

Does dental anxiety influence oral health-related quality of life? Observations from a cross-sectional study among adults in Udaipur district, India

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Abstract: We investigated the effect of dental anxiety and dental visiting habits, as well as various socio-demographic variables, on oral health-related quality of life (OHQoL) among subjects aged 15-54 years living in Udaipur district, India. The total sample size was 1235 individuals and a stratified cluster sampling procedure was employed to collect the representative sample. Dental anxiety and oral health-related quality of life were assessed using the Corah Dental anxiety scale and the OHQoL-UK(W)[©] questionnaire, respectively. The majority of the female and older individuals showed higher dental anxiety than their male and younger counterparts. Stepwise linear regression analysis revealed that the best predictors of dental anxiety were, in descending order, occupation, gender and education, which provided a variance of 10.3%. Females were more likely to have poor OHQoL than males. Dental anxiety had a significant influence on OHQoL, people with high dental anxiety being 2.34 times more likely to present poor OHQoL than those having low anxiety. Furthermore, it was found that those who never visited a dentist had an odds ratio of 1.62 for poor OHQoL relative to those who had visited a dentist within the last 12 months. Dental anxiety differed significantly with age and dental visiting practices, and had a significant impact on oral health-related quality of life after

controlling for other variables. (J Oral Sci 51, 245-254, 2009)

Keywords: oral health; quality of life; dental anxiety; socio-demographic variables; cross-sectional study.

Introduction

There is a lack of information on the prevalence of dental anxiety and oral health-related quality of life (OHQoL), and the influence that dental anxiety exerts on the OHQoL in developing countries.

Despite the technological advances made in modern dentistry, anxiety about dental treatment and fear of pain associated with it remain widespread (1). Therefore, it is essential to assess dental anxiety among the population, as this causes management problems during dental treatment. Moreover, previous studies have suggested that dental anxiety significantly influences the impact of oral health on quality of life. However, an OHQoL approach benefits the clinical practitioner when selecting treatment and monitoring patient outcomes, and is also useful to researchers in identifying determinants of health, tracking levels of health risk factors and determining the use of services in the population. It can also benefit policy makers in helping to establish programs and institutional priorities, policies and funding decisions.

A wide range of questionnaires are being used to describe dental fear, the most commonly used being the Corah Dental Anxiety Scale (DAS) and the Dental Fear Scale (DFS). The DAS is considered to be a simple method for

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quantitative assessment, and is a valid and reliable instrument (2). With the growing recognition of the importance of quality of life measurement in health care as a means of describing and monitoring the health of populations and individuals, several indicators have been developed for use in dentistry (3). Previously, measures for quantifying how oral health affects quality of life focused predominantly on negative effects, for example the oral health impact profile (OHIP) and oral impacts on daily performance (OIDP) (4).

Recently, Bedi and McGrath (5) have suggested assessing the negative impacts of dental disease on quality of life to appreciate the very positive contribution that healthy dentition makes to everyday life, and subsequently introduced the UK Oral Health-related Quality of Life Instrument, weighed version (OHQoL-UK(W)[®]). Doebling and Rowe identified five impacts of dental anxiety on daily living: physiological, cognitive, behavioral, health and social (6). Dental anxiety partially limits or completely prevents utilization of oral healthcare services (7) and it increases the prevalence of dental disease (8). Dentally anxious individuals tend to avoid regular and conventional care, and thus rely on self-care, emergency services and traditional or parallel remedies to relieve dental pain (9). Levels of dental anxiety have been shown to be associated with poor clinical oral health status. The OHQoL-UK(W)[®] and other oral health-related quality of life instruments have been used to explore the relationship between socio-demographic factors in different populations in developing countries including Thailand (5), Tanzania (10), Syria, Egypt, Saudi Arabia (11) and Nigeria (12).

The present study aimed to assess the effect of dental anxiety and dental visiting habits as well as various sociodemographic variables on oral health-related quality of life among subjects aged 15-54 yr living in Udaipur district, India.

Materials and Methods

Ethical approval for carrying out the present cross-sectional survey was obtained from the research ethics committee of Darshan Dental College and Hospital, Udaipur, India, and informed consent was obtained from each subject.

The study area in Udaipur district, India, covers an area of 17,279 sq. km with a population of 2.63 million; rural residents comprise a major part of the population. The district is rich in mineral resources and home for many cottage industries. The target population for the present study comprised individuals aged 15 to 54 years living in Udaipur district. A stratified cluster sampling procedure was employed to collect the representative sample. One

village was selected randomly from each of the seven subdivisions of Udaipur district, and all the houses present in the village were included. The study period extended from January 2008 to July 2008 and was conducted during holidays to collect the representative sample. The sample selected accounted for 1,324 individuals, among whom 1,235 participated in the study. The inclusion criteria specified that individuals had to be aged 15 - 54 years and present in their houses during the days of the survey. Eighty-nine subjects who were uncooperative and those who filled incomplete questionnaires were excluded.

The purpose of the study was explained to each participant and information was retrieved using a questionnaire. The questionnaire consisted of two parts: the first part was composed of items on socio-demographic characteristics such as age, gender, occupation, annual income and education level along with dental visiting habits, whereas the second part included the dental anxiety scale and OHQoL-UK(W)[®] questions. The questionnaire was written in English and translated into the local language, Hindi, which was again back-translated to English and found to be valid. Besides the questionnaire assessment, each subject was examined for the number of teeth present by a researcher (SK), who was assisted by a recorder.

Annual income of each individual was recorded as units of income; one unit corresponded to the average per capita income for India (587.6 USD). Level of education was classified as primary (completed at least five years of education) and secondary (more than 5 years of education). Dental anxiety was measured using the DAS, which is a four-item instrument inquiring how respondents would feel "if they had to go to the dentist tomorrow", "waiting at the dentist office", "waiting while he gets the drill ready" and "in the dentist's chair to have teeth cleaned". Each item has five scores ranging from not anxious to extremely anxious in ascending order from one to five. Thus each question carries a possible maximum score of five with a total possible maximum score of 20 for the entire scale. Thus, the final dental anxiety scores for each individual range from 4 to 20 (3).

The OHQoL-UK(W)[®] questionnaire (McGrath and Bedi) was used for assessment of OHQoL. This consists of 16 questions which take into account both the effect and impact of oral health on quality of life (13). The effect of oral health on quality of life has three domains: physical containing six items, and social and psychological consisting of five items each. All the respondents were made to understand each question along with the effect and impact related to it. Each of the proposed 16 items were scored first on effect, with responses ranging from a bad to good effect on quality of life. Later the participants were

asked to rate the “impact” of each “effect”. The impact of each effect was recorded under five categories: none, little, moderate, great and extreme. The score for each effect ranged from 1 to 9, with a score of 1 being a bad effect with an extreme impact, a score of 5 representing no effect with no impact, and 9 being a good effect with an extreme impact. The sum of individual item responses were added together to generate an overall OHQoL-UK(W)[®] score with possible values ranging from 16 to 144.

All the data collected were entered into spreadsheets, and SPSS software version 15.0 was used for statistical analysis. Means and standard deviations were calculated for dental anxiety according to various explanatory variables. One-way ANOVA and independent samples t test were used for continuous data, whereas chi-squares and Fisher’s exact test were used to analyze discrete data.

Stepwise multiple linear regression and logistic regression analyses were performed to determine the factors that affected dental anxiety and oral health-related quality of life, respectively. The effects of age, gender, occupation, number of teeth present, education, annual income and dental visits were analyzed, and dental anxiety was considered an additional factor where oral health-related quality of life was the dependent variable.

Dependent variables for linear regression analysis constituted dental anxiety and oral health-related quality of life. For multiple logistic regression analysis, the dependent variable oral health-related quality of life was dichotomized into 0 = “good” (i.e., a OHQoL-UK(W)[®] score of more than 103, which was the median score for the study population) and 1 = “poor” (less than the median) whereas for dental anxiety it was 0 = non anxious (DAS ≤ 12) and 1 = anxious (DAS ≥ 13). Other independent variables included were dichotomized: age (0 = 15-34, 1 = 35-54), education (0 = secondary, 1 = primary), gender (0 = male, 1 = female), occupation (0 = professionals 1 = others) number of teeth (0 = > 20, 1 = ≤ 20), annual income (0 = ≥ 3 units and 1 = ≤ 2 units), dental visiting habits (0 = visited a dentist, 1 = never visited dentist). The effect of each independent variable was assessed adjusting for all other variables in the model. Odds ratio was calculated for all the variables with 95% confidence intervals.

Results

The survey was conducted with an overall response rate of 93.3%, in which out of the total 1324 selected subjects 1235 constituted the final sample. Table 1 shows the sociodemographic and background characteristics of the study population.

It is clear from Table 1 that about half of the individuals

(45.6%) belonged to the 15-24 yr age group and that males composed more than half (54.4%) the sample population. A mere 2.3% of the subjects had completed primary school education, and the remaining 1206 had been educated up to secondary level. The proportions of subjects in various occupations were skilled and semiskilled (58.2%), professionals (39.8%) and unskilled (1.2%). The majority (58.25%) of the individuals earned < 1 unit per capita income while 27% had an annual income of ≥ 3 units per capita. A large fraction of the surveyed population (37.6%) had visited a dentist within last 12-36 months, whereas a quarter of the population (25.3%) had never been to a dentist.

Dental anxiety

Table 2 reveals that few individuals (4.4%) claimed they would be very frightened of what the dentist would do if they had to visit a dentist next day, in contrast to nearly half the population (44.9%) stating that they would feel a little uneasy. Furthermore, 0.2% of individuals reported that they sometimes broke out in a sweat or felt almost physically sick while waiting in a dentist's office, whereas a majority (52.6%) stated that they felt a little uneasy in this situation. Similarly, for the other dental anxiety questionnaire items, very few subjects claimed to be anxious or to feel physically sick, in contrast to the greater proportion feeling a little uneasy. Table 3 presents the mean DAS, and prevalence of high and low dental anxiety according to age group, gender and dental visiting habits. This shows that 96.7% of the study population belonging to the youngest age group experienced low dental anxiety; similarly, about 94.8% individuals belonging to the 35-44 years age group experienced a low anxiety level, while one eighth of the oldest age group and 17.4% of the 25-34-year age group reported high dental anxiety.

Although more females (7.8%) perceived high dental anxiety and had higher mean DAS score (9.01) than males (7.1%, mean DAS score of 8.98), statistical analysis revealed no significant differences. Chi-squared analysis revealed significant differences in dental fear based on dental visiting habits. Among those who had visited a dentist within the last 12 months, 93.5% and 6.5% experienced low and high dental anxiety, respectively, in comparison to 86.5% and 13.5% who had never been to a dentist. Moreover, subjects who never visited a dentist reported significantly higher mean DAS than those who had been to a dentist within the last 12 months. All the independent variables were included in stepwise multiple linear regression analysis. The best predictors for dental anxiety were, in descending order, occupation, gender and education, providing a variance of 10.3% (Table 4).

Table 1 Socio demographic profile and dental visiting practices of the study population

Variables		Number (percentage)
Age	15 – 24	564 (45.6%)
	25 – 34	96 (7.7%)
	35 – 44	276 (22.2%)
	45 – 54	299 (24.5%)
Gender	Male	672 (54.4%)
	Female	563 (45.6%)
Education	Primary	29 (2.3%)
	Secondary	1206 (97.7%)
Occupation	Professional	492 (39.8%)
	Skilled and semiskilled	729 (59.0%)
	Unskilled	14 (1.2%)
Annual income	< 1 unit per capita (<587.6 USD)	719 (58.2%)
	≥1 - <2 units per capita	84 (6.8%)
	≥2 - <3 units per capita	99 (8%)
	≥3 units per capita	333 (27%)
Time since last visit to dentist	Within the last 12 months	459 (37.2%)
	Between 12-36 months	464 (37.6%)
	Never been to dentist	312 (25.3%)

Occupation was the best predictor for dental anxiety and explained 6.8% of the variance in the model.

Oral health-related quality of life

Table 5 shows oral health-related quality of life in relation to dental visiting habits. Amongst those who had visited a dentist within the last 12 months, 92.2% of subjects reported a good effect of oral health on their appearance in contrast to 79.5% of subjects who never visited a dentist. Similarly, there were significant differences between the responses for oral health effects on speech, breath, comfort, sleep, confidence, worry, mood, social life, romantic relationship, smiling and finance among subjects who had visited a dentist within the last 12 months and those who never visited. For most of the effects, the

percentage of subjects reporting oral health to have a good effect was higher among those who had visited a dentist within the last 12 months than among those who never visited one.

It is evident from Table 6 that all the variables in the model explained 10.0% of the variance in OHQoL. The most significant contributor was annual income (3.9%), followed by dental fear. Logistic regression analysis was employed to determine the effect of various independent variables on the OHQoL, and the results revealed that all the independent variables were significantly related to OHQoL except for education level and the number of teeth present. An association between subject age and OHQoL was evident (Table 7), with the oldest population being 1.63 times more likely to have poor OHQoL than

Table 2 Prevalence of dental anxiety among the study population

	Frequency	Percentage
If you had to go to dentist tomorrow		
I would look forward to it as a reasonably enjoyable experience.	315	25.5%
I would not care one way or another	205	16.6%
I would be a little uneasy about it	555	44.9%
I would be afraid it would be unpleasant & painful	106	8.6%
I would be very frightened of what the dentist might do	54	4.4%
Waiting at the dental clinic for your turn		
Relaxed	337	27.3%
A little uneasy	650	52.6%
Tense	167	13.5%
Anxious	63	9.1%
So anxious that I sometimes break out in a sweat or almost feel physically sick.	3	0.2%
In the dentist chair waiting for drill to be used.		
Relaxed	206	16.7%
A little uneasy	488	39.5%
Tense	316	25.6%
Anxious	217	17.6%
So anxious that I sometimes break out in a sweat or almost feel physically sick.	8	0.6%
In the dentist chair waiting to have your teeth cleaned.		
Relaxed	460	37.2%
A little uneasy	446	36.1%
Tense	145	11.7%
Anxious	182	14.7%
So anxious that I sometimes break out in a sweat or almost feel physically sick.	2	0.2%

the youngest age group. Females were more liable (OR = 1.69, 95% CI = 1.35-1.92) to have poor OHQoL than males. When annual income was considered, individuals who belonged to the low income group presented a risk for poor OHQoL 1.28 times higher than individuals belonging to the high income group. Dental anxiety had

a significant influence on quality of life; people with high dental anxiety were 2.34 times more likely to have poor OHQoL than those having low anxiety. Furthermore, it was found that those who never visited a dentist presented an odds ratio of 1.62 for poor OHQoL relative to those who had visited a dentist within the last 12 months

Table 3 Mean and standard deviation DAS, proportion of subjects with DAS \leq 12 and DAS \geq 13 according to age group

	N	Mean (SD)	Overall significance	DAS \leq 12	DAS \geq 13	Overall significance
Age group						
15-24	564	8.64 (2.61)	0.000*	96.7	3.3	0.000†
25-34	96	9.91 (2.84)		82.6	17.4	
35-44	276	9.38 (2.89)		94.8	5.2	
45-54	299	7.88 (3.57)		87.5	12.5	
Gender						
Males	672	8.98 (2.54)	0.847**	92.9	7.1	0.654‡
Females	563	9.01 (3.09)		92.2	7.8	
Dental visit						
within 12 months	459	8.16 (2.81)	0.000*	93.5	6.5	0.001†
between 12 to 36 months	462	9.03 (2.71)		95.7	4.3	
never been to dentist	312	10.19 (2.68)		86.5	13.5	
TOTAL	1235	9.00 (2.85)		92.6	7.4	

*One way ANOVA, **Independent samples *t*-test, †Chi square analysis, ‡ Fisher exact test

Table 4 Step wise linear regression analysis with dental anxiety as dependent variable and occupation, gender and education as significant independent variables

Model	Independent variable	R ²	df	Beta	F	Sig
1	Occupation	0.068	921	-0.260	66.946	0.000
2	Gender	0.088	920	0.151	44.394	0.000
3	Education	0.103	919	0.122	35.013	0.000

Discussion

The psychosocial impact of dental anxiety and fear is well documented (8) and quality of life is increasingly acknowledged as a valid, appropriate and significant indicator of service needs and intervention outcomes in contemporary public health research and practice (14).

This study represents an attempt to explore the asso-

ciation between dental anxiety and OHQoL. Although there is a considerable volume of literature concerning dental anxiety and OHQoL, very few studies have analyzed the association between them, especially in developing countries. The present study attempted to explore the association of OHQoL with various sociodemographic variables including dental visiting habits and dental anxiety

Table 5 Attributes of the “effect” dimension of OHQoL of study population in relation to dental visits

		Within 12 months			Never visited		
		Good	Bad	None	Good	Bad	None
Physical	Eating	379 (82.6%)	52 (11.3%)	28 (6.1%)	241 (77.2%)	49 (15.7%)	22 (7.1%)
	Appearance‡	423 (92.2%)	33 (7.2%)	3 (0.6%)	248 (79.5%)	43 (13.8%)	21 (6.7%)
	Speech‡	369 (80.4%)	61 (13.3%)	29 (6.3%)	203 (65.1%)	83 (26.6%)	26 (8.3%)
	General health	377 (82.1%)	60 (13.1%)	22 (4.8%)	231 (74.0%)	54 (17.3%)	27 (8.7%)
	Breath‡	347 (75.6%)	82 (17.9%)	30 (6.5%)	194 (62.2%)	96 (30.8%)	22 (7.0%)
	Comfort‡	358 (78.0%)	56 (12.2%)	45 (9.8%)	232 (74.4%)	45 (14.4%)	35 (11.2%)
Psychological	Sleep‡	338 (73.7%)	64 (13.9%)	57 (12.4%)	230 (55.8%)	30 (9.5%)	52 (16.7%)
	Confidence‡	349 (76.0%)	54 (11.8%)	56 (12.2%)	179 (57.4%)	100 (32.0%)	33 (10.6%)
	Worry‡	247 (53.9%)	98 (21.3%)	114 (24.8%)	190 (60.9%)	44 (14.1%)	78 (25.0%)
	Mood‡	302 (65.8%)	70 (15.2%)	87 (19.0%)	182 (58.3%)	55 (17.6%)	75 (24.1%)
	Personality	344 (74.9%)	74 (16.2%)	41 (8.9%)	209 (67.0%)	73 (23.4%)	30 (9.6%)
Social	Social life‡	321 (69.9%)	35 (28.7%)	103 (38.0%)	228 (73.1%)	21 (6.7%)	63 (20.2%)
	Romantic relationship‡	322 (70.2%)	39 (8.5%)	98 (21.3%)	213 (68.3%)	22 (7.0%)	77 (24.7%)
	Smiling‡	388 (84.5%)	54 (11.8%)	17 (3.7%)	267 (85.6%)	27 (8.6%)	18 (5.8%)
	Work	342 (74.5%)	36 (7.8%)	81 (17.7%)	211 (67.6%)	36 (11.5%)	65 (20.9%)
	Finance‡	267 (58.2%)	94 (20.5%)	98 (21.3%)	158 (50.6%)	45 (14.4%)	109 (35.0%)

Chi square analysis, ‡Significance value $P < 0.05$

among an adult population living in Udaipur district, India.

The study was conducted during holidays, since the working population would be away from their houses during working days. Use of the OHQoL-UK(W)[®] in a population of patients with dental anxiety/fear has several advantages; phobic patients suffer from a variety of oral problems ranging from pain and functional limitation to disability. The concept of OHQoL-UK(W)[®] seems to be well suited for this purpose because of its ability to capture many consequences of dental anxiety and fear (15).

Dental anxiety

The prevalence of dental anxiety we observed concurs with estimates from a recent UK oral health survey (16)

and surveys from other countries (17-20). The prevalence of individuals with high dental anxiety in the present study ranged from 3.3% to 17.4% for various age groups, whereas it reportedly ranged between 4% and 9% among Norwegian adults (21). This difference could be attributed to the sociocultural differences between the study populations.

In the present population, no subjects experienced extremely high dental anxiety as measured by the Corah Dental Anxiety Scale ($DAS \geq 15$), unlike data obtained from previous studies (22,23). Acharya (24) for Indian adults and Holtzman et al. (25) for adults living in Denver, USA, observed a significant negative correlation between respondent age and dental anxiety. Similar findings were obtained in the present study, the mean DAS score

Table 6 Step wise linear regression analysis with OHQoL as dependent variable and annual income, dental anxiety, occupation, dental visits and gender as significant independent variables

Model	Independent variable	R ²	df	Beta	F	Sig
1	Annual income	0.039	921	-0.196	36.882	0.000
2	Dental anxiety	0.058	920	-0.144	28.531	0.000
3	Occupation	0.076	919	-0.204	25.339	0.000
4	Dental visit	0.092	918	-0.125	23.259	0.000
5	Gender	0.100	917	0.107	20.356	0.000

Table 7 Logistic regression: Odds ratio (OR) and 95% confidence interval (CI) for OHQoL of individuals living in Udaipur district, according to age (0 = 15-34, 1 = 35-54), gender (0 = male, 1 = female), education (0 = secondary, 1 = primary), occupation (0 = professionals, 1 = others) number of teeth present (0 = > 20, 1 = ≤ 20), annual income (0 = ≥ 3 units) and 1 = ≤ 2 units), dental anxiety (0 = DAS ≤ 12, 1 = DAS ≥ 13)

Independent variables	Quality of life	
	OR	95% CI
Age: old vs. young*	1.63	1.04-1.85
Gender: female vs. male*	1.69	1.35-1.92
Education: primary vs. secondary	1.35	0.64-2.85
Occupation: skilled, semiskilled and unskilled vs. professionals	2.56	2.02-2.61
Number of teeth present ≤ 20 vs. > 20*	2.38	0.46-12.31
Annual income ≤ 2 units vs. ≥ 3 units*	1.28	1.09-1.65
Dental anxiety: high vs. low *	2.34	2.21-2.86
Visited dentist in last 36 months vs. never visited dentist*	1.62	1.49-1.79

* $P < 0.05$

decreasing with increasing age, except for the youngest age group.

We found that the prevalence of dental anxiety was greater among females, but statistical analysis revealed no significant difference in this respect between the genders, in disagreement with a few studies (26,27) but in accordance with studies by Locker (8), Bergdahl and Bergdahl (28) and Abrahamsson et al. (29). This difference might have been due to cultural differences. Individuals with high dental fear were less likely to report regular dental care than individuals with low dental fear. This supports earlier findings by Hägglin et al. (23) that individuals with dental

fear avoid dental treatment and postpone their dental procedures.

Oral health-related quality of life

Most participants in this study felt that their oral health had an effect, either good or bad, on their quality of life. This supports the findings of others, where a large proportion of respondents perceived oral health as affecting their life quality (30). However, there were a substantial number of individuals who perceived oral health to have no effect on their quality of life. For effects on appearance, breath, comfort, sleep, mood and social life, a larger

proportion of participants who had visited the dentist within 12 months claimed to experience a beneficial effect of oral health on their quality of life. This result is in accord with earlier studies from the USA (31, 32). By using the OHQoL-UK(W)[©] indicator it was found that younger individuals had better OHQoL than older individuals.

Moreover, participants who had never been to a dentist had poorer OHQoL than those who had visited a dentist in the last 3 years. Subjects who visited a dentist would have better oral health and thus would report oral health to have a good effect on various attributes of OHQoL-UK(W)[©]. Although statistically insignificant, individuals with less than 20 remaining teeth presented an odds ratio of 2.38 for poor OHQoL-UK(W)[©] relative to those with more than 20 teeth remaining. This was in accord with previous studies (5,33,34). One possible explanation for this is that persons who consider their oral health to have a good effect on quality of life would prefer their teeth to be preserved. On comparing the relationship between occupation and OHQoL, it was found that skilled, semiskilled and unskilled individuals had poorer OHQoL than professionals, similar to the trend observed by McGrath and Bedi (33). From the present study, it was evident that individuals with less education had poorer OHQoL than those with higher education, in agreement with observations from the U.S. National Health Interview Survey (32).

Furthermore, annual income directly affected OHQoL, individuals possessing greater income having better OHQoL than those with lower income. The most reasonable explanation for this finding is that higher-income individuals can better afford to visit a dentist and subsequently perceive their oral health to have a good effect on quality of life.

Association of dental anxiety with oral health-related quality of life

It was found in Britain that individuals with a higher level of dental anxiety were about two times as likely to be among those below the population median OHQoL-UK(W)[©] score (13). This is in accord with the present study where individuals with high dental anxiety were more than two times (OR = 2.34, 95% CI = 2.21-2.86) as likely to be among those below the population median OHQoL-UK(W)[©]. The reason for this may be that dentally anxious people neglect their oral health to such an extent that they probably have high levels of untreated disease, and this detracts from their day-to-day living and life quality to a considerable degree (5).

Dental anxiety differed significantly with age and dental visiting practices. Moreover, dental anxiety was signifi-

cantly associated with OHQoL, controlling for other variables. Thus, efforts should be made to detect and treat dental fear and thus improve the impact of oral health on quality of life. Other variables associated with OHQoL were dental visiting habits and demographic variables (age and gender). In addition, occupation and income were also significantly associated with OHQoL.

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