (years)			
≤ 35	56 (20.2)	39 (22.7)	0.748
36–45	155 (56.0)	91 (52.9)	–
46–55	49 (17.7)	28 (16.3)	–
≥ 56	17 (6.1)	14 (8.1)	–
Education			
bachelor	146 (52.7)	93 (54.1)	0.870
master	49 (17.7)	32 (18.6)	–
doctorate	82 (29.6)	47 (27.3)	–
Duration of practice (years)			
≤ 5	67 (24.2)	41 (23.8)	0.998
6–10	92 (33.2)	57 (33.1)	–
11–15	64 (23.1)	41 (23.8)	–
≥ 16	54 (19.5)	33 (19.3)	–
Training opportunities			
no	178 (64.3)	119 (69.2)	0.332
yes	99 (35.7)	53 (30.8)	–
Weekly working (hours)			
≤ 40	46 (16.6)	–	–
41–50	185 (66.8)	–	–
≥ 51	46 (16.6)	–	–
Co-workers (n)			
≤ 2	172 (62.1)	–	–
3–5	96 (34.1)	–	–
≥ 6	9 (3.2)	–	–

the majority of dentists expressed neutral satisfaction, while 23.5% were not satisfied (Table 3).

The participants' responses to both the overall job satisfaction and the work environment factors were categorized into two groups, as satisfied and dissatisfied (that included both dissatisfied and neutral). Both groups of

overall job satisfaction (satisfied vs. dissatisfied) were compared as regards socio-demographic and occupational factors (Table 4) and different work environment factors (Table 5). As presented in Table 3, there is a statistically significant difference between satisfied and dissatisfied dentists as regards gender, age groups, and

**Table 3.** Work environment factors (score and satisfaction level) among the studied dentists

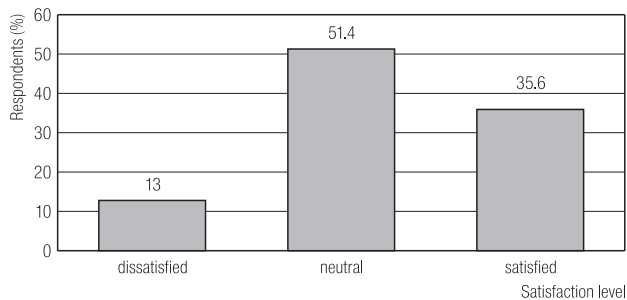
Work factors	Satisfaction score M±SE max = 5	Level of satisfaction n (%)		
		satisfied	neutral	dissatisfied
Patient relationship	3.71±0.12	216 (78.0)	58 (20.9)	3 (1.1)
Delivery of care	3.14±0.04	119 (42.8)	135 (48.7)	23 (8.5)
Staff cooperation	3.17±0.13	77 (27.8)	146 (52.7)	54 (19.5)
Income value	3.09±0.03	80 (28.8)	132 (47.7)	65 (23.5)
Professional time	2.92±0.02	72 (26.0)	108 (38.9)	97 (35.1)
Personal time	2.71±0.03	55 (19.8)	105 (37.9)	117 (42.3)

M – mean, SE – standard error.

**Table 4.** Overall job satisfaction [satisfied vs. dissatisfied] and socio-demographic and occupational characteristics among the studied dentists

Characteristics	Overall job satisfaction		p
	satisfied (N = 99) n (%)	dissatisfied (N = 178) n (%)	
Gender			
male	65 (65.7)	162 (91.1)	0.0001*
female	34 (34.3)	16 (8.9)	
Age (years)			
≤ 40	59 (59.6)	128 (71.9)	0.036*
> 40	40 (40.4)	50 (28.1)	
Education:			
bachelor	50 (50.5)	96 (53.9)	0.584
master & doctorate	49 (49.5)	82 (46.1)	
Duration of practice (years)			
≤ 10	59 (59.6)	100 (56.2)	0.581
> 10	40 (40.4)	78 (43.8)	
Training opportunities			
no	20 (20.2)	158 (88.8)	0.0001*
yes	79 (79.8)	20 (11.2)	
Weekly working (hours)			
≤ 40	18 (18.2)	28 (15.7)	0.599
> 40	81 (81.8)	150 (84.3)	
Co-workers (hours)			
≤ 2	69 (69.7)	103 (57.9)	0.051
> 2	30 (30.3)	75 (42.1)	

\* Statistically significant at p < 0.05.



Overall satisfaction score ( $3.24 \pm 0.03$ ).

**Fig. 1.** Job satisfaction levels among the studied dentists

training opportunities ( $p < 0.05$ ). Work environment factors showed a statistically significant relationship between satisfied and dissatisfied dentists except professional time ( $p = 0.222$ ).

The effect of personal, and occupational characteristics and work environment factors on overall job satisfaction was evaluated by a stepwise multiple regression analysis and the best fitting model is presented in Table 6. Patient relation was the most important predictor of overall job satisfaction after adjusting for other variables in the regression model. Other significant predictors included perception of income, personal time, staff, and training. The final model accounted for approximately 36% of the total variance in overall job satisfaction. The majority of the variance (24%) was explained by patient relations, and the rest of the variance (11%) was explained by all other four factors as shown by the increments in r-square values.

**Table 5.** Overall job satisfaction [satisfied vs. dissatisfied] and different work environment factors among the studied dentists

Work Environment Factors	Overall job satisfaction		p
	satisfied (N = 99) n (%)	dissatisfied (N = 178) n (%)	
Patient relationship			
satisfied	68 (68.7)	148 (83.1)	0.005*
dissatisfied	31 (31.3)	30 (16.9)	
Delivery of care			
satisfied	52 (52.5)	67 (37.6)	0.016*
dissatisfied	47 (47.5)	111 (62.4)	
Staff cooperation			
satisfied	71 (71.7)	6 (3.4)	0.0001*
dissatisfied	28 (28.3)	172 (96.6)	
Income value			
satisfied	40 (40.4)	40 (22.5)	0.001*
dissatisfied	59 (59.6)	138 (77.5)	
Professional time			
satisfied	30 (30.3)	42 (23.6)	0.222
dissatisfied	69 (69.7)	136 (76.4)	
Personal time			
satisfied	33 (33.3)	22 (12.4)	0.0001*
dissatisfied	66 (66.7)	156 (87.6)	

\* Statistically significant at  $p < 0.05$ .

**Table 6.** Multiple regression model for predicting factors of the overall job satisfaction

Variable	Beta	Standard error	p	Standardized Beta
Patient relations	0.47	0.05	0.001	0.33
Income value	0.27	0.03	0.001	0.26
Personal time	0.14	0.04	0.001	0.16
Staff cooperation	0.11	0.05	0.007	0.10
Training opportunities	0.11	0.04	0.020	0.09

Model ANOVA:  $F = 64.11$ .  $p < 0.001$ . Adjusted  $R^2 = 0.36$ .

## DISCUSSION

The main goal of the present study was to measure the level of job satisfaction among dentists and to identify its predictors. The mean overall job satisfaction score of dentists was 3.2 out of 5. This is similar to the mean score of overall job satisfaction, measured by the DSS method, reported from California general dental practitioners (mean = 63 of 100) [13], but it is lower than that of Canadian orthodontists (mean = 4.0 of 5) [14]. When participants were classified into three categories (satisfied, neutral, and dissatisfied) based on the questionnaire score, only 35.6% of studied dentists were satisfied with their job, which is lower than previous reports in other countries. Roth et al. [12] reported that 80% of Canadian orthodontists were satisfied. Logan et al. [13] showed that 60% of practicing Iowa dentists were satisfied, and Shugars et al. [14] found that 50% of California general dentists were satisfied with their job. Poor time-management and related factors may explain the relatively low level of overall job satisfaction among dentists.

Our study found that the majority of dentists were discontented with the amount of personal and professional time. This may result from the relatively longer working hours. Studied dentists worked 48 h per week in their clinic, while general practitioners in California worked only 34 h per week [14], and dentists in Kentucky reported a mean working time of 34.4 h per week [10].

The second goal of this study was to explore the key work environment factors associated with overall job satisfaction among dentists. In the univariate analysis between satisfied and dissatisfied dentists, gender differences highlighted that women are more satisfied about their jobs, this may be due to that female dentists work less hours than males and also in the present sample, female dentists are far less in number than males, which might be responsible for that observed statistical difference between the two groups. Also, 40-year and younger dentists were less satisfied than the older ones, which may be due to that during this age category dentists are in the peak of their career demands and find themselves under pressure of sustaining and building their practice [15]. In both categories of factors (occupational/socio-demographic) and (work environments factor domains), it can be concluded that practice-related factors, namely, duration of practice, professional time, and working hours do not affect the overall job satisfaction.

The personal, occupational characteristics and work environment factors were entered into a regression model in order to explain overall job satisfaction. Multiple regression analysis model identified the associated factors, including patient relations, perception of the value of income, personal time, staff, and training opportunities. The regression model suggested that dentists were more satisfied with their job when they had better relationships with their patients. To a lesser degree, dentists'

job satisfaction level was higher when they were more satisfied with their income level, personal time issue and the staff. Dentists who had advanced training opportunities showed higher job satisfaction after controlling for other factors in the regression model. The factor of patient relations has similarly been reported as a major factor related to job satisfaction in dentistry [13,14]. Although there are some reports of a relationship between an increasing age and higher job satisfaction [16,17], age was not a significant factor and thus was not included in the final model.

Several limitations must be considered when interpreting the findings of the current study. Firstly, this survey was based on a cross-sectional design that could not allow the determination of the temporality for any identified association. Thus prospective and longitudinal studies are needed to examine the change of work environment factors on job satisfaction in a future research. Secondly, the final model including five characteristics explained only about one-third of the variation in overall job satisfaction. This means that the remaining two-thirds of the variation would be explained by factors that were not captured with the study tool. Efforts to develop better measures of job satisfaction and more objective measures of work environment factors are thus needed. Finally, it is possible that satisfaction scores were overestimated. While there were no significant differences in demographic characteristics between participants and non-participants, it is conceivable that non-participants might be those with lower job satisfaction level.

In conclusion, the present work suggests that dentists in the study setting seem to experience less job satisfaction than their colleagues in other countries. Patient relations, perception of income, personal time, staff, and training were important work environment factors for job satisfaction among studied dentists. Of these factors, the patient relations factor was the strongest predictor of overall job satisfaction.

The multivariate model explained only 36% of the variation in the overall job satisfaction; further studies are needed to identify other factors that might be helpful in explaining that variation, like level of job stress, quality of life and general perception of health status, which were not addressed in the present study. In addition, regular surveys of job satisfaction would be necessary in order to improve the working environment of dentists.

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