Patient satisfaction with dental services at Ajman University, United Arab Emirates

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الرضاء عن خدمات طب الأسنان في جامعة عجمان، بالإمارات العربية المتحدة

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الخلاصة: أُجريت دراسة مسحيَّة شملت 151 من المرضى الذين اختيروا عشوائياً، فكان منهم 50 رجلاً و85 امرأة. واستُخدم استبيان لجمع المعطيات حول التفاصيل الشخصية، والمعلومات المتعلقة بالزيارة الحالية، وبالاستفادة من خدمات طب الأسنان. وقد كان معظم المرضى من العرب، وقليل منهم من الهنود، وكان معظمهم راضياً عن الرعاية التي قُدِّمَتْ له، باستثناء شرح الخيارات العلاجية وبُعْد موقع العيادة. ولا يَخْفَى أن قياس مدى الرضاء يمثِّل عاملاً هاماً في رفع مستوى الخدمات المقدَّمة ولابُدَّ من رصده باستمرار.

ABSTRACT To provide information about the level of patient satisfaction with the dental care provided at the Faculty of Dentistry at Ajman University, 135 randomly selected patients, 50 males and 85 females, were surveyed. A questionnaire was used to collect data on personal details and information regarding current visit and use of the dental service. Most patients were Arabs; a minority were Indian. Most were satisfied with the care provided except for explanation of treatment options and the remoteness of the clinic. Measuring level of satisfaction is an important factor towards improving the service provided and should be monitored regularly.

La satisfaction des patients à l'égard des services dentaires à l'Université d'Ajman (Émirats arabes unis)

RÉSUMÉ Afin d'obtenir des informations sur le niveau de satisfaction des patients à l'égard des soins dentaires dispensés à la Faculté de Dentisterie de l'Université d'Ajman, une enquête a été menée auprès de 135 patients choisis au hasard, dont 50 hommes et 85 femmes. Un questionnaire a été utilisé pour recueillir des données personnelles les concernant et des informations concernant la consultation alors effectuée et l'utilisation des services dentaires. La plupart des patients étaient Arabes, une minorité étant Indiens. La majorité des patients étaient satisfaits des prestations fournies sauf pour l'explication des options de traitement et l'éloignement du service de consultations. La mesure du niveau de satisfaction est un facteur important pour améliorer la prestation des services et devrait être suivie régulièrement.

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Introduction

Ajman University, the only university in the Emirate of Ajman, has a history of more than 12 years teaching faculties such as engineering, computer science, business and pharmacy. In 1997, the Faculty of Dentistry was established as the first dental school in the United Arab Emirates. Dental services commenced from mid-September 2000.

The cost of the dental services is heavily subsidized by the university. Dental appointments are always fully booked and the usual waiting time to get an appointment for treatment depends on each patient's case and on the student schedule for the clinics. Patients with acute problems can, however, make an emergency appointment and are seen on the same day.

Although the university aims at providing a good dental service for its patients and spends a considerable amount of money and human resources, little information on patient satisfaction is available. Patient satisfaction with dental care is an important aspect of the quality of care [*1*], and will influence the future utilization of the service. It is, therefore, an essential element in assessing the quality of care. A major issue for careful monitoring of consumer satisfaction is recognition of the complex relationship between patients' views of the health care system and their health and illness behaviour [*2*]. Dentist–patient interactions during a consultation, including cognitive and emotional aspects, have been demonstrated to affect patient compliance with clinical advice and follow-up visits.

Over the past 10 years, consumer satisfaction has gained widespread recognition as a measure of quality in many public sector services. Satisfaction is the fulfilment of desire or need. Pascoe defined patient satisfaction as a health care recipient's reaction to salient aspects of the context, process, and result of their service experience [*3*]. The consumer is the central figure of accountability in public services. If a patient is to be adequately served, then he or she must have a voice in the process of care.

While measures of satisfaction with medical care are abundant, only a small number of dental satisfaction questionnaires have been reported in the literature. Ware and Snyder [*4*] devised a patient satisfaction questionnaire for measuring satisfaction with medical care. The dental satisfaction questionnaire of Davies and Ware [*5*] was adapted from this by changing item references from medical to dental and adding pain management items. It has the advantage of having a manageable number of items (19) over a broader range of subscales than other dental satisfaction questionnaires, and is measured on a 5-point Likert scale.

If satisfaction influences compliance, and better compliance means healthier (and less costly) patients in the long term, then perhaps the most effective way to improve compliance for younger patients is to increase their general satisfaction with the dental practice [*6*].

Because of the importance of these relations for obtaining patient feedback on dental services, this survey to evaluate patient satisfaction was conducted at the Dental Faculty of Ajman University.

Methods

The Davies and Ware questionnaire was considered to have items useful for the current study (pain management was not considered in this study). Accordingly, items were adapted from that instrument and used in combination with the 5-item Dental Satisfaction Scale developed for use in Australia [*7*].

The questionnaire was designed in English and translated into Arabic and then translated back into English to ensure that the meaning of the questions stayed the same.

A pilot study was conducted on 16 patients to pre-test the data collection methods and the questionnaire. The participants were invited to complete a questionnaire and their opinion about the wording of that version was requested. The questionnaire appeared to be easily understood and was finalized with no changes.

As this was the first survey conducted at the university to measure level of patient satisfaction, it was decided to select at least 50% of the patients over the study period. A total of 151 patients were randomly selected from all (282) patients who had undergone care at the female dental student clinic in the Faculty of Dentistry in March 2003. Randomization was done using a computer program. Only 6 patients refused to participate. Ajman University has 2 separate sections, 1 for female students only, the other for male students, both sections getting their patients from the same source. The patients were distributed randomly according to the student availability.

The patients were invited to complete a questionnaire that required them to supply personal details and information regarding their current visit and use of the dental service. The items on the questionnaire were mainly categorized under 3 dimensions: access, the physical process of arranging for and getting to dental care; convenience, the location of clinics; and quality, defined as how good the care is, both in term of technical and interpersonal aspects of the process. Cost of treatment was not considered as the treatment in our faculty is heavily subsidized by the university. Naturally, all our patients were expected to be satisfied with this item.

The questionnaire contained a list of 9 statements about various aspects of dental care and the participants were asked to indicate their degree of agreement with the statements on a 5-point Likert scale (strongly agree; agree; neutral; disagree; strongly disagree). This scaling method has been employed in other surveys [*8,9*] and has the advantage of being relatively easy for respondents to complete. The questions were randomly arranged and asked in either a positive or negative way to minimize the inertia response given by the respondents. The answers to the questions given a negative slant were reversed by receding during analysis so the direction of all responses was the same. For young patients, their caregivers were asked to fill in the form, and for patients who were illiterate, dental students assisted in filling in the forms.

Questionnaires were not marked in any way that might permit identification of the patient. Questions were scored 1–5. The responses were coded and data were transferred to the computer for analysis using *SPSS*. Following the computation of the initial descriptive statistics, bivariate associations were examined using analysis of variance and chi-squared tests. Factor analysis was used to confirm the factor structure of the dental satisfaction scales. Patients with missing responses for a given question were excluded from that category in the data analysis.

Results

Questionnaires were distributed to 151 patients, and responses were received from 135 (response rate 89.4%), of whom 50 were male (Table 1). The age range was between 11 and just over 60 years. A sizeable proportion (40.7%) had university level education and only 8.1% were illiterate.

Most of the patients (65.9%) were non-Emirati Arabs.

The major reason for admission (80.0%) was relief of pain (Table 2). A high proportion of the patients (83.0%) visited the dentist only when they had a problem: just 7.4% came twice a year. The largest category for treatment received (23.0%) was operative treatment, followed by endodontic (19.3%).

There was a statistically significant association between the level of education and the dental satisfaction scale. The most highly educated patients were the least satisfied with the treatment provided (Table 1). Patients who visited the clinic for pain relief were significantly more satisfied than those who visited the clinic for routine care ($P < 0.01$) (Table 2). The dental satisfaction levels were also significantly higher among patients who visited the clinic only when they had problems ($P < 0.05$).

Table 1 **Dental satisfaction scale score according to sociodemographic characteristics**

Characteristic	No. (n = 135)	%	Mean dental satisfaction score (SD)
Sex			
Male	50	37.0	18.4 (3.4)
Female	85	63.0	19.0 (3.5)
Age (years)			
11–20	25	18.5	19.4 (2.8)
21–30	36	26.7	18.0 (3.6)
31–40	41	30.4	19.2 (3.8)
41–50	23	17.0	18.4 (3.6)
51–60	8	5.9	18.4 (2.5)
> 60	2	1.5	22.0 (1.4)
Education			
Illiterate	11	8.1	20.5 (2.5)[a]
Primary school	29	21.5	19.4 (2.7)
High school	40	29.6	20.0 (3.7)
University	55	40.7	17.3 (3.3)
Nationality			
Emirati	15	11.1	18.0 (2.5)
Non-Emirati Arab nationals	89	65.9	19.0 (3.6)
Indian	9	6.7	18.8 (3.3)
Other	22	16.3	18.4 (3.5)

SD = standard deviation.

[a]*P < 0.01; one-way analysis of variance.*

Table 2 **Dental satisfaction scale score by type of patient, frequency of dental visit and type of treatment received**

Variable	No. (n = 135)	%	Mean dental satisfaction score (SD)
Type of care[a]			
Routine care	26	19.3	18.0 (4.0)
Relief of pain	108	80.0	19.0 (3.3)
Frequency of dental visit[b]			
Twice a year	10	7.4	18.0 (2.3)
Once a year	11	8.1	6.2 (2.7)
Every 2 years	2	1.5	17.5 (2.1)
Only when having a problem	112	83.0	19.2 (3.5)
Type of treatment received[c]			
Surgery	20	14.8	19.3 (3.5)
Prosthodontic	24	17.8	17.2 (3.7)
Orthodontic	5	3.7	20.4 (2.9)
Periodontal	21	15.6	18.3 (3.5)
Endodontic	26	19.3	18.0 (3.5)
Operative	31	23.0	20.0 (3.2)
Paedodontic	8	5.9	20.0 (1.5)

SD = standard deviation.

[a]*Significant at* P *< 0.01; one-way analysis of variance.*

[b]*Significant at* P *< 0.05; one-way analysis of variance (least significant difference): scores for those who visited the dentist only when they had a problem differed significantly from those who visited the dentist once a year.*

[c]*Significant at P < 0.05; one-way analysis of variance (least significant difference): those who received surgical treatment differed from those having prosthodontic and orthodontic treatment; and those who received endodontic treatment differed from those who received operative treatment, but the difference was not statistically significant. Those who received prosthodontic treatment were the least satisfied.*

Table 3 shows descriptive statistics of the dimensions of dental satisfaction with the university dental service. The dimension on quality was split into interpersonal and technical aspects of the care process. Most of the patients were satisfied with the service provided except for dental care could be better (25.9%), explanation for treatment options (37.0%) and remoteness of the clinic (57.0%). Most participants agreed that the clinic is located too far from the city centre.

Discussion

Evaluation of the quality of health care has emerged as a key issue for all health services, and for some time it has been recognized that the patients' views are an essential component of such evaluations [*10,11*]. Patients can participate in the evaluation of quality of oral health care in 3 ways: by defining what is desirable or undesirable (i.e. setting standards of care); by providing information that permits others to evaluate the quality of care; and by expressing satisfaction or dissatisfaction with care. In the present study, the patients' contribution was in providing information and expressing satisfaction or dissatisfaction with oral health care.

Since the present study aimed to evaluate patient satisfaction and identify the major problems of the dental services, a response from 135 of the 151 patients selected was considered to be adequate.

It should be noted that the results of this survey are valid only for the group of patients participating in this study and not for the entire dental patient population of the United Arab Emirates. To maximize participation rate, the questionnaires were collected during patient treatment, but prior to the finalization of that treatment. It should be noted, however, that the results might have varied if the responses had been

Table 3 **Respondents answering positively in the dental satisfaction questionnaire**

Questionnaire item (abbreviated)	Positive response No.	%[a]	Content category
Dentist explained the treatment needed well	127	94.1	Quality (interpersonal)
Dentist did not explain treatment options clearly	50	37.0	Quality (interpersonal)
Dentist treated patient with respect	113	83.7	Quality (interpersonal)
Receptionist courteous and professional	115	85.2	Quality (interpersonal)
Did not wait long in waiting room	101	74.8	Access
Dental clinic clean and tidy	124	91.9	Quality (technical)
Satisfied with dental care received	125	92.6	General satisfaction
Dental care could be better	35	25.9	General satisfaction
Dental clinic too far away	77	57.0	Convenience

[a] *The answers for all items were recoded so that a higher percentage indicates higher dental satisfaction.*

collected at the end rather than during the treatment [*10*].

In addition, the assistance provided by our students to illiterate patients could have biased the results, but those patients were included in this study to get comprehensive responses from the randomly selected patients.

In previous studies, the effect of sociodemographic characteristics of the patients on satisfaction with general dental care has been unclear. Some reports pointed to a direct effect of sex [*12–14*] and age [*12,14*]. Others failed to show such associations [*13,15*]. In this study, also, no significant differences were observed between the satisfaction score and background variables (sex and age) of the patients. The only significant finding observed for the dental satisfaction scale was in relation to education level; the more highly educated patients were less satisfied with the care provided. It is possible that the more-educated patients had higher expectations of the service, whereas the less-educated patients might have appreciated getting any dental care. This finding is not consistent with that of another study where it was shown that highly educated people are more satisfied than those with a lower level of education [*16*].

Some previous reports have shown a relationship between patient satisfaction and ethnicity [*17,18*]. Black patients tended to be the least satisfied; Hispanic patients were only moderately satisfied when compared to non-Hispanic patients. In the current study, no association was found between nationality and level of patient satisfaction, so this is probably not a valid predictor of patient satisfaction.

We found that patients who visited the dentist only when having a problem tended to be more satisfied than those who visited the dentist regularly. This may be because those patients with problems get immediate relief after treatment compared to those who come for a check-up only. Goedhart, Eijkman and ter Horst [*19*] and Tuominen and Tuominen [*15*] declared that for a significant number of patients, the ultimate goal of the treatment is "the cure." The rest of the steps in the process contributing to this result appear to be disregarded by these patients. Thus, they prefer to see the end result to express their (dis)satisfaction, ignoring the efforts of oral diagnosticians and radiologists, and any other dental personnel along the way.

In Ajman University, the dental clinics for female dental students are separated from the ones for male students, mainly for cultural reasons, although female dentists can treat both sexes. This survey was performed in the female dental student clinic. This might have influenced the patients to give more positive responses. Douglas, Reisine and Cipes reported that the patients responded more positively to female dentists than to male dentists, even when they assumed non-interactive behaviour [*20*].

Most of the patients who participated in this study were dissatisfied with the explanation of treatment options received and the remoteness of the clinic. The importance of interpersonal factors for dental patient satisfaction was supported by Murtomaa and Masalin in a study in Finland [*21*], and by Strauss et al. in the United States of America [*22*]. The latter reported that the 2 issues cited by patients as most important in evaluating dental care were the dentist's awareness of discomfort, and explanation of treatment. Similarly, Kress and Silversin found interpersonal factors (personality and communication) to be the most frequently cited by their focus groups as important to satisfaction with dental care [*23*]. Providing the patient with further explanation of their treatment options should be highlighted to

our students to achieve high level of satisfaction with service provided.

The patients were satisfied with technical aspects of the treatment, a criterion that is met fairly often in real practice [*24*]. It has been reported that patients prefer a caring and pleasant dentist to a skilled one alone [*25*]. Some patients may have difficulty evaluating the technical quality of the dental service they had received, and would base their judgment on other factors, such as physical settings and the ability to solve problems [*26*].

The dental care delivery system in our faculty is based on scheduled appointments, and dental interns carry out dental treatment under the supervision of experienced clinicians. These factors probably lengthen the treatment period compared to the patient's expectations. Additionally, as reported by Feine, Awad and Lund, disappointment with treatment assignment could also have negatively affected the mean satisfaction scores [*27*].

Dental service is a dynamic process between the provider and the recipient, with the goal of improving health [*28*], and recognition of the complex nature of this relationship by dental health care providers will enable the patients to accept and comply with the proposed dental care, eventually leading to a successful outcome for both dentists and patients. As long as our patients are unhappy about the explanation of treatment options, the importance of establishing social relationship and verbal communication should be strongly emphasized to our students. To obtain adequate consumer feedback in a reasonable time, regular surveys monitoring patient satisfaction in both male and female faculties are needed to determine the main weakness in the new service provided in Ajman University. Data from such surveys would also help in evaluating the effects of efforts made to improve the service and in monitoring changes in satisfaction levels.

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