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## Clinical Study

# Patient satisfaction from dental services provided by the College of Dentistry, Taibah University, Saudi Arabia

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### KEYWORDS

College of dentistry;  
Dental services;  
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**Abstract** *Objective:* Quality is a major concern of health care agencies all over the world. Patients' satisfaction has been investigated in many colleges of dentistry in various countries. Dental complaints made by patients may cause a great deal of anxiety and stress among dental care providers. It is important for the profession to promote high standards of professional conduct among dentists. The aim of this study is to determine patients' satisfaction regarding the quality of dental care at dental clinics of the College of Dentistry at Taibah University.

*Methods:* A cross sectional analytical observational study was conducted at the dental clinics of the College of Dentistry at Taibah University. A random sampling technique was employed over a three-month period; March 1st–May 31st 2012. A self administered (Arabic/English) questionnaire was used.

*Results:* A total of 202 patients qualified for the study, but only 162 agreed to participate with a response rate of 80.19: (55.6%) were Saudi nationals and 44.4% were Non-Saudis. The overall ranking of factors related to satisfaction revealed a mean percentage of 79.5% agreement for the 4 disciplines of satisfaction denoting a high level of satisfaction. The association between respondents' nationality and the characteristics of the four disciplines of satisfaction revealed significant difference between Saudi and Non Saudis.

*Conclusion:* The majority of patients were satisfied with the patient–dentist interaction, technical competency, administrative efficiency and clinic set up environment at the dental clinics of the College of Dentistry at Taibah University.

*Recommendations:* Continuous evaluation of patient satisfaction is to be part and parcel of the oral health care delivery by the College of Dentistry at Taibah University to ensure patient satisfaction.

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## Introduction

Feedback on satisfaction regarding dental care is vital for continuous improvement of the service delivery process and outcome.<sup>1,2</sup> Dental complaints made by patients may cause a great deal of anxiety and stress among dental care providers.<sup>3,4</sup> Dissatisfaction and complaints may result in patients changing their dentist, which might have ramifications in terms of the family and friends' perceptions of the dental practice.<sup>5-8</sup>

It is important for the profession to promote high standards of professional conduct among dentists.<sup>9</sup> In an era of clinical governance and patient partnership in delivering high quality oral healthcare, it is necessary that patients' concerns are dealt with appropriately.<sup>10</sup>

The College of Dentistry, Taibah University at Almadinah Almunawwarah, Saudi Arabia was established in 1426 H/2005 G. It actually accepted its first group of students in the academic year of 1429–1430 H/2008–2009 G. The college offers high quality dental services to patients seeking dental treatment, which is a true addition of services provided by Taibah University to the community.

As teaching institutions, dental clinics of Colleges of Dentistry usually strive to find a balance between meeting the needs of patients and students. Patients' satisfaction with the dental care they receive is crucial because it will influence their pattern for service utilization. It has been shown that patients who were more satisfied with dental care had better compliance, fewer un-attended appointments, less anxiety, pain and perception. Dentist–patient interactions during dental treatment have been demonstrated to affect patients' compliance with clinical advice and commitment to scheduled visits. Therefore, information on patients' feedback and satisfaction is necessary to properly evaluate the service being given.<sup>7,11,12</sup>

This study aimed to determine the levels of satisfaction regarding the quality of dental care among patients at the dental clinics of the College of Dentistry, Taibah University. However, what patients want from the services may differ from what the provider thinks is best for them. Therefore, their opinion should be incorporated to provide a holistic view in enhancing the understanding of the factors affecting patients' satisfaction with the health care setting. These include disciplines such as patient–personnel interaction, technical competency, system/administrative efficiency and clinic setup/environment. Hence, this study attempts to quantify the level of satisfaction with the dental services provided by the College of Dentistry, Taibah University, specifically with reference to these disciplines of interest.

## Materials and Methods

A cross sectional analytical observational study was conducted in at the dental clinics of the college College of Dentistry at Taibah University. A Random random sampling technique over a three-month period was employed starting over a three-month period; from 1st March 1st till end of to May 31st 2012. Respondents were interviewed when they last visited the dentist to ensure that they received the full dental care to be offered. Patients, who did not finish their treatment plans or refused to participate in this study, were excluded from the study. The study included a few children were after having a legal consent from their legal guardians

A self-administered modified questionnaire was used to assess patients' satisfaction with the dental service provided in the dental clinics of the College of Dentistry, Taibah University. The modified questionnaire was based on Othman L. questionnaire,<sup>13</sup> to measure the criteria affecting patients' satisfaction. In addition to the socio-demographic characteristics (*age, gender and nationality*), the questionnaire consisted of 4 sections: patient–personnel interaction (9 items); technical competency (4 items); system/administrative efficiency (4 items) and clinic setup/environment (2 items).

The questionnaire was drafted in the Arabic and English with a 5-point Likert response scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The 5-point scale was later transformed during data analysis to a 3-point response scale ranging from 1 (*disagree*) to 3 (*agree*), with 2 corresponding to “*uncertain*”. Mixtures of negative and positive statements were set to ensure that there is no standard format for answering. Therefore, participants needed to read each item carefully before responding. The questionnaire was validated and pre-tested prior to data collection. It was administered in a private setting with guidance.

Percentages of agreement on the 4 main disciplines of satisfaction were calculated and presented (Table 4), the mean percentages of satisfaction were calculated to estimate the overall ranking analysis of individual satisfaction disciplines.

### Statistical analysis

The data were coded and keyed into the Statistical Package for the Social Sciences software version 19 (SPSS Inc., Chicago, IL) used in Windows 7. Descriptive analysis followed by inferential statistics was done. Percentages, means, and standard deviations were calculated for qualitative and quantitative data. Chi-square test ( $X^2$ ) and Fisher's exact test were performed to statistically analyze qualitative data. A *P*-value of 0.05 was considered

### Ethical consideration

The Research Ethics Committee of the College of Dentistry, Taibah University, approved this study. The waiver of the informed consent process was approved on the basis of the questionnaire's being anonymous and self-administered and containing no identifiers.

## Results

A total of 202 patients qualified for the study, but only 162 agreed to participate with a response rate of 80.19%. Just over half (55.6%) were Saudi nationals whilst the remaining 44.4% were Non Saudis. The mean age was 32.85 years ( $\pm 15.84$ ). The majority of participants were male with a few female children as the services were given at the dental clinic at the male section of the College of Dentistry, Taibah University.

Patient satisfaction was measured according to four disciplines: patient–dentist interaction (Table 1), technical competency (Table 2), administrative and clinic setup (Table 3). It was noticed that the majority of interviewed patients were satisfied with the patient–dentist domain, (96.3%) and (98.1%) of interviewed patients agreed on the items about providers concentration during their work and friendly attitude. However,

this table also shows that 24% of the patients were obliged to receive the dental care by a student.

Tables 2 and 3 showed that more than two thirds of the patient's agreed with the technical competency items, administrative efficiency and clinic setup, 91% reported that privacy of treatment was insured.

Overall ranking of factors related to satisfaction was done by calculating the mean percentage of agreement regarding the different disciplines of satisfaction among the studied group (Table 4). The mean percentage of agreement for the 4 disciplines was 79.5% denoting a high level of satisfaction.

The association between respondents' Nationality and characteristics of the four disciplines of satisfaction revealed significant difference between Saudi and Non Saudis in 2 items

within the patient–dentist interaction “*Dental Staff did not talk with each other while providing treatment*” and “*Dental Staff were concentrating on their work*”. Receiving good quality of treatment in the technical competency domain, suitability of working hours within the administrative efficiency domain and for the 2 items of clinic setup environment are shown by the *P*-values in Table 5.

## Discussion

Quality of care is a major concern of health care providers all over the world. An important element of quality is the satisfaction with the services provided.<sup>14</sup> Patients' satisfaction has

**Table 1:** Participants' satisfaction on patient–dentist interaction.

Item	Disagree <i>N</i> (%)	Neutral <i>N</i> (%)	Agree <i>N</i> (%)
1. Dental staff did not talk with each other while providing treatment	12 (7.4)	30 (18.5)	120 (74.1)
2. Dental staff were concentrating on their work	–	6 (3.7)	156 (96.3)
3. Dentist was friendly with me	3 (1.9)	–	159 (98.1)
4. Dentist explained the procedures before start of treatment	12 (7.4)	24 (14.8)	126 (77.8)
5. Dentist gave me advices after treatment	3 (1.9)	21 (13)	138 (85.2)
6. Dentist facial's expression was cheerful with a smile	12 (7.4)	24 (14.8)	126 (77.8)
7. Dentist did not criticize my oral condition or compared it with others	15 (9.3)	21 (13)	126 (77.8)
8. Dentist did not ask personal question during offering care	–	18 (11.1)	144 (88.9)
9. I was not obliged to receive dental care by a student	84 (51.9)	39 (24.1)	39 (24.1)

**Table 2:** Participants' satisfaction with technical competency.

Item	Disagree <i>N</i> (%)	Neutral <i>N</i> (%)	Agree <i>N</i> (%)
10. Treatment offered was not painful	18 (11.1)	33 (20.4)	111 (68.5)
11. Thorough dental examination	6 (3.7)	27 (16.7)	129 (79.6)
12. I received good quality treatment; e.g. filling did not get dislodged or broken	18 (11.1)	39 (24.1)	105 (64.8)
13. Dental instrument used were sterilized	6 (3.7)	15 (9.3)	141 (87)

**Table 3:** Participants' satisfaction with administrative efficiency and clinic setup environment.

Item	Disagree <i>N</i> (%)	Neutral <i>N</i> (%)	Agree <i>N</i> (%)
<i>Administrative efficiency</i>			
14. Working hours of the clinic were suitable for me	18 (11.1)	15 (9.3)	129 (79.6)
15. I did not wait for long time to have an appointment	36 (22.2)	9 (5.6)	117 (72.2)
16. Short waiting time to get the treatment	12 (7.4)	18 (11.1)	132 (81.5)
17. Complete dental treatment	15 (9.3)	12 (7.4)	135 (83.3)
<i>Clinic setup environment</i>			
18. Comfortable waiting area	18 (11.1)	21 (13)	123 (75.9)
19. Privacy of treatment was insured	–	15 (9.3)	147 (90.7)

**Table 4:** Overall satisfaction for the four main disciplines.

Item	Minimum % (Agree)	Maximum % (Agree)	Mean % (Agree)	SD
Patient dentist interaction (PDI) (9 items)	24.1	98.1	77.7	±21.87
Technical competency (TC) (4 items)	64.8	87	74.97	±10.18
Administrative efficiency (AE) (4 items)	72.2	83.3	79.15	±4.8
Clinic setup environment (CS) (2 items)	75.9	90.7	83.3	±10.46
Overall average percent mean score (19 items)	51.9	98.1	79.5	±10.93

**Table 5:** Association between Nationality and characteristics of the four disciplines of satisfaction.

Item	Nationality		Total N = 162%	P value
	Saudi N = 90 55.6%	Non-Saudi N = 72 44.4%		
<i>Patient–dentist interaction (PDI)</i>				
1. Dental staff did not talk with each other while providing treatment	72 (80)	48 (66.7)	120 (74.1)	<0.0001**
2. Dental staff were concentrating on their work	90 (100)	66 (91.7)	156 (96.3)	0.007**
3. Dentist was friendly with me	90 (100)	69 (95.8)	159 (98.1)	0.86
4. Dentist explained the procedures before start of treatment	72 (80)	54 (75)	126 (77.8)	0.75
5. Dentist gave me advices after treatment	75 (83.3)	63 (87.5)	138 (87.5)	0.28
6. Dentist facial's expression was cheerful with a smile	72 (80)	54 (75)	126 (77.8)	0.75
7. Dentist did not criticize my oral condition or compared it with others	72 (80)	54 (75)	126 (77.8)	0.44
8. Dentist did not ask personal question during offering care	81 (90)	63 (87.5)	144 (88.9)	0.39
9. I was not obliged to receive dental care by a student	27 (30)	12 (16.7)	39 (24.1)	0.11
<i>Technical competency (TC)</i>				
10. Treatment offered was not painful	60 (66.7)	51 (70.8)	111 (68.5)	0.61
11. Thorough dental examination	72 (80)	57 (79.2)	129 (79.6)	0.96
12. I received good quality treatment	66 (73.3)	39 (54.2)	105 (64.8)	0.026*
13. Dental instrument used were sterilized	78 (86.7)	63 (87.5)	141 (87)	0.91
<i>Administrative efficiency (AE)</i>				
14. Working hours of the clinic were suitable for me	69 (76.7)	60 (83.3)	129 (79.6)	0.026*
15. I did not wait for long time to have an appointment	66 (73.3)	51 (70.8)	117 (72.2)	0.37
16. Short waiting time to get the treatment	78 (86.7)	54 (75)	132 (81.5)	0.11
17. Complete dental treatment	75 (83.3)	60 (83.3)	135 (83.3)	0.87
<i>Clinic setup environment (CS)</i>				
18. Comfortable waiting area	60 (66.7)	63 (87.5)	123 (75.9)	<0.001**
19. Privacy of treatment was insured	87 (96.7)	60 (83.3)	147 (90.7)	0.004**

Only those who agree on each of these statements are represented in this table.

\* Significant at 0.05 level (Fisher's exact test used).

\*\* Significant at 0.01 level (Fisher's exact test used).

been investigated in many Colleges of Dentistry in various countries.<sup>12</sup> These studies found that patients attending dental clinics under the Colleges of Dentistry were in their thirties or forties (The mean age in this study was  $32.85 \pm 15.84$ ). The most cited reason for seeking care in these clinics is attributed to perceptions of high quality service and concern for the patients' well-being. Other studies found that the most important reason for attending these clinics to be low cost of service.<sup>12,15–17</sup>

This study employed a self administered questionnaire that required less than 5 min to be completed and which has been shown to be an efficient and effective tool for collecting information.

A response rate of 80% is relatively high similar to the response rate of a study conducted in the College of Dentistry at King Saud University,<sup>12</sup> and comparable with the response rates from other similar surveys.<sup>6,18</sup> Females were almost not represented in this study which is due to the fact that this study was conducted on the male section of the College of Dentistry and the female clinics were not operating yet. Conclusions of this study will serve as a situation analysis for factors affecting patient satisfaction with a direct impact on the quality of care provided.

The average percent mean score for satisfaction (19 items) as shown by Table 4 shows a mean percentage of ( $79.5 \pm 10.93\%$ ), although this is considered high, it was still lower than that reported by Bedi et. al (89%)<sup>6</sup> but better than the satisfaction response reported by Othman and Abdel-razak

(61.7%).<sup>2</sup> Generally, this finding was similar to those reported by the British Dental Association independent polls,<sup>19</sup> which showed that as many as 9 out of 10 people have confidence in the treatment they receive. A study conducted by Othman and Jaafar<sup>1</sup> showed similar findings. However the overall results on satisfaction do not tell us about the weaknesses of the service or the problem encountered. Only further probing on the specific aspect of care will reveal areas of expressed dissatisfaction.<sup>2,20</sup>

Dentists explained the procedures before the treatment, which is a very important aspect in the patient–dentist satisfaction domain represented with 78% of satisfaction among the studied sample, which is contrary to what was found by Othman and Abdel Razak (45.6%)<sup>2</sup>, and this could be due to implementing this study in an educational setting, which put high priorities on educating the students on and about the ideal way of communication and patient–dentist interaction. Rankin and Haris reported that patients dislike having a dentist who begins treatment without any explanation.<sup>21</sup>

Unlike what was found by Othman and Abdel Razak regarding the personality of the dentists who were cheerful, smiling, and friendly, our patients were more satisfied with a 98.1% level of satisfaction compared to 54.3%.<sup>2</sup> Geboy, stated that the patients' first impression, in particular, is influenced by appearance, including clothing, and often has a lasting impact, although additional contact may change these initial interpersonal perceptions.<sup>22</sup>



Around 52% of the study sample reported that they were obliged to receive dental treatment by a student; this left almost half of the respondents with neutral and dissatisfied feeling regarding this issue. This can also be explained that the facility offering the service is at an academic institute mainly for the purpose of educating its student–dentists and providing dental care services to the community.

The overall satisfaction from the technical competency (Mean % of agreement 74.97%) was considered very high. It can be deduced that this study found most of the items under technical competency acceptable.

The least satisfaction was from the quality of treatment offered (65%) very similar to the Othman and Abdel Razzak study (76%). Table 5 shows significant statistical difference between Saudi and Non Saudi Nationalities regarding the satisfaction with the quality of dental treatment offered 73.3% and 54.2% respectively  $P = 0.026^*$ . This could be attributed to the higher expectations of Non Saudi nationals. It is possible that satisfaction with the treatment could be affected by the perception of cleanliness. Boswell<sup>23</sup> and Awliya<sup>12</sup> suggested that if patients were concerned about asepsis, this might hamper confidence in the office. In this study, 87.5% of the respondents felt comfortable with the procedures taken to protect them from the spread of infectious disease.

Concerning the administrative efficiency domain, there were slightly more Saudi patients compared to Non-Saudis who attended the dental clinic. We can also note significant statistical differences between Saudi and Non-Saudi nationals regarding the working hours of the clinic (76.7% and 83.3% respectively) with an overall satisfaction of 79.6%. This can be related to the fact that the majority of Saudis are engaged in governmental jobs with no official lunch breaks that could be used to visit dental clinics, whereas the majority of Non Saudis were engaged in morning and night shifts with a break time in between.

The question related to “Comfortable waiting area” also showed a significant statistical difference between Saudi and Non Saudi nationals. This may be attributed to the higher expectations of the Saudi nationals regarding the services offered by a clinic supervised by a College of Dentistry, which is an academic institute offering a specialized dental care service in Almadinah Almunawwarah area.

Although there was a significant statistical difference between Saudis and Non Saudis regarding privacy of the offered treatment, both showed high satisfaction levels (90%), low percentage of un-satisfaction that may be attributed to design of the clinics.

A limitation of this study was the exclusion of the female dental care due the fact that the female clinic is still under construction and hasnot yet provided any services.

This study will act as a guide for dental staff members on both male and female campuses to ensure patient satisfaction as an indicator for the quality of dental services, being part of the total quality management policy of the college and the university.

## Conclusion

The results indicated that the majority of patients were satisfied with the patient–dentist interaction, technical competency, administrative efficiency and clinic set up

environment at the dental clinic at the College of Dentistry, Taibah University.

## Recommendation

Evaluation of patient satisfaction is to be part and parcel of the oral health care delivery by the College of Dentistry, Taibah University, and measures should be taken to reduce and eliminate any source of dissatisfaction.

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