ORIGINAL RESEARCH PAPER

Factors affecting dental satisfaction among Malaysian dental students

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Abstract

Background: In dentistry, clinical practice is a significant component so studies to understand the level of satisfaction with dental care among dental students were highly recommended. Aims: To assess the satisfaction with dental care among Malaysian dental students. Methods: A random sample of 70 Malaysian students doing their first and second year dental undergraduate course in Melaka Manipal Dental College, Manipal were completed the nineteen item Dental Satisfaction Questionnaire (DSQ). Results: The mean DSQ total was 60.16±6.2. The internal consistency of the scales for pain management, quality, assess and overall index for dental satisfaction was assessed using Cronbach's alpha. The scaled mean of total DSQ was 3.16 and reflected neutrality with dental satisfaction. Also, the subscales of pain management, access, and quality of dental care ranged from 2.81 to 3.47 showing not so affirmative attitude towards dental care. Conclusion: The level of dental satisfaction was marginally positive for Malaysian dental students.

Key Words: Dental Satisfaction Questionnaire; DSQ; dental students; dental care; pain management

Introduction

The clinical practice in dentistry involves various procedures that have to be performed without causing any harm or discomfort to the patient. Calnan (1) reported that the evaluation of quality of general dental care from the users' point of view lies particularly on pain management. However, the major source of decline in satisfaction with the quality of general dental care is the barrier to access dentists in private practice.

The reflection about the teaching and learning process in dentistry should focus not only on information acquired during the undergraduate course, but also on the process through which knowledge is acquired.(2) Therefore, it is imperative to conduct studies to understand the level of satisfaction with dental care among dental students. The objective of this study was to assess the level of satisfaction with dental care among first and second year Malaysian dental students.

Materials and methods

The study was conducted in first and second BDS Malaysian students studying in Malakka Manipal Dental College, Manipal, in Feb- Mar 2011. Informed consent was obtained from each student prior to the distribution of the questionnaire. All students unanimously agreed to complete the questionnaire. Questionnaires were distributed to the students in their respective classrooms after the lectures. A total of 70 students present on the day of the survey. The absentees were not included in the study.

A structured questionnaire was used to record the demographic characteristics such as age, gender, year of study, domiciliary status, religion, oral health related behavior including tooth brushing frequency, dietary, alcohol and smoking habits; global oral health indicator; received dental treatment and the nineteen item Dental Satisfaction Questionnaire (DSQ).(3)

The responses for received dental treatment, global oral health indicator and alcohol intake were dichotomized as yes and no. Frequency of cleaning teeth yielding the categories of twice and more than twice were obtained and smoking habit was assessed under smoker and non-smoker categories.

The DSQ is a nineteen item instrument designed for self-administration in about five minutes.(3) Three subscales assess access, pain management and quality of dental care. Additional items rate attitudes toward continuity and general satisfaction. The individual item were rated on five-point Likert scale ranging from "strongly agree" to "occasionally agree", "indifferent", and "occasionally disagree" to "strongly disagree". Few of the items had their scoring reversed to avoid response set bias. Previous works by Golletz (4) have shown the items to have acceptable reliability and validity.

The data analysis was done using SPSS (version 10). Few of the items of the DSQ are scored in a negative direction. Before the analysis these items were reversed to make a high total DSQ score that would imply high satisfaction with dental care. Cronbach's alpha statistics was used to assess the reliability of subscales as a measure of internal consistency. The scaled mean was the mean score of the scale divided by the number of items in that scale.(5)The scaled means assigns the overall score, and the subscale scores on a 1(strongly agree) to 5 (strongly disagree) scoring dimension. Scaled mean

scores near 1.0, 3.0 and 5.0 represented extreme dissatisfaction, neutrality, and extreme satisfaction respectively. The prorated mean was defined as the raw mean expressed as a percent of highest possible scale or subscale score.(3, 5) Chi-square test was used for categorical data analysis. Non parametric tests e.g. Kruskal-Wallis ANOVA and Mann-Whitney tests were used for analysis as the DSQ frequency scores were not normally distributed. P≤0.05 was considered statistically significant.

Results

A total of 70 students i.e., 61.4 % females and 38.6% males with an average age of 20.23 ± 0.84 years completed a self-administered questionnaire in English. Table 1 shows the Socio-demographic details frequency distribution among the Malaysian dental students according to the independent variable. The male female ratio was approximately 0.6:1.

Independent Variable	Classification	N (%)
Gender	Female	43 (61.4)
	Male	27 (38.6)
Diet	Mixed	70 (100)
	Vegetarian	-
Religion	Hindu	14 (20.0)
	Christian	16 (22.9)
	Muslim	21 (30.0)
	Buddhist	19 (27.1)
Alcohol Intake	Yes	18 (25.7)
	No	52(74.3)
Smoking Status	Smoker	2 (2.9)
	Non smoker	68 (97.1)
Satisfaction with oral health	Yes	41 (58.6)
	No	29 (41.4)
Dental treatment	Yes	60 (85.7)
	No	10 (14.3)
Frequency of cleaning	Twice	50 (71.4)
	More than twice	20 (28.6)

Table 1 Frequency distribution of the students according to the independent variable

The dietary habit for all the students was mentioned as mixed diet. 25.7 % of the students agreed of the habit of alcohol consumption and a minimal percentage (2.1) of them reported themselves of being smokers. Majority of the students brushed twice daily whereas 20 students reported as brushing more than twice daily. 58.6 % of the students were satisfied with their oral health and 85.7% of them had undergone dental treatment. Questions 6, 9, 12, 14 and 17 (>3.5) showed highest mean values and questions 1, 8, and 13 showed lowest mean values (< 2.5). The mean DSQ total was 60.16±6.2 (Table 2).

	Abbreviated Content	Mean	SD
1.	Dental care could be better	2.19	1.03
2.	Dentists check everything	3.61	0.92
3.	Fees too high	2.69	1.05
4.	Avoid dentist because painful	3.56	1.32
5.	Wait long time at dentist's office	2.56	1.31
6.	Dentists treat patients with respect	3.69	1.20
7.	Enough dentists around here	3.14	1.20
8.	Dentists should reduce pain	2.29	0.94
9.	Dental care conveniently located	3.99	0.93
10.	Dentists avoid unnecessary expenses	3.40	1.13
11.	Dentists not thorough	2.87	0.99
12.	See same dentist	3.70	1.1
13.	Hard to get appointment	2.57	1.25
14.	Dentists relieve most problems	3.5	1.02
15.	Office hours good	3.17	1.09
16.	Dentists explain what they do and cost	3.31	1.36
17.	Keep people from problems with teeth	3.96	0.98
18.	Dentists' offices modern	3.44	1.01
19.	Not concerned about pain	2.6	1.33

Table 2 Means and Standard Deviations, Dental Satisfaction Items, All Sites Combined (N=70)
Note: Items have been recoded so that higher scores indicate greater satisfaction

Table 3 shows the comparisons of the subscales and the DSQ total mean values with independent variables. However, they were also the ones to report lesser pain management. Also the students who reported of the habit of alcohol consumption seemed to be satisfied with the pain management during dental procedures and access to dental care though they didn't seem to be satisfied with the quality of dental care rendered to them. The internal consistency of the scales for pain management, quality, assess and overall index for dental satisfaction was assessed using Cronbach's alpha. Scores ranged from 0.36 to 0.59 (Table 4). This did not demonstrate sufficient internal consistency for meaningful interpretation. Table 5 gives the measure, number of items, mean and standard deviation, scaled mean, and prorated mean. The scaled mean of total DSQ was 3.16 and reflected neutrality with dental satisfaction. Also, the subscales of pain management, access, and quality of dental care ranged from 2.81 to 3.47 showing not so affirmative attitude to dental care. The prorated means reported most subjects had neutral to somewhat positive ratings of care.

Discussion

This study was done to assess the level of satisfaction with dental care among Malaysian dental students studying in Malakka Manipal Dental College, Manipal. The DSQ was developed and tested for reliability and validity in a large scale,

Variables			Pain management	Quality	Access	DSQ – Total
		n	Mean(SD)	Mean(SD)	Mean(SD)	Mean(SD)
Alcohol Intake	Yes	18	9.83(2.50)	22.2(5.89)	23.1(3.540)	60.78(7.81)
	No	52	7.96(2.9)	25.04(3.03)	20.96(3.58)	59.94(5.6)
p value			0.005*	0.03*	0.01*	0.62
Smoking Status	Smoker	2	8.5(2.12)	25.42(1.41)	21(2.82)	60.50(0.7)
	Non smoker	68	8.44(2.52)	24.29(4.17)	21.53(6.68)	60.15(6.29)
p value			0.97	0.81	0.84	0.93
Satisfaction with oral health	Yes	41	8.59(2.36)	24.78(3.3)	21.41(3.45)	60.76(5.5)
	No	29	8.24(2.7)	23.66(5.01)	21.66(3.9)	59.31(6.9)
p value			0.57	0.26	0.78	0.34
Dental treatment	Yes	60	8.2(2.5)	25.12(3.15)	21.62(3.73)	60.82(6.26)
	No	10	9.9(1.4)	19.50(5.85)	20.90(3.17)	56.2(4.16)
p value			0.04*	0.00*	0.56	0.28
BDS year of study	1st Year	47	8.7(2.5)	23.98(4.5)	21.25(3.62)	59.6(6.3)
	2nd Year	23	7.9(2.31)	25(2.93)	22.26(3.64)	61.3(5.8)
p value			0.21	0.33	0.23	0.28

Table 3 Comparisons of the subscales and the DSQ total mean values with independent variables.

Scale Name	Item	Abbreviated Content	Cronbach's ∞
Pain Management	4	Avoid dentist because painful	0.49
	8	Dentists should reduce pain	
	19	Not concerned about pain	
Quality	2	Dentists check everything	0.59
	6	Dentists treat patients with respect	
	11	Dentists not thorough	
	14	Dentists relieve most problems	
	16	Explain what they do and cost	
	17	Keep people from problems with teeth	
	18	Dentists' offices modern	
Access Total	3	Fees too high	0.36
	5	Wait long time at dentist's office	
	7	Enough dentists around here	
	9	Dental care conveniently located	
	10	Dentists avoid unnecessary expenses	
	13	Hard to get appointment	
	15	Office hours good	
Items not on a subscale	1	Dental care could be better	
	12	See same dentist	
DSQ-I (overall)		All 19 items	0.39

Table 4 Reliability (Cronbach's alpha) of the subscales based on the original DSQ

		Current Study Sample		
Scale	Number of items	Mean ±SD	Scaled Mean	Prorated Mean (%)
Pain Management	3	8.44±2.5	2.81	52.27%
Quality	7	24.31±4.11	3.47	69.46%
Access	7	21.51±3.64	3.07	61.46%
DSQ-I overall	19	60.16±6.2	3.16	63.33%

Table 5 Means, Standard Deviation, and Scale Midpoints for Dental Satisfaction Questionnaire Scales for the current study sample

multisite national study in the USA by Davies.(3) This instrument had also been tested in a low socio economic population in the same country. It is accepted that both the reliability and validity of psychometric properties may be influenced by cultural differences in attitudes, beliefs, and priorities and the scale should therefore be retested before being used in a different cultural context. In their original work, Davies and Ware suggested that the same principle should be applied to the DSQ scale as well as to the different dimensions of dental satisfaction, particularly satisfaction with pain management.(3) However, to our knowledge, no such population-based studies have so far been published especially in Malaysian dental students. The mean value of DSQ total scores and different subscale scores of the present study was compared with other studies (3, 4, 6) and was seen that the DSQ score were similar in the present study (Table 5). Also, mean age 20.23 years of the present study population were much lower than in other studies on the DSQ. (3, 4) Previous researches on health care satisfaction have shown that older individuals are more likely to

report higher satisfaction than younger individuals. (7, 8)

Golletz et al. compared the three subscales and the total DSQ with race/ethnicity, education level, marital status and Nation of Origin in a low socio economic population and the statistically significant results confirmed their relationship.(4) However, the present study showed no relationship between DSQ and independent variables such as gender, domiciliary status, religion, parent's education and parent's occupation.

Students who had undergone dental treatment were satisfied with the quality of dental care in dental clinic and not satisfied with the pain management as compared to the students who had never received any dental treatment. Similar finding was seen in a study by Kawamura M et al. where the percentage of Australian dental students didn't go to dentist until their toothache was lower.(9) In another study more than half of dental students reported that they put off going to the dentist until they had a toothache.(10,11) Thus pain management in the dental clinic was a very crucial part of the dental care among the dentists too. There can be several drawbacks of the present study. Firstly the sample size of the study population was less which can be attributed for the statistically insignificant results. Secondly, it could have been predicted that dental care satisfaction among dental students would be convincingly high because of the social desirability bias of the dental professionals. Thirdly, the low Cronbach's alpha for the DSQ does not testify much to the reliability of the construct in Malaysian students setting.

Conclusion

Building up of positive satisfaction level with dental care will instill a positive attitude towards the dental care behavior among dental students. The level of dental satisfaction was marginally positive for Malaysian dental students. Molding positive dental health attitudes and behaviors in dental student's right from the beginning of their course can help them improve their level of dental satisfaction. Also, freshmen dental students are vulnerable to deleterious habits when they enter into the professional courses. Hence regular oral health screening programs and imparting oral health education to these novice dental students could possibly educate and motivate students in taking care of their oral and general health. To conclude it can be stated improving dental satisfaction among the dental students is a factor that should be given paramount importance in preparing of professionally competent dentists.

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