

Patient satisfaction with oral health care among secondary school students in Manyoni town, Tanzania

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Abstract

Aim: To determine patient satisfaction with oral care among ordinary-level secondary school students in Manyoni town. **Study Design:** Cross sectional school-based study. **Study participants and methods:** 207 students aged 13-21 years old from all 4 ordinary-level secondary schools in Manyoni town who **ever** received oral care before filled in a self administered 4-point Likert's scale questionnaire on patient satisfaction. Data was analyzed using SPSS version 11.5. Chi-square test was used to determine the differences in the distribution of individuals over satisfaction scale. Significance level was set at $p < 0.05$.

Results: Of 222 questionnaires distributed, 207 were returned (93.2% response rate). Overall 77.8% of the respondents were satisfied with oral care. *Explanation of treatment, treatment received and cleanliness of clinic* were the most satisfying aspects of oral care, while *waiting time* was the most dissatisfying aspect. Respondents whose parents were businessmen/women were more dissatisfied with explanation of treatment than respondents whose parents were peasants or employed ($p = 0.02$). Respondents who had received scaling were more dissatisfied with the *cleanliness of the clinic* ($p < 0.0001$); and *cost of the treatment* ($p < 0.0001$). Respondents who received tooth extraction were more satisfied with treatment received ($p = 0.01$) and reception ($p < 0.05$) than their counterparts who received scaling and or a restoration. **Conclusion:** Majority of secondary school students were satisfied with oral care. Respondents who had received periodontal treatment were more dissatisfied with oral care than those who had received tooth extraction or restoration.

Key words: Patients satisfaction, Secondary school students, Manyoni town, Tanzania

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Introduction

Patient satisfaction is the appraisal, by an individual, of the extent to which the care provided has met that individual's expectations and preferences (1). When quality of care received is perceived to be higher than ones expectations, he/she become satisfied. On the other hand, if the care received falls short of the expectations, one is dissatisfied.

Studying patient satisfaction is important because one can identify aspects of care that needs to be improved in order to maintain quality of care (2,3). Furthermore, understanding patient's satisfaction allows a practitioner to gauge his likely success in his/her prescription for behavioral change because satisfied patients have been shown to comply with prescription by a doctor/dentist (4).

Several studies that have been conducted in different countries indicate that majority of dental patients were satisfied with dental care (2,5-9). In Tanzania

however there have been contradicting findings on patient's satisfaction. In their study, Ntabaye et al (10) reported very high patient satisfaction (92.7%) while Matee and his colleagues (3) reported moderate patient satisfaction. The differences may be due to the fact that Ntabaye studied patient satisfaction with emergency oral care in health centers from rural villages, while Matee studied patient satisfaction with all aspects of dental care provided in Dar es Salaam city where people may have a wide range of comparison.

Factors that have been shown to determine patient satisfaction include cost of treatment (11,12), technical competence of practitioner (2), waiting time (11,13), treatment time, cleanliness and neatness of the clinic environment (11,12), treatment options (3,12), treatment time (2), reason for first visit (14-16), educational status of the patient (3), communication between the patient and the doctor (5,11), socioeconomic status of the patient (3), age of the patient (17) and gender

(3,11). It is not known how secondary school patients in Manyoni town appraise the oral health care rendered. The aim of this study was therefore to assess patient satisfaction among secondary school students in Manyoni town.

Study subjects and Methods

Study area and study population

The study targeted all secondary school students in Manyoni town who had received oral care in a dental clinic. Manyoni town has two hospitals, two dispensaries, a dental clinic and four secondary schools (1 purely girls and 3 mixed gender).

A sample size of 196 students was obtained using the standard power calculation formula with $\pi = 0.15$ (prevalence of oral care utilization). Assuming that 15% of all secondary school students would have sought oral care, and that on average each secondary school had 300 students, it was expected that $300 \times 0.15 = 45$ students in each school would have visited a dental clinic for treatment. To get a sample size of 196 students, 5 schools were required to participate in the study. Since Manyoni town had only 4 secondary schools, all students who were present in these schools at the time of the study were included. The principal author visited each school in turn and met students in their respective classes under the guidance of teachers on duty. After explaining the aim of the study, students were asked if they had ever received dental treatment in a dental clinic before. All the students who reported to have been treated in a dental clinic before were requested to fill in the questionnaire.

Questionnaire

The study was conducted using a structured self-administered questionnaire on patient satisfaction which consisted of pre coded and open ended questions. The questionnaire was in Kiswahili language for easy understanding by students. The questionnaire included demographic characteristics and 7 items for measuring patient satisfaction. The items were on reception, cleanliness of clinic, waiting time, effectiveness of local anesthesia, treatment received, cost of treatment and adequacy of information given by dentist on ones oral health problem. The items used in this questionnaire had been tested for reliability in Tanzanian settings before. Both items had been shown to have high re-test Spearman rank correlation coefficients ranging from 0.75-0.82, and Cronbach's alpha of 0.85 (18). Respondents were requested to indicate how satisfied they were about the previous visit to dental clinic by circling one option that best fits their level

of satisfaction with each item using a 4-point Likert's scale (1=very dissatisfied, 2=dissatisfied, 3=satisfied, and 4=very satisfied).

Data analysis

Data was entered into the computer using Microsoft Excel. After cleaning, the data was converted into SPSS file for subsequent analysis. Data for age in years was categorized into three age groups (13-15, 16-18, 19-21). Overall satisfaction with oral care was computed by summing up satisfaction scores for each aspect of oral care, and then the total scores were divided by the number of aspects of oral care. The satisfaction scores were later dichotomized into satisfied and dissatisfied by merging "very dissatisfied" with "dissatisfied" into "dissatisfied" and "very satisfied" with "satisfied" into "satisfied". Frequency distribution of respondents by demographic characteristics and level of satisfaction by different aspects of oral care were generated. Cross tabulations between independent variables and dichotomized satisfaction scores for different aspects of oral care and for over all satisfaction were generated. Chi square test was used to determine the associations between independent variables and satisfaction with different aspects of oral care. Significance level was set at $p < 0.05$.

Ethical Consideration

The ethical clearance was obtained from Muhimbili University of Health and Allied Sciences Ethical Committee. Permission to undertake the study was sought from the District Education Officer, Manyoni and from the Headmaster/mistress of each secondary school. Students were requested to participate in the study after explaining the aim of the study. Students were also informed that they were free to fill in or not fill in the questionnaire, and that not filling in the questionnaire had no adverse consequences to them.

Results

A total of 222 eligible form 1-4 secondary school students from all four secondary schools in Manyoni town were given questionnaires to fill, of which 207 returned filled questionnaires, giving a response rate of 93.2%. The distribution of respondents by demographic characteristics is shown in Table 1. Of the total respondents, 67.6% and 32.4% were girls and boys respectively. The respondents were between 13 and 21 years old with 64.3% between 16 and 18 years. Parent's occupations of the respondents were peasant (31.4%), employed (46.4%) and business (22.2%).

Table 1: Distribution of respondents by socio-demographic characteristics

Demographic characteristic		Number	%
School	Amani	53	25.6
	Darajani	56	27.1
	Manyoni	44	21.3
	Mwanzi	54	26.1
Sex	Male	67	32.4
	Female	140	67.6
Year of study	Form 1	46	22.2
	Form 2	58	28.0
	Form 3	44	21.3
	Form 4	59	28.5
Age groups (yrs)	13-15	57	27.5
	16-18	133	64.3
	19-21	17	8.2
Parent's occupation	Peasant	65	31.4
	Employed	96	46.4
	Business	46	22.2

Table 2 shows the percentage distribution of respondents by level of satisfaction with different aspects of oral care by sex and age. Overall, 77.8% were satisfied with oral care. The most satisfying aspects of oral care were explanation of treatment, cleanliness of clinic and treatment received. The least satisfying aspects of oral care were waiting time and effectiveness of local anesthesia. There were no statistically significant differences between gender and age-groups on the levels of satisfaction.

The percentage distribution of respondents by level of satisfaction with different aspects of oral care by parent's occupation and year of study is shown in Table 3. Proportionately more respondents whose parents were businessmen/women were more dissatisfied with explanation of treatment than respondents whose parents were peasants or employed ($\chi^2 = 7.75$; $p = 0.02$).

Percentage distribution of respondents by level of satisfaction with different aspects of oral care by reason for seeking treatment and type of treatment received is shown in Table 4. A higher percentage of respondents whose reason for seeking oral care was periodontal were dissatisfied with cost of treatment ($\chi^2 = 21.4$, $p < 0.001$) and overall care ($\chi^2 = 6.3$, $p < 0.05$) than those whose reason for seeking oral care was tooth extraction and or trauma. More respondents who received periodontal treatment were more dissatisfied with cleanliness of clinic ($\chi^2 = 15.9$, $p < 0.01$), cost of treatment ($\chi^2 = 15.2$, $p < 0.001$) and overall care ($\chi^2 = 11.1$, $p = 0.01$) than respondents who had received tooth extraction or restoration. Respondents who received tooth extraction were more satisfied with treatment received ($\chi^2 = 13.9$, $p = 0.01$) and reception ($\chi^2 = 7.2$, $p < 0.05$) than their counterparts who received scaling and/or a restoration.

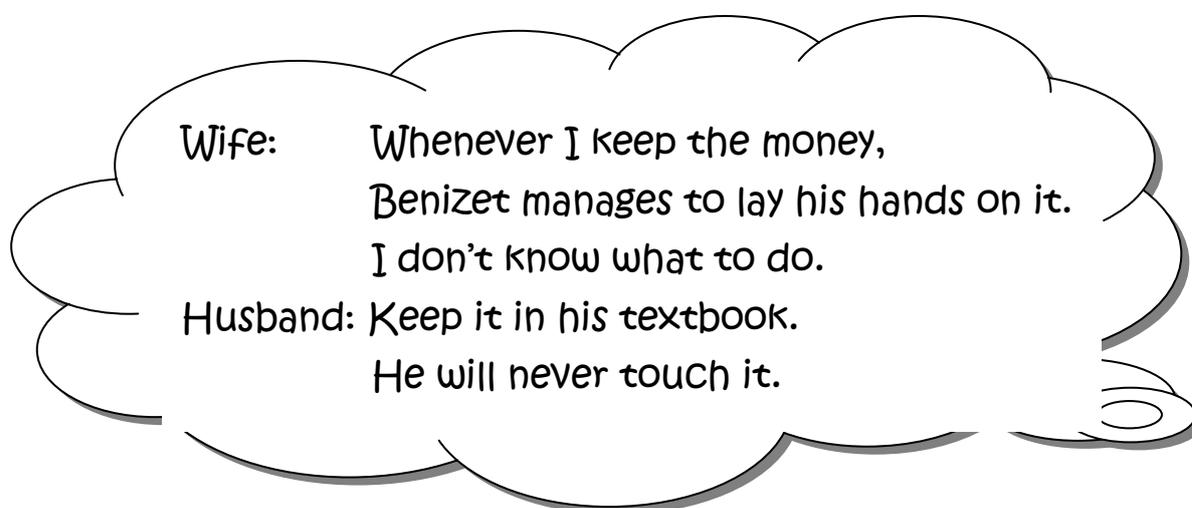


Table 2: Percent distribution of respondents by level of satisfaction with different aspects of oral care by sex and age

Satisfaction with	Gender		Age-group (yrs)			Total (n=207)
	Male (n=67)	Female (n=140)	13-15 (n=57)	16-18 (n=133)	19-21 (n=17)	
Explanation of treatment						
Satisfied	80.6	84.3	91.2	80.5	76.5	84.1
Dissatisfied	19.4	15.7	8.8	19.5	23.5	16.9
Cleanliness of clinic						
Satisfied	83.1	82.1	91.2	77.4	88.2	82.1
Dissatisfied	17.9	17.9	8.8	22.6	11.8	17.9
Treatment received						
Satisfied	82.1	80.7	89.5	76.7	88.2	81.2
Dissatisfied	17.9	19.3	10.5	23.3	11.8	18.8
Reception						
Satisfied	82.1	77.9	87.7	75.2	82.4	79.2
Dissatisfied	17.9	22.1	12.3	24.8	17.6	20.8
Cost of treatment						
Satisfied	77.6	78.6	78.9	77.4	82.4	78.3
Dissatisfied	22.4	21.4	21.1	22.6	17.6	21.7
Effectiveness of local anesthesia						
Satisfied	76.1	68.6	75.4	68.4	76.5	71.0
Dissatisfied	23.9	31.4	24.6	31.6	23.5	29.0
Waiting time						
Satisfied	68.7	67.1	73.7	64.7	70.6	67.6
Dissatisfied	31.3	32.9	26.3	35.3	29.4	32.4
Overall satisfaction						
Satisfied	77.6	77.9	82.5	75.9	76.5	77.8
Dissatisfied	22.4	22.1	17.5	24.1	23.5	22.2

Discussion

Respondents were all students who reported to have been treated in a dental clinic before in all secondary schools situated in Manyoni town. This gave the opportunity to participate to all students who had been treated in the dental clinic before the commencement of the study. This limited the chances for selection bias inherent in the sampling procedures. Students were given questionnaires to fill in classes; this could lead to some students copying the neighbor’s responses. This could lead to unreliable results. Nevertheless, the desire to copy answers from neighbors was minimized by assuring them that there were no correct or wrong answers, and that what was needed was individual’s experience about care received. The assurance and the high response rate indicated that the findings were reliable. In addition, the items used in the current study had been tested for reliability in

Tanzanian settings, and both the re-test and within a scale reliability coefficients were high (18).

The fact that 77.8% of the respondents were satisfied or very satisfied with oral care indicates that oral health care received in different dental clinics met the expectations of three quarters of the respondents. These findings are similar to those reported by Okullo et al 2004 (5) among secondary school students in Kampala and Lira in Uganda, among adults in Tanzania (3,18), among adults in Los Angeles, U.S.A (12); and among 23- year olds in Norway (11). In these studies the proportion of respondents who reported being satisfied with oral care ranged from 60% - 77%. In other similar studies conducted in Tanzania (10) and Turkey (19), a higher percentage of respondents (93% - 99%) reported as being satisfied with oral care than in the current study.

Table 3: Percent distribution of respondents by level of satisfaction with different aspects of oral care by parent's occupation and year of study

Satisfaction with	Parent's Occupation			Year of study				Total (n=207)
	Peasant (n=65)	Employed (n=96)	Business (n=46)	Form1 (n=46)	Form2 (n=58)	Form3 (n=44)	Form4 (n=59)	
Explanation of treatment								
Satisfied	86.2	87.5	69.6	87.0	86.2	81.8	78.0	83.1
Dissatisfied	13.8	12.5	30.4*	13.0	13.8	18.2	22.0	16.9
Cleanliness of clinic								
Satisfied	84.6	83.3	76.1	80.4	87.9	79.5	79.7	82.1
Dissatisfied	15.4	16.7	23.9	19.6	12.1	20.5	20.3	17.9
Treatment received								
Satisfied	81.5	81.3	80.4	82.6	82.8	81.8	78.0	81.2
Dissatisfied	18.5	18.7	19.6	17.4	17.2	18.2	22.0	18.8
Reception								
Satisfied	72.3	79.2	89.1	84.8	79.3	77.3	76.3	79.2
Dissatisfied	27.7	20.8	10.9	15.2	20.7	22.7	23.7	20.8
Cost of treatment								
Satisfied	78.5	82.3	69.6	73.9	70.7	81.8	86.4	78.3
Dissatisfied	21.5	17.7	30.4	26.1	29.3	18.2	13.6	21.7
Effectiveness of local anesthesia								
Satisfied	73.8	67.7	73.9	76.1	72.4	65.9	69.5	71.0
Dissatisfied	26.2	32.3	26.1	23.9	27.6	34.1	30.5	29.0
Waiting time								
Satisfied	69.2	70.8	58.7	69.6	65.5	65.5	65.1	67.6
Dissatisfied	30.8	29.2	41.3	30.4	34.5	34.1	30.5	32.4
Overall satisfaction								
Satisfied	76.9	77.1	80.4	76.1	79.3	79.5	76.3	77.8
Dissatisfied	23.1	22.9	19.6	23.9	20.7	20.5	23.7	22.2

* χ^2 test; $p = 0.02$

In the study done by Tamaki et al 2005 (2) among adults in Japan, females were more satisfied with the cleanliness of the clinic than males, while in the current study no significant difference were noted. Non significant differences between gender was also reported by Skaret et al 2004 (11) among 23-year olds in Norway. Explanation of the treatment was the most satisfying aspect of oral care. This indicates that practitioners gave adequate information about the treatment they planned to offer. These findings correspond to studies reported by as Sur et al 2004 (19) among adults in Turkey and Okullo et al 2004 (5) among secondary school students in Kampala and Lira in Uganda. These findings differ from those reported by Matee et al 2006 (3) and Kikwilu et al 2008 (18) among adult Tanzanians in which explanation of treatment was the least satisfying aspects of oral care. The

findings also differ from those reported by Tamaki et al 2005 (2) among adults in Japan where cleanliness of the clinic was the most satisfying aspect of oral health care.

The most dissatisfying aspect of oral care was the waiting time. This is probably due to the fact that all patients report at the dental clinic in the morning and queue for treatment. Since in most dental clinics, there is only one practitioner, some of the patients will have to wait longer than they expect. This could also be due to lack or poor conditions of equipments. Dissatisfaction with waiting time was also reported by Sur et al 2004 (19) among adults in Turkey, Skaret et al 2004 (11) among 23- year olds in Norway and Tamaki et al 2005 (2) among adults in Japan.

Table 4: Percent distribution of respondents by level of satisfaction with different aspects of oral care by reason for seeking treatment and type of treatment received

Satisfaction with	Reason for seeking treatment			Type of treatment received			Total (n=207)
	Toothache (n=158)	Fracture (n=22)	Periodontal (n=27)	Extraction (n=165)	Scaling (n=31)	Restoration (n=11)	
Explanation of treatment							
Satisfied	84.8	81.8	74.1	84.2	74.2	90.9	83.1
Dissatisfied	15.2	18.2	25.9	15.8	25.8	9.1	16.9
Cleanliness of clinic							
Satisfied	83.5	86.4	70.4	85.5	58.1	100	82.1
Dissatisfied	16.5	13.6	29.6	14.5	41.9***	0.0	17.9
Treatment received							
Satisfied	83.5	81.8	66.7	86.1	58.1	72.7	81.2
Dissatisfied	16.5	18.2	33.3	13.9**	41.9	27.3	18.8
Reception							
Satisfied	80.4	81.8	70.4	83.0	64.5	63.6	79.2
Dissatisfied	19.6	18.2	29.6	17.0*	35.5	36.4	20.8
Cost of treatment							
Satisfied	84.2	77.3	44.4	83.0	51.6	81.8	78.3
Dissatisfied	15.8	22.7	55.6**	17.0	48.4***	18.2	21.7
Effectiveness of local anesthesia							
Satisfied	72.8	77.3	0	74.5	0	63.6	71.0
Dissatisfied	27.2	22.7	0	25.5	0	36.4	29.0
Waiting time							
Satisfied	70.3	72.7	48.1	70.3	51.6	72.7	67.6
Dissatisfied	29.7	27.3	51.9	29.7	48.4	27.3	32.4
Overall satisfaction							
Satisfied	81.0	77.3	59.3	81.8	54.8	81.8	77.8
Dissatisfied	19.0	22.7	40.7*	18.2	45.2**	18.2	22.2

χ^2 test; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The fact that more respondents whose parents' occupation was business were more dissatisfied with the explanation of the treatment than those whose parents' occupations were peasants and employed may indicate that the expectations of respondents from business families were higher than their counterparts from families of peasants and employed.

The findings that higher proportion of the respondents who received periodontal treatment by scaling were more dissatisfied with cleanliness of clinic than those who received tooth extraction may indicate that periodontal patients had more time to look at the environment of the clinic than their counterparts who received tooth extraction. Majority of patients who receive tooth extraction usually come to the clinics with pain, sometimes severe pain. Presence of pain may detract the patients from making a thorough assessment of cleanliness of the clinic environment.

The feeling that scaling is a simple task may explain why a higher proportion of respondents who received scaling were more dissatisfied with cost of treatment, treatment received, and overall care than those who received tooth extraction and or restoration.

It is concluded that majority of secondary school students in Manyoni town were satisfied with oral care. The most satisfying aspects of oral care were explanation of the treatment, cleanliness of the clinic and treatment received, while waiting time and effectiveness of local anesthesia were the most dissatisfying aspect of oral care. Respondents who received periodontal treatment were more dissatisfied with oral care than those who received tooth extraction or restoration.

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