

Satisfaction from Oral Health Services among Patients Attending a Teaching Dental Hospital in Nepal

Dr. Alok Sagtani,¹ Dr. Reshu Agrawal Sagtani,² Dr. Yangjee Sherpa,³
Dr. Tshristi Rijal,⁴ Dr. Prakash Bhattarai,⁵ Dr. Neeraj Pant⁶

¹ Department of Dentistry, Patan Academy of Health Sciences, Lalitpur, Nepal; ² School of Public Health, Patan Academy of Health Sciences, Lalitpur, Nepal; ³ Phaplu District Hospital, Solukhumbu, Nepal; ⁴ Smile Dental Clinic, Kathmandu, Nepal;

⁵ Department of Orthodontics and Dentofacial Orthopaedics, Nepal Medical College, Kathmandu, Nepal;

⁶ Department of Oral and Maxillofacial Surgery, Nepal Medical College, Kathmandu, Nepal

Correspondence: Dr. Reshu Agrawal Sagtani. Email: reshu.sagtani@gmail.com

ABSTRACT

Introduction: Patient satisfaction is being increasingly accepted as an indicator of quality care and efficient delivery of health care services. There is growing evidence that satisfied patients tend to be cooperative, compliant and more responsive to treatment regimens. However, this is an area of research which has very less information in Nepalese context.

Objective: To assess the level and factors associated with satisfaction from oral health care services among patients attending various dental departments of a teaching college in Kathmandu.

Materials and Method: A cross-sectional study was conducted among 250 patients in five dental departments at Nepal Medical College Teaching Hospital from January 2015 to June 2015. A valid 31 item dental satisfaction tool was used in the study. The survey questionnaire was modified and translated to fit our local context. The questionnaire consists of four domains namely context, content, outcome and cost of dental health services.

Result: There was high level satisfaction among patients receiving dental services with mean score of 4.24 ± 0.04 out of five. The satisfaction level was not associated with socio-demographic variables like age, sex, literacy, income, and number of hospital visits ($p > 0.05$). The patients were highly satisfied with the waiting area of department of Prosthodontics compared to other departments like Conservative dentistry ($p = 0.025$), Oral Surgery ($p = 0.003$) and Orthodontics ($p = 0.012$).

Conclusion: The patients showed high level of satisfaction in all four domains of the satisfaction questionnaire irrespective of age, sex, literacy, income, and number of visits.

Keywords: Consumer satisfaction; dental services; teaching hospital.

INTRODUCTION

Consumer satisfaction is playing an increasingly important role in quality care reforms and health-care delivery in developed countries of North America and Europe.¹ This can be attributed to the research findings which conclude that satisfied

patients are more likely to complete treatment regimens, be compliant and cooperative.^{2,3}

Similarly, patient satisfaction is seen as an essential element in assessments of quality of oral care as well.⁴ It is well documented that for improved patient-centered care, dentists should assess

patients' desires, expectations, and perceptions of the dental care experience.⁵ Patient satisfaction is a subjective assessment and, by inviting consumers to express their opinions on their health care experience, studies of satisfaction may provide a measure of the success of a health care program.

Although a number of patient satisfaction studies regarding general health care have been conducted in Nepal, the information regarding oral health services is limited. Also, oral health services are different from other health services in terms of social and professional environment and not just treatment procedures. With this background, a cross-sectional survey was conducted with an aim to assess the level of satisfaction among patients attending various dental departments of a teaching college in Kathmandu, Nepal.

MATERIALS AND METHOD

A cross sectional study was conducted over a period of January and June 2015 among 250 patients from five dental outpatient departments namely Oral Surgery, Periodontics, Prosthodontics, Orthodontics, and Conservative Dentistry and Endodontics of Nepal Medical College Teaching Hospital (NMCTH). The patients were selected purposively and face-to-face interviews were conducted after their appointment for the day was over. By reviewing literature, the 31-item dental satisfaction questionnaire developed by Australian Institute of Health and Welfare Dental Statistics and Research Unit, University of Adelaide, Australia⁶ was identified and three items namely preferred professional, no untreated problem and financial protection were excluded to match the Nepalese context. The questionnaire consists of four domains with respective dimensions and items as shown below:

Domain	Dimensions	Items
Context	Location, Waiting time, facilities, clinic staff, dental professional	1,2,3,4,5,6,7,8,9,10,11
Content	Communication, services provided	12, 14, 15,16,18,19,20,21
Outcome	Service results, speed, value, usefulness of information	22,23,24,26,27,28
Cost	Communication and justification, affordability	13,17,25

The questionnaire was translated into Nepali language following standard translation guidelines. The study tool was pretested through a pilot survey to check for reliability and validity. Sample size was calculated using the formula estimating the population mean by taking 95% confidence interval and 5% of relative precision (d). The overall mean and SD for satisfaction was 4.13 ± 0.55 according the reference article.⁶ Using all these values, a sample size of 29 was calculated using the following formula,

$$\begin{aligned} \text{Sample size (n)} &= \left[\frac{Z_{\alpha/2}^2 * SD^2}{d^2} \right] \\ &= \frac{\{(1.96)^2 * (0.55)^2\}}{(0.206)^2} \\ &= 28.75 \text{ or } 29 \end{aligned}$$

By amplifying the sample size by 10% for non-response and 10% for response errors, the final estimated sample size was $29 + 5.8 = 35$. A round figure of 50 patients was selected. The study was planned to be done in five dental departments so, the final sample size was $50 * 5 = 250$.

Data were entered, coded and edited using Microsoft Excel. The data were then analyzed using the Statistical Package for Social Science (SPSS) version 18.0. Internal consistency was checked with the help of Cronbach's Alpha value. Descriptive statistics were calculated. Predictors of satisfaction among continuous socio demographic variables were identified with the help of multivariate linear regression while independent T test was used to test association of satisfaction scores with categorical independent variables. One way Analysis of Variance (ANOVA) test and post hoc comparisons were made to compare satisfaction among patients of five dental departments.

Informed consent was taken from all the patients and ethical clearance was taken from ethical committee of NMCTH before the commencement of the study. Confidentiality and anonymity of the patients was assured and maintained.

RESULT

Internal consistency was checked through Cronbach Alpha and the value was 0.95.

Table 1: Socio-demographic characteristics and frequency of dental hospital visits among patients.

Variables	Categories	n (%)
Age	≤ 25 years	95 (38)
	26 - 50 years	107 (42.8)
	51 - 75 years	45 (18)
	≥ 75 years	3 (1.2)
Sex	Male	99 (39.6)
	Female	151 (60.4)
Marital Status	Single	86 (34.4)
	Married	163 (65.2)
	Widow	1 (0.4)
Educational Status	Illiterate	56 (22.4)
	Primary	21 (8.4)
	Secondary	63 (25.2)
	High School	41 (16.4)
	Bachelor level	60 (24)
	Masters and above	9 (3.6)
Current earning status	Not earning	72 (28.8)
	Earning	178 (71.2)
Income NRs. (Median and Inter-quartile Range) = 20, 000 and (14,750 - 30, 000)		
No. of visits	First Visit	47 (18.8)
	More than one visit	203 (81.2)
Hospital visits (Median and Inter-quartile Range) = 3 visits (2 - 6)		

More than two third's (42.8%) of the patients belonged to the productive age group of 26-50 years. More than half of the respondents were female (60.4%) and were married (65.2%). More than one fifth (22.4%) of the dental patients of the study were illiterate. The average income per month was Nepali Rupees (NRs) 20,000 among the earning population. More than three fourths (81.2%) of the

patients had visited the hospital more than once with average of three visits (Table 1).

More than one thirds of the patients gave "agree" response with items related to context domain of the questionnaire. Similarly, more than one fourths of the patients gave strongly agree response to the items of context domain indicating satisfaction in the context domain of the questionnaire (Table 2).

Table 2: Frequency and percentage distribution of responses of satisfaction variable by CONTEXT dimensions.

Context	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Clinic location/ Appointments	1. Distance to hospital not so far	3 (1.2)	21 (8.4)	21 (8.4)	86 (34.4)	119 (47.6)
	2. Travel to hospital is easy	2 (0.8)	16 (6.4)	27 (10.8)	87 (34.8)	118 (47.2)
	3. Easy to get appointment	-	6 (2.4)	16 (6.4)	122 (48.8)	106 (42.4)
Waiting time	4. Quick appointment.	1 (0.4)	7 (2.8)	33 (13.2)	114 (45.6)	95 (38)
	6. Short waiting time.	1 (0.4)	15 (6)	32 (12.8)	118 (47.2)	84 (33.6)
Dental clinic/ surgery facilities	5. Attractive waiting room	4 (1.6)	13 (5.2)	34 (13.6)	124 (49.6)	75 (30)
	7. Instruments well equipped	1 (0.4)	3 (1.2)	14 (5.6)	134 (53.6)	98 (39.2)
	8. Modern equipment	-	3 (1.2)	27 (10.8)	127 (50.8)	93 (37.2)
Clinic staff	9. Friendly staff	-	3 (1.2)	6 (2.4)	134 (53.6)	107 (42.8)
Dental professional	10. Impersonal professional	1 (0.4)	10 (4)	15 (6)	133 (53.2)	91 (36.4)
	11. Same professional (n=203)	2 (1)	28 (13.8)	05 (2.5)	92 (45.3)	76 (37.4)

Table 3: Frequency and percentage distribution of responses of satisfaction variable by CONTENT dimensions.

Content	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Communication	12. Explained need	1 (0.4)	2 (0.8)	7 (2.8)	133 (53.2)	107 (42.8)
	14. Thorough examination	-	8 (3.2)	5 (2)	135 (54)	102 (40.8)
	15. Answered questions	-	3 (1.2)	5 (2)	144 (57.6)	98 (39.2)
	16. Explained options	1 (0.4)	2 (0.8)	5 (2)	145 (58)	97 (38.8)
	21. Explained treatment	1 (0.4)	4 (1.6)	4 (1.6)	142 (56.8)	99 (39.6)
Services Provided	18. Satisfied with care	-	3 (1.2)	8 (3.2)	129 (51.6)	110 (44)
	19. Appropriate care	1 (0.4)	3 (1.2)	4 (1.6)	136 (54.4)	106 (42.4)
	20. No unexpected pain	4 (1.6)	19 (7.6)	29 (11.6)	107 (42.8)	91 (36.4)

Table 4: Frequency and percentage distribution of responses of satisfaction variable by OUTCOME dimensions.

Outcome	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Service results	22. Problems were fixed	5 (2)	6 (2.4)	21 (8.4)	128 (51.2)	90 (36)
	23. Improved dental health	1 (0.4)	9 (3.6)	23 (9.2)	126 (50.4)	91 (36.4)
Speed	24. Expected improvement	-	2 (0.8)	19 (7.6)	135 (54)	94 (37.6)
Value	26. Confident of care	1 (0.4)	-	9 (3.6)	141 (56.4)	99 (39.6)
	27. No better care	2 (0.8)	21 (8.4)	23 (9.2)	121 (48.4)	83 (33.2)
Usefulness of information	28. Good advice	1 (0.4)	2 (0.8)	5 (2)	139 (55.6)	103 (41.2)

Table 5: Frequency and percentage distribution of responses of satisfaction variable by COST dimensions.

Cost Dimension	Items	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Communication and justification	13. Explained cost	2 (0.8)	12 (4.8)	7 (2.8)	133 (53.2)	96 (38.4)
	17. Avoid unnecessary costs	-	7 (2.8)	5 (2)	128 (51.2)	110 (44)
Affordability	25. Cost affordable	1 (0.4)	8 (3.2)	40 (16)	117 (46.8)	84 (33.6)

More than one third of the patients gave “agree” and “strongly agree” responses indicating that they were satisfied by communication and services provided by the hospital. On the other hand, less than two percent of the patients strongly disagreed and less than eight percent of patients gave disagree responses indicating that they were not satisfied (Table 3).

About half of the patients gave “agree” response to satisfactory service results, expected improvement, value of care and usefulness of information. More than one third of patients gave “strongly agree” response to the items of outcome domain of the questionnaire (Table 4).

Regarding dimensions of cost domain, the results showed that more than one third of the patients agreed and strongly agreed that the costs of the dental treatment were affordable and they were satisfactorily explained regarding the costs of their dental treatment (Table 5).

Figure 1 shows that the average satisfaction scores towards all the four domains of the patients was more than 4. The overall mean satisfaction score of all the patients from the oral health services provided at dental departments of NMCTH was 4.24 ± 0.04 .

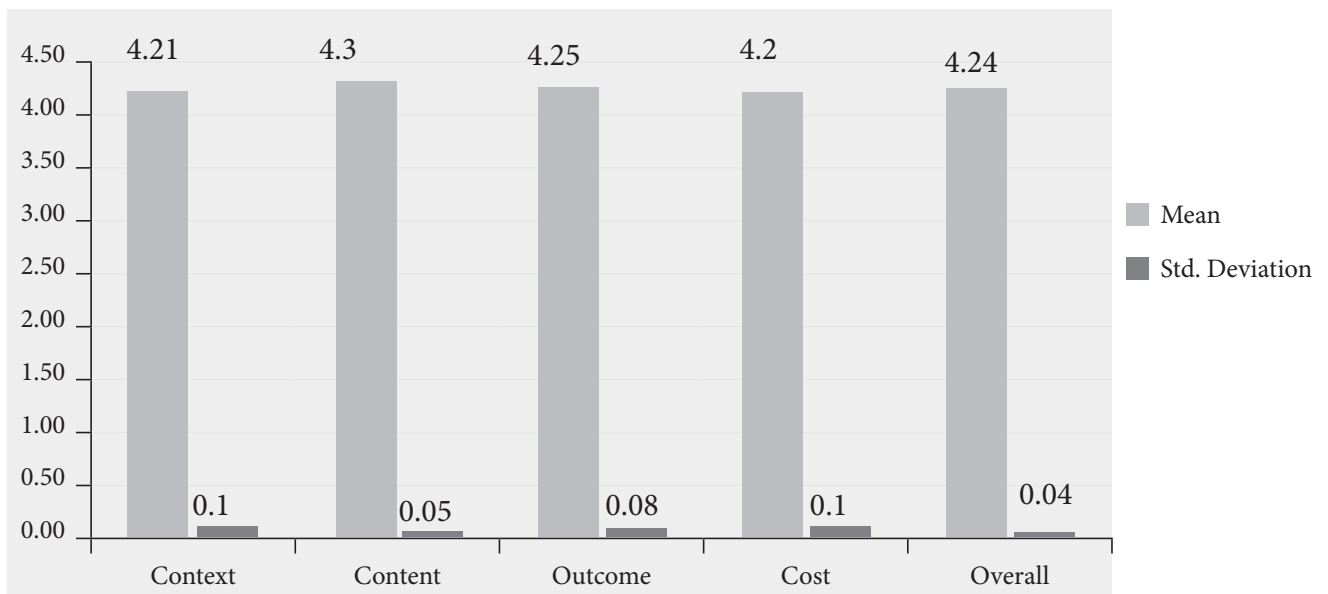


Figure 1: Domain wise average satisfaction scores among the patients attending a teaching dental hospital.

The overall satisfaction scores did not show any statistically significant relationship with age of the patients, income per month, number of economic dependents and number of hospital visits by the patients (Table 6).

Table 7 shows that mean satisfaction scores for

both males and females is 4.24. Similarly, the mean scores for both illiterate and literate patients was similar and more than 4. Also, sex of the patients and literacy of the patients did not show association with the mean satisfaction scores with P value 0.934 and 0.526 respectively.

Table 6: Comparison of overall satisfaction scores by age, income/month, economic dependents and number of hospital visits - Multivariate linear regression.

Variables	Adjusted Odds Ratio	95% Confidence Interval		p value
		Lower	Upper	
Age	0.080	-0.044	0.184	0.230
Income/month	0.034	0.000	0.000	0.604
Number of economic dependents	0.032	-0.467	0.772	0.628
Number of hospital visits	0.052	-0.158	0.361	0.443

Table 7: Comparison of mean satisfaction scores by sex and literacy level of the patients.

Variable	Categories	Mean ± S.D.	Mean Difference diff.	95% Confidence Interval		P value
				Lower	Upper	
Sex	Male	4.24 ± 0.46	0.005	-0.119	0.130	0.934
	Female	4.24 ± 0.50				
Literacy	Illiterate	4.25 ± 0.53	-0.084	-0.349	0.180	0.526

Comparison of mean satisfaction scores of the patients of five dental departments on all items of the satisfaction survey showed that there was a significant difference between the five dental departments in scores for the item attractive waiting room with P value 0.002. Satisfaction scores for all the other items of the questionnaire did not differ among the five departments (Table 8).

The further comparisons in between the departments showed that patients of department of Prosthodontics had significantly higher mean satisfaction scores compared to patients from department of conservative and endodontics, oral surgery and orthodontics with P value 0.025, 0.003, and 0.012 respectively. The difference in mean scores of departments of prosthodontics and Periodontics did not reach statistical significance (Table 9).

Table 8: Comparison of satisfaction scores for all the items among the five departments.

Domain	Items of the questionnaire	F statistic	P value
Context	1. Distance to hospital not so far	1.594	0.176
	2. Travel to hospital is easy	2.280	0.61
	3. Easy to get appointment	0.911	0.458
	4. Quick appointment.	0.409	0.802
	5. Attractive waiting room	4.337	0.002
	6. Short waiting time.	1.328	0.260
	7. Instruments well equipped	0.514	0.725
	8. Modern equipment	1.450	0.218
	9. Friendly staff	1.410	0.231
	10. Impersonal professional	0.927	0.449
	11. Same professional	0.782	0.538
Content	12. Explained need	0.971	0.424
	14. Thorough examination	1.228	0.300
	15. Answered questions	0.868	0.484
	16. Explained options	0.660	0.621
	21. Explained treatment	0.983	0.417
	18. Satisfied with care	1.603	0.174
	19. Appropriate care	0.658	0.622
Outcomes	20. No unexpected pain	1.13	0.344
	22. Problems were fixed	1.953	0.102
	23. Improved dental health	0.570	0.685
	24. Expected improvement	1.760	0.138
	26. Confident of care	1.553	0.188
	27. No better care	0.773	0.544
Cost	28. Good advice	1.014	0.401
	13. Explained cost	1.413	0.230
	17. Avoid unnecessary costs	0.845	0.498
	25. Cost affordable	1.848	0.120

Table 9: Post hoc comparisons for attractive waiting room among five dental departments.

Department	Compared departments	Mean Diff.	95% CI		P value
			Lower	Upper	
Prosthodontics	Conservative and Endodontics	- 0.520	- 1.00	- 0.04	0.025
	Oral Surgery	- 0.640	- 1.12	- 0.16	0.003
	Periodontics	- 0.340	0.288	- 0.82	0.288
	Orthodontics	- 0.560	0.012	- 1.04	0.012

DISCUSSION

Satisfaction from the services is one of the key indicators of quality health services. In the current study, mean satisfaction score of all the patients receiving services from five dental departments of NMCTH was 4.24 ± 0.04 which is high. Similarly, high level of satisfaction was seen among patients attending teaching colleges in Saudi Arabia and India.⁷⁻⁹

Majority of the patients in our study belonged to the productive age group of 26-50 years while in another study, patients attending a teaching dental hospital were in the thirties or forties.¹⁰ Also, most of our patients (> 60%) were female and married which was contrary to similar studies done in other parts of South Asia i.e. India and Taiwan where females constituted about 40% of the study population and majority of patients were unmarried.^{11,12}

In the context dimension, patients reported highest level of satisfaction in easy location, distance and friendly staff. This may be due to the fact that this hospital is well connected with public transport even though it is in the outskirts of the capital city, Kathmandu. These findings corroborate with an study done in five dental centers in Kuwait.¹³ In our study, only 2% of the patients were not satisfied with the waiting area while studies done in India and Saudi Arabia show that higher proportion of patients expressed dissatisfaction in context of waiting room.^{10,11}

In the content domain, highest level of satisfaction was shown by patients towards care, appropriateness and explanation of need of dental treatment. In case of outcome, patients were very confident about the care which was provided and also showed highest level of satisfaction towards usefulness of information. In case of cost, majority of patients were satisfied that unnecessary costs were avoided and the overall cost was affordable which is similar to the study findings from a teaching dental hospital in India.¹¹

In our study, mean satisfaction scores did not show any significant association with socio demographic

variables like age, gender, literacy and earning status which was also concluded by studies done in Turkey and UAE.^{14,15} On the other hand, a Brazilian study showed higher satisfaction among patients with lower education and lower satisfaction among patients who had jobs.¹⁶ Similarly, a study from Taiwan found significant differences according to gender, marital status, educational level attained, and household income.¹²

In the current study, satisfaction level patients attending Department to Prosthodontics regarding the waiting area was significantly higher compared to patients of other four departments. However, another study showed higher dissatisfaction among removable denture patients and most satisfaction among patients attending oral surgery clinic.¹⁷

The sample was limited to patients attending the hospital during the study period, thus, non-attending patients could not be included leading to selection bias. Moreover, there was no attempt to control for equivalence of care in the design of the study. No record of the procedure undertaken was made. It is probable that patients who may have undergone simpler (and perhaps less traumatic) dental procedures are more satisfied.

CONCLUSION

The patients were satisfied with the oral health services provided by NMCTH and the results show that a differential in patient satisfaction according to the type of practice does exist. The study results can be used by teaching hospitals to find areas which can be improved to deliver high quality patient-centered oral health services.

ACKNOWLEDGEMENT

We are thankful to all the patients who agreed to become a part of this study.

Conflict of interest: None declared

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