

Assessment of Patient Satisfaction toward Dental Care Services of Patients visiting Dental Schools in Udaipur, Rajasthan, India

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ABSTRACT

Introduction: Dental problems are normal now a days. Major and minor oral and dental problems require dental schools and hospital services for overall population. Patient satisfaction with dental care also will impact the future usage of the utilization of dental services.

Objective: To assess the patient satisfaction towards the quality of dental care services provided by dental schools, Udaipur, Rajasthan.

Materials and methods: A cross-sectional study was conducted among 300 hundred patients' of two recognized dental schools of Udaipur, Rajasthan. Self-administered structured questionnaire was used to measure the criteria affecting patient's satisfaction according to Patient's knowledge, Patient-dentist interaction, Technical competency (TC), Administrative efficiency (AE), dental school set-up environment (DS). Percentages, means and standard deviation were calculated for qualitative and quantitative data. Chi-square test (X^2) was performed to statistically analyze qualitative data. A p-value of 0.05 was considered.

Results: Highly significant difference was found between the association of place (rural and urban) and characteristics of four discipline of satisfaction.

Conclusion: The outcomes showed that the patient was satisfied by the patient–dentist interaction, TC, AE and DS. This survey provided a means of assessing satisfaction of the patients currently receiving treatment in the Dental schools. The results could facilitate focusing on patient complaints and attending to the concerns of dissatisfied patients.

Keywords: Dental services, Health care quality, Patient satisfaction.

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INTRODUCTION

Dental problem are normal now a days.¹ Major and minor oral and dental problems require dental schools and hospital services for overall population.^{2,3} Oral health of the patient has an important effect on patient satisfaction.⁴ Patient satisfaction with dental care also will impact the future usage of the utilization of dental services.⁵

Satisfaction can be characterized as the degree of an individual experience compared with his or her desires.⁶ Nature of treatment depends on facilities available.^{7,8} Awareness in regards to dental wellbeing has prompted to change in patients' state of mind towards nature of dental treatment.⁹

The role of dental specialist is critical to enhance the nature of dental administration and to expand patients' fulfillment level, readiness to utilize the administration once again and to refers the dental services to others.¹⁰

So, as to enhance the patients' fulfillment, the nature of dental treatment gave alone is insufficient, alternate components which have a role are the environment in which it is given, the free charged gave in the dental school and hospital.¹¹ Dentist-patient interaction quiet association amid a discussion including subjective and emotional viewpoints have been exhibited to influence tolerant consistence with clinical guidance and follow-up visits.⁵ Understanding variables and components that influence fulfillment level can help as enhance the nature of administrations gave by the dental group, fortify the trust amongst patient and dental practitioner and subsequently enhance oral wellbeing.^{5,12,13}

Chung et al recommended elements that specifically influence ability to visit a hospital again are desire level toward hospital, reliability of the medicinal care, accessibility to the diagnosis, expanses for medicinal care and patient fulfillment level.¹³

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Kashinath et al¹⁴ concentrated the mentalities of patients' going to opd of Sree Siddhartha dental college, tumkur and found that the patients' disappointed when their needs were not satisfied. Sharma and Chowhan¹⁵ in their research paper demonstrated that the greater part of the patients' met in their review were satisfied with the dental services they got at opd further more from the state of attitude of staff.

Different reviews have demonstrated that the disappointment with quality and charges have been connected with generally poor consistence with treatment recommendation, low usage or end of treatment.¹⁶

This study has been done to measure the rural and urban patients' satisfaction about facilities, services and treatment offered by dental schools in Udaipur, Rajasthan.

MATERIALS AND METHODS

Study Design, Setting, and Population

A cross-sectional study was conducted among 300 patients' of two recognized dental schools of Udaipur, Rajasthan for a period of two months. A total of three hundred study subjects participated in the study.

Ethical Clearance and Official Permission

Ethical approval and official permission were obtained from ethical committee of pacific dental college and hospital and official permission was taken from the principal of dental schools of Udaipur, Rajasthan to conduct a study.

Sampling Methodology

Among the 4 dental schools in the Udaipur state of Rajasthan, two recognized dental schools were selected for the study.

Sample Size Calculation

The sample size was calculated using the formula:

$$N = \frac{Z^2 \alpha p q}{L^2}$$

Where,

p = patients overall satisfaction

q = 100-p

Z α = confidence factor for type I error α = 5% = 1.96;

L = allowable error, i.e., 10% of p

Where p = 60%

q = 100-60 = 40%

Z α = 1.96

L = 10% of p = 6

$$\frac{(1.96)^2 \times 60 \times 40}{6^2} = 256 \text{ subjects}$$

The maximum sample size was attained from overall patient satisfaction and hence, rounded off to 300.

Inclusion Criteria

- Patient who finished their treatment and voluntarily agreed to participate in the study.
- Patient above the age of eighteen years.

Exclusion Criteria

- Patient who was not willing to participate in the study and unable to give informed consent.

Survey Instrument

A pretested self-administered questionnaire was used to assess patient's satisfaction towards the quality of dental care services provided by two dental schools, Udaipur, Rajasthan. The modified questionnaire was based on Othman,¹⁷ questionnaire, to measure the criteria affecting patients' satisfaction. Questionnaire was closed ended questions, written in English with a dichotomous scale.

The questionnaire consisted of five Sections.

Demographic details-Information, Patients' satisfaction according to their knowledge, Patients' satisfaction with patient-dentist interaction (PDI), Patients' satisfaction with technical competency (TC), Patients' satisfaction with administrative efficiency (AE) and dental school set-up environment (DS).

Survey Methodology

Respondents were interview when they last visited the dentist to ensure that they received the full dental care to be offered. The questionnaire was administered using face to face, interview and further informed them about the purpose and methods of the study. The written informed consent was obtained from each of the patient and assisted them to fill the questionnaire. Five to ten minutes were taking by the patient to complete questionnaire. The daily and weekly schedules were prepared and in a single day, maximum of 15 to 20 proforma filled by the patients among the two dental schools. Filled questionnaire proforma was collected and analysis.

Statistical Analysis

The data were entered in the Microsoft Excel spreadsheet and processed using the statistical package for social sciences version 20 (Inc. Chicago, Illinois, USA). Descriptive analysis followed by inferential statistic was done. Percentages, means and standard deviation were calculated for qualitative and quantitative data. Chi-square test (X^2) was performed to statistically analyze qualitative data. A p-value of 0.05 was considered.

RESULTS

A total of three hundred patients agreed to participate in this study.

Table 1 shows the details of socio-demographic profile of patients including (Age, Sex, Education, Income and Place) Just over half (59%) were rural patients while the remaining (41%) were urban patients. The study participants consisted of (68%) males and about (32%) were aged between 31 and 40 years. Majority participants (30.7%) were graduates holders. The highest proportion of the participants that consisted of (44.3%) had a monthly income between 5000 and 8000 rupees.

Table 2 shows the percentage and frequency based on patient's knowledge calculated individually according to place (rural and urban).

High proportion of the patients from rural area was (59%) visited the dentist only when in need and the patients from urban area (21.3%) visited the dentist for regular check-up. Majority of participants' from rural area was (30.3%) and from urban area (41%) come to know about the dental school through advertisements/camp. Most of the patients from rural area (56.3%) and from urban area (35%) decide on taking treatment from dental school because of concessional fees and the participants who won the highest proportion (59%) and (24%) from rural and urban area rate the charges of treatment procedures provided was cheap.

Patient satisfaction was measured according to four disciplines-PDI, TC, AE and DS (Table 3). Majority of interviewed patients were satisfied with the patient-dentist domain (88%) and (73%) of interviewed patients

Table 1: Demographic distribution of study subjects (N = 300)

Demographic variable	Number (n%)
<i>Age (in years)</i>	
18–30	83 (27.7%)
31–40	96 (32.0%)
41–50	66 (22.0%)
Above 50	55 (18.3%)
<i>Sex</i>	
Male	204 (68.0%)
Female	96 (32.0%)
<i>Education</i>	
Uneducated	8 (2.7%)
Primary school	91 (30.3%)
High school	81 (27.0%)
Graduate	92 (30.7%)
Post-graduate	28 (9.3%)
<i>Income</i>	
>10000	53 (17.7%)
5000–8000	81 (27.0%)
2000–4000	133 (44.3%)
1000–1500	33 (11.0%)
<i>Place</i>	
Rural	177 (59.0%)
Urban	123 (41.0%)

said "Yes" on the items about "Dentist did not ask personal question during offering care" and "Concentration during their work."

Table 4 shows within the TC items majority of patients (81.3%) said "Yes" an item about "I received good quality of treatment" (80%) said "Yes" an item about "Dental instruments used were sterilized" (77.3%) and (68.7%) said "Yes" on the items about "Treatment offered was not painful" and "Thorough dental examination".

Table 2: Participant's satisfaction according to their knowledge

Item	Response	Rural n (%)	Urban n (%)
When do you visit a dentist?	When in need	177 (59.0)	59 (19.7)
	Regular check-up	0	64 (21.3)
How did you come to know about the dental school?	Friends/Relatives	86 (28.7)	0
	Advertisements/Camp	91 (30.3)	123 (41.0)
Why did you decide to take the treatment from dental school?	Concessional fees	169 (56.3)	105 (35.0)
	Quality of treatment	8 (2.7)	18 (6.0)
How do you rate the charges of treatment procedures provided?	Cheap	177 (59.0)	72 (24.0)
	Costly	0	51 (17.0)

Table 3: Participant's satisfaction with PDI

Item	Rural n (%)	Urban n (%)
Dental staff did not talk with each other while providing treatment	170 (56.7)	130 (43.3)
Dental staff was concentrating on their work	219 (73.0)	81 (27.0)
Dentist was friendly with me	174 (58.0)	126 (42.0)
Dentist explained the procedure before starting the treatment	209 (69.7)	91 (30.3)
Dentist gave me advice after treatment	195 (65.0)	105 (35.0)
Dentist facial's expression was cheerful with a smile	193 (64.3)	107 (35.7)
Dentist did not criticize my oral condition or compared it with others	264 (88.0)	36 (12.0)
Dentist did not ask personal question during offering care	202 (67.3)	36 (12.0)
I was not obliged to receive dental care by a student	169 (56.3)	131 (43.7)

Table 4: Participant's satisfaction with TC

Item	Yes n (%)	No n (%)
Treatment offered was not painful	232 (77.3)	68 (22.7)
Thorough dental examination	206 (68.7)	94 (31.3)
I received good quality treatment, e.g., filling did not get dislodged or broken	244 (81.3)	56 (18.7)
Dental instruments used were sterilized	240 (80.0)	60 (20.0)

Table 5: Participant's satisfaction with AE and dental school setup environment

Item	Yes n (%)	No n (%)
<i>Administrative efficiency</i>		
Working hours of dental school were suitable for me	191 (63.7)	109 (36.0)
I did not wait for long time to have an appointment	212 (70.7)	88 (29.3)
Short waiting time to get the treatment	168 (56.0)	132 (44.0)
Complete dental treatment	279 (93.0)	21 (7.0)
<i>Dental school set-up environment</i>		
Comfortable waiting area	281 (93.7)	19 (6.3)
Privacy of treatment was insured	110 (36.7)	190 (63.3)

Table 6: Overall satisfaction for the four main disciplines

Item	Minimum% (Yes)	Maximum% (Yes)	Mean% (Yes)	SD
Patient dentist interaction (9 items)	169 (56.3)	264 (88.0)	66.4	± 9.97
Technical competency (4 items)	206 (68.7)	244 (81.3)	76.82	± 5.67
Administrative efficiency (4 items)	168 (56.0)	279 (93.0)	70.85	± 15.94
Dental school set-up environment (2 items)	110 (36.7)	281 (93.7)	65.20	± 40.30
Overall average percent mean score (19 items)	168 (56.0)	281 (93.7)	69.44	± 14.18

Table 5 shows with in the AE and DS (93.7%) and (93%) reported that "Comfortable waiting area" was insured and "Complete dental treatment".

Table 6 shows the percentage of responses "Yes" on the four main disciplines of satisfaction. The mean percentages and standard deviation of satisfaction were calculated to estimate the overall ranking analysis of individual satisfaction. The mean percentage of patient said "Yes" for the four disciplines was (69.44%) and standard deviation was (± 14.18).

Highly significant difference was found between the association of place (rural and urban) and characteristics of four discipline of satisfaction (Table 7). Patients within the PDI there was nine items – Dental staff did not talk with each other while providing treatment, Dentist explained the procedure before start of treatment, Dentist did not ask personal question during offering care, I was obliged to receive dental care by a student ($p < 0.0001$), Dentist gave me advices after treatment ($p < 0.001$), Dentist did not criticize my oral condition or compared with it others ($p = 0.009$) which denoting a highly significant p-values and Dentist was friendly with me ($p = 0.026$). Technical competency there was four items-Treatment offered was not painful, Thorough dental examination, I received good quality of treatment, Dental instruments used were sterilized ($p < 0.0001$). All of them show highly significant p-values. Administra-

tive efficiency there was two items-Working hours of the dental school was suitable for me ($p < 0.0001$), I did not wait for long time to have an appointment ($p = 0.002$). Both of each having highly significant p-values.

DISCUSSION

Quality of health care is an extensive task of health services suppliers everywhere throughout the world. A vital component of value is the fulfillment with the administrations provided.¹⁸ Patients' fulfillment has been explored in numerous universities of dentistry in different countries.¹⁹

The aim of our study is to determine the level of satisfaction in regards to the nature of dental consideration among patients of two recognized dental schools Udaipur. Three hundred patients were effectively taken an interest and reflect their involvement with past dental care, their fulfillment and disappointment with nature of dental care.

In the present study, the primary reason behind patients going to the dentist was when they need dental treatment out of which (59%) respondents were from rural areas and (19.7%) were from urban region. The study done by Nagashree Savanur, Ravindranath²⁰ in Bangalore, results from the survey showed that (67.8%) had gone to the dentist at least once whereas (32.2%) had never gone

Table 7: Association between place and characteristics of the four disciplines of satisfaction

Item	Place		Total n = 300 (%)	p-value
	Rural n (%)	Urban n (%)		
<i>Patient-dentist Interaction</i>				
Dental staff did not talk with each other while providing treatment	145 (48.3)	25 (8.3)	170 (56.7)	<0.0001**
Dental staff was concentrating on their work	134 (44.7)	85 (28.3)	219 (73.0)	0.21
Dentist was friendly with me	112 (37.3)	62 (20.7)	174 (58.0)	0.026*
Dentist explained the procedure before starting the treatment	141 (47.0)	68 (22.7)	209 (69.7)	<0.0001**
Dentist gave me advices after treatment	102 (34.0)	93 (31.0)	195 (65.0)	<0.001**
Dentist facial's expression was cheerful with a smile	121 (40.3)	72 (24.0)	193 (64.3)	0.08
Dentist did not criticize my oral condition or compared it with others	163 (54.3)	101 (33.7)	264 (88.0)	0.009**
Dentist did not ask personal question during offering care	102 (34.0)	100 (33.3)	202 (67.3)	<0.0001**
I was not obliged to receive dental care by a student	157 (52.3)	12 (4.0)	169 (56.3)	<0.0001**
<i>Technical competency</i>				
Treatment offered was not painful	156 (52.0)	76 (25.3)	232 (77.3)	<0.0001**
Thorough dental examination	138 (46.0)	68 (22.7)	206 (68.7)	<0.0001**
I received good quality treatment, e.g., filling did not get dislodged or broken	162 (54.0)	82 (27.3)	244 (81.3)	<0.0001**
Dental instruments used were sterilized	156(52.0)	84(28.0)	240(80.0)	<0.0001**
<i>Administrative efficiency</i>				
Working hours of the college were suitable for me	168 (56.0)	23 (7.7)	191 (63.7)	<0.0001**
I did not wait for long time to have an appointment	113 (37.7)	99 (33.0)	212 (70.7)	0.002**
Short waiting time to get the treatment	104 (34.7)	64 (21.3)	168 (56.0)	0.25
Complete dental treatment	166 (55.3)	113 (37.7)	279 (93.0)	0.52
<i>Dental school set-up environment</i>				
Comfortable waiting area	167 (55.7)	144 (38.0)	281 (93.7)	0.56
Privacy of treatment was insured	62 (20.7)	48 (16.0)	110 (36.7)	0.48

Only those who say yes on each of these statements are represented in this table: *Significant at 0.05 level; **Significant at 0.01 level

to the dentist. The pattern is similar to the findings of the study led by Zhu et al²¹ in China where just (68%) of 35 to 44 years old subjects had made at least one dental visit in their lifetime.

When we compared it with other studies done by Wedad Y. Awliya¹⁹ demonstrated that the primary reason behind patients going to the dental hospital was the availability of up-to-date care. In the present study, (28.7%) of the respondents from rural areas came to know about the dental school by friends/relatives and (30.3%) from rural respondents (41%) respondents from urban areas were known about the dental school through advertisement/camp. When we compare it with other studies like Alvesalo and Uusi-Heikkist²² in Finland (34%) subjects went to a dentist as prescribed by friends and neighbors. This obviously demonstrates that the significance of social environment for choosing of dental practitioner. However, in our study larger part of patients came to dental school from both rural and in addition urban territories since they knew about dental treatment through camps and advertisements.

In the present study, we included four main disciplines like PDI, TC, AE and DS. It was observed that (56.7%) responded that the dental staff did not had

interaction during the treatment, majority of respondent (73%) answered that the dentist were oriented towards the dental care treatment to the patients, (58%) of dentist had friendly nature while treating the patients with smile on their face. A majority people (88%) supported saying that the dentist did not criticize or involved in asking personnel questions (67.3%) regarding the individual oral health of the patients. When we compare it with other studies done by Mohamed Mahrous and Tamer Hifnawy²³ in Saudi Arabia, results showed that dentist explained the procedure before the treatment which is very important aspect in the patient- dentist satisfaction domain represented with (78%) of satisfaction among studied sample which is contrary to what was found by Othman and Razak²⁴ (45.6%).

Likewise the study conducted by Vaidyanathan et al,²⁵ the results showed that (100%) of people felt that the explanation given for the treatment was excellent, (94.1%) of the people felt that the dentist explained the treatment needed well by Hashim.⁵ In our study, (56.3%) of the respondents was not obliged to receive dental care by student similarly the study conducted by Nagappan²⁶ results showed that (29.9%) of the patients feels that they had problem in contacting student dentist which was

higher than the study conducted by Awliya et al¹⁹ which was contrary to the results conducted by Mohamed Mahrous²³ in Taibah university, Saudi Arabia which showed around (52%) of the study sample reported that they were obliged to receive dental treatment by a student.

In present study, (58%) of the respondents stated that dentist was friendly with them and (64.3%) of the respondents stated that dentist facial's expression was cheerful with smile and (69.7%) stated that dentist explained the procedure before start of the treatment similarly, other studies done by Nagappan²⁶ India, showed that (98.3%) of the patients felt that the proposed treatment was clearly explained to them, which was higher than our results (69.7%) but lower than the study conducted by Hashim⁵ in Emirate of Ajman.

Appropriate communication is one of the elements expected to achieve patient satisfaction and motivate them to proceed their treatment and proper communication between patient and dentist can assume an imperative role in understanding patient's chief complaint, and therefore, conducting the most appropriate treatment.²⁷⁻³⁰

This is supported by the studies conducted by Shrestha et al;³¹ Madan et al,³² Mahrous and Hifnawy,²³ Murtomaa and Masalin³³ in Finland. It has been accounted that patients prefer a caring and pleasant dentist to a skilled one alone.

The overall satisfaction from PDI was high (66.4%), i.e., the mean percent of agreement.

In the present study results from the second discipline, i.e., patient satisfaction with TC showed that (77.3%) of the respondents stated that treatment offered was not painful, (68.7%) stated that there was a thorough dental examination, (81.3%) stated that they received good quality of treatment and (80%) of the respondents stated that dental instruments used were sterilized. When we compared to the other studies, the similar results showed that (90%) of the respondents felt comfortable with the cautions taken to protect them from the spread of infectious disease. The study done by Gerbert et al³⁴ in USA, an astounding while other studies done by Nagashree Savanur Ravindranath,²⁰ Arunadevi Manikyam²⁰ in Bengaluru showed that only (54.2%) felt that the dentist instruments are clean, (88%) subjects felt that precautions were followed by dentist to keep instrument sterile and (87%) agree that dentist do good work.

The overall satisfaction from TC was high (76.82%), i.e., the mean percent of the agreement.

In present study result from third discipline, i.e., patient satisfaction with AE showed that (63.7%) of the respondents stated that working hours of dental school were suitable for them, (70.7%) showed that they did not wait for long time to have an appointments (56%) showed

that short waiting time to get the treatment and (93%) stated that they got complete dental treatment.

The majority of the patients who participated in this study were satisfied but other studies done by Javid Y Patel³⁵ showed that long waiting time for the treatment seemed to be the main reason for patient dissatisfaction. Dissatisfaction with waiting time in a clinic reveals an important problem that needs to be resolved, possibly through limiting the number of patients to reduce the waiting time.³² The study done by Nagappan²⁶ (31.9%) of the patients felt that they had a problem in scheduling appointments. In Finland (49.5%) respondents agreed that dentist "Dentist makes patients wait for a long time" contrasting results were obtained in a study done in UK^{36,37} where only (24%) respondents agree to similar statement.

The overall satisfaction from AE was high (70.8%), i.e., the mean percent of the agreement.

Results from fourth discipline, i.e., patient satisfaction with DS showed that 93.7% of respondents' states that the waiting area was comfortable and 63.3% of the respondents were not agreed by this statement of privacy of the treatment were insured. Overall satisfaction from DS (65.2%), i.e., the mean percent of the agreement.

Overall satisfaction of the four main disciplines was (69.4%) which is high. An over view of the results revealed a high level of overall patient satisfaction.

Highly significant result was found in association between place and characteristic of the four disciplines of satisfaction.

While we compare it to similar study done by Mahrous and Hifnawy²³ showed that the highly significant statistical difference between Saudi and Non-Saudi in two items within the PDI was Dental staff did not talk with each other while providing treatment and Dental staff were concentrating on their work, two items within clinic set up environment – Comfortable waiting area and Privacy of treatment was insured.

A limitation of this study was due to the little specimen size it is hard to reason that patients were fulfilled by the treatment gave dental specialist connection towards patients and facilities environment and personnel facilities may affect the outcomes.

CONCLUSION

- The outcomes showed that the patient was fulfilled by the PDI, TC, AE and DS.
- Patients' from rural and urban areas were more satisfied on taking treatment from dental schools because of concessional fees and the charges of treatment procedures provided were very cheap.
- This survey provided a means of assessing satisfaction of the patients currently receiving treatment in the Dental schools. The results could facilitate focusing

on patient complaints and attending to the concerns of dissatisfied patients.

RECOMMENDATION

Assessment of patient fulfillment is to be an integral part of the oral medicinal services conveyance by the Dental schools of Udaipur, Rajasthan and measures ought to be taken to lessen and eliminate any wellspring of disappointment. The comments and suggestions also provided useful information about issues important to patients and ways to address them.

Future studies may be needed to compare patients' satisfaction in the Dental School with other dental care providers.

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