Original Article

Patient satisfaction with intraoral examination in a Nigerian tertiary hospital

Ekaniyere Benlance Edetanlen[1], Olajumoke Babalola[2], Ufadime Lawani[2]

Departments of [1]Oral and Maxillofacial Surgery, [2]Family Dentistry, University of Benin Teaching Hospital, Benin, Edo, Nigeria.

*Corresponding author:
Ekaniyere Benlance Edetanlen,
Department of Oral and
Maxillofacial Surgery,
University of Benin Teaching
Hospital, Benin, Edo, Nigeria.

ehiben2002@yahoo.com

Quick Response Code:

ABSTRACT

Objectives: While studies on satisfaction following medical procedures are well documented, but this is not so with dental procedures. Therefore, this study aims to determine the level of satisfaction in patient undergoing intraoral examination (IOE).

Material and Methods: Consecutive patients attending the oral diagnosis clinic of University of Benin Teaching Hospital from April 2020 to September 2020 were interviewed using a questionnaire modified from the modified Group Health Association of America-9 questionnaire.

Results: A total number of 103 consecutive dental patients were recruited as they all agreed to participate in the study. The age range was 18–77 years with a mean age of 35.8 ± 14.3 years. There were more males (51.5%). The overall satisfaction was 82.5%. The maximum satisfactory response was on doctor's manner (93.2%), followed by staff's manner (89.3%), comfort during IOE (80.6%), adequate explanation (78.6%), and finally by waiting time (60.2%). There was association between occupation ($P = 0.04$) of the patients, type of dental condition ($P = 0.03$), waiting time ($P = 0.01$), doctor's manner ($P = 0.00$), staff manner ($P = 0.00$), adequate explanation ($P = 0.00$), comfort during IOE ($P = 0.00$), and level of satisfaction. The problem rate was 16%.

Conclusion: Although waiting time and adequate explanation ranked the highest in terms of unfavorable responses, the overall satisfaction of patients following IOE was generally good. The factors that influence satisfaction were occupation of the patients, type of dental condition, waiting time, doctor's manner, staff manner, adequate explanation, and comfort during IOE.

Keywords: Group Health Association of America-9, Intra-oral examination, Patient satisfaction

INTRODUCTION

Intraoral examination (IOE) is a routine and frequent procedure performed on dental patients globally.[1] All known orodental diseases are diagnosed following IOE. It is the examination of the oral cavity (mouth) with mouth mirror and dental probe to detect orodental problems.[2] However, there are various barriers toward patient acceptance of IOE. One such barrier pertains to patient dissatisfaction toward the procedure. Patients who are dissatisfied are less likely to comply with management plan or more reluctant to continue utilizing a particular healthcare service.[3] Providing best possible care is the most important goal of any health-care facility. In recent years, patient satisfaction has become an increasingly important outcome measurement in medical practice. Not only does patient satisfaction establish performance standards but it also increases the accountability of physicians and staff and, most importantly, can lead to

improvements in the quality of care.[4] Furthermore, satisfied patients are theoretically more likely to be compliant and to maintain a relationship with one specific care provider, which is more conducive toward continuity of care.[5]

Several measurement scales for measuring satisfaction are available in the literature but Group Health Association of America (GHAA) instrument is most widely used due to its simplicity and easy to use. The original GHAA instrument, a commonly used patient satisfaction survey, consists of 60 items in the following section: Satisfaction with health-care services and providers, general satisfaction with care, satisfaction with health plan, health insurance and use of services, and personal characteristics.[6] The GHAA was modified by American Society of Gastrointestinal (GI) Endoscopy to GHAA-9 to make it applicable to measurement of patient satisfaction with GI endoscopy. The GHAA-9 is a 9-item subscale with following sections: Waiting time to get appointment, waiting time before the procedure, personal manner (courtesy, respect, sensitivity, and friendliness) of the physician, personal manner (courtesy, respect, sensitivity, and friendliness) of the nurses and support staff, technical skills (thoroughness, carefulness, and competence) of the physician performing the procedure, and adequacy of explanation of procedure. The remaining three questions include on overall rating of the visit and inquiries into whether the patient would have the procedure done again by same physician or at the same facility.[6]

Although there are several studies on patient satisfaction using GHAA-9 in medical practice,[7-12] there seems to be limited related studies in dental practice. This study, therefore, aimed to determine the level of satisfaction with IOE among dental patients attending a Nigerian teaching hospital. Furthermore, the factors influencing the level of satisfaction were determined. It is expected that the study will generate evidence-based information for decision-making to mount interventions that would improve patient satisfaction with regard to dental treatment.

MATERIAL AND METHODS

This was a prospective cross-sectional study design performed on consecutive dental patients at the Department of Oral Diagnosis of the University of Benin Teaching Hospital, Nigeria, from April 2020 to September 2020. Informed consent was obtained from the patients while ethical permission was granted by the Institution Ethical and Research Committee. Patients that refused to participate in the study were excluded. The data collected were age, gender, occupation, place of residence, level of education, dental condition, and patient satisfaction.

The minimum sample size for statistically meaningful deductions was determined using the statistical formula of Fisher for calculating sample size: $n = Z^2 P (1-P)/d^2$. Where, n is

the minimum sample size for a statistically significant survey, Z is normal deviant at the portion of 95% confidence interval (C.I) = 1.96, since this is preliminary study in Nigeria, a best guess prevalence of 50% was chosen for the estimation of sample size,[13] and d is margin of error acceptable or measure of precision = 10%. Using this formula, the minimum sample size (n) was 96. Therefore, the study of 96 respondents was to give meaningful statistical deductions. However, the sample size was increased to 103 to compensate for any attrition.

The patient satisfaction was measured with GHAA-9 questionnaire. This survey was pre-validated in the previous study.[14] The questionnaire was modified for this study. The original question on technical skill of the endoscopist was replaced with a question patient comfort during the IOE. It comprised 10 sections. The first six questions assess aspects relative to patients satisfaction: (1) Waiting time before IOE, (2) personal manner(courtesy, respect, sensitivity, and friendliness) of the physician, (3) personal manner (courtesy, respect, sensitivity, and friendliness) of the nurses and support staff, (4) comfort of patient during the procedure, (5) adequacy of explanation of procedure, and (6) overall satisfaction of the patient. Patients were asked to score each question with a score of 1–4 with one representing a poor and 4 representing excellent score. Each score of the questions were summed up. The total satisfaction score was 6–24. A score of 6–9 points was graded as poor, a score of 10–14 points was graded as fair, a score of 15–19 points was graded as good, and a score of 20–24 points was graded as excellent. The last four questions of the questionnaire were: (7) Would like to be examined by same physician again, (8) would you like to be examined in the same facility, (9) would you recommend same facility to your relation, and (10) was this your first visit and their responses were either "Yes" or "No." The dissatisfaction rate or problem rate was calculated by adding all poor or fair responses in all questionnaires, dividing them by the total number of questions asked, and multiplying the result of this division by 100. The questionnaire was pretested in a pilot study on 10 respondents who were not part of the study. This was done by test-pretest method and using Cronbach's alpha coefficient to evaluate the reliability.

Simple descriptive statistics were used to define the characteristics of the study variables by counting and calculating percentages for the categorical variables. For the inferential statistics, we used Chi-square test for univariate analysis of the categorical variables. $P < 0.05$ was taken to indicate statistical significance. All statistics were performed with SPSS version 21 (IBM corps, Armonk, New York, US). $P < 0.05$ was considered statistically significant.

RESULTS

A total number of 103 consecutive dental patients were recruited as they all agreed to participate in the study. The

Cronbach's alpha was 0.89 indicating good reliability in this study. The age range was 18–77 years with a mean age of 35.8 ± 14.3 years. Patient clinic demographic characteristics regarding age, gender, occupation, place of residence, level of education, dental conditions, and referred department is found in Table 1. More than half of the patients were in the age group if <36 years. There were more males (51.5%)

compared to their female counterparts. Only 2 (1.90%) patients were unemployed. Majority (81.6%) of patients were urban dwellers. Around two-third (72.8%) of the patients had tertiary level of education. Most (19.4%) patients presented with acute apical periodontitis (AAP) followed by acute pulpitis (16.5%) and chronic marginal gingivitis (14.6%). Highest number (45.6%) of patients was referred to the department of oral and maxillofacial surgery.

The minimum and maximum satisfaction scores were 12 and 24, respectively. The mean score was 18 ± 3.10. Table 2 shows overall percentage of favorable and unfavorable responses for each of the question. Just more than half (60.2%) of the respondents said that they are satisfied with the time waited to get IOE performed on them as majority (93.2%) of them were satisfied with the doctor's manner during the procedure. Higher number (89.3%) of the respondents was satisfied with the manners of the support staff. Less than half (21.4%) of the patients responded that they were unsatisfied with the explanation given to them before the IOE. A two-third (80.6%) of the patients acclaimed that they were comfortable during the procedure. In overall, just a few patients (17.5%) were not satisfied with their visit to our facility. The majority (96.1%) of the patients said that they would like to have IOE done again by same physician. Only 5 (4.90%) of the patients said that they will not like to have IOE done in our facility. More than two-third (95.2%) answered that they will recommend our facility to their relatives. Fifty-two (50.5%) patients were visiting our facility for the 1st time. The problem rate was 16.0%. The occupation of the patients, type of dental condition, waiting time, doctor's manner, staff manner, adequate explanation, and comfort during IOE were only found to be significantly associated with the unfavorable responses, as shown in Table 3.

DISCUSSION

Patient satisfaction has come to the forefront of health-care outcomes measure in recent years. Although patient satisfaction is variably defined, there is agreement that it represents a patient's cognitive or emotional evaluation

Table 1: Clinicodemographic characteristics of the patients in the study (*n*=103).

Variable	Category	*n*	%
Age	<36	61	59.2
	≥36	42	40.8
Gender	Male	53	51.5
	Female	50	48.5
Occupation	Skilled	37	35.9
	Semi-skilled	29	28.2
	Unskilled	35	34.0
	Dependent	2	1.90
Place of residence	Urban	84	81.6
	Rural	19	18.4
	None	1	1.00
	Primary	3	2.90
Level of education	Secondary	24	23.3
	Tertiary	75	72.8
	Pericoronitis	9	8.70
	Furcation involvement	2	1.90
	AAP	20	19.4
	Chronic periodontitis	5	4.90
	Missing teeth	8	7.80
	Chronic marginal gingivitis	15	14.6
	Halitosis	2	1.90
Dental conditions	Pulpitis	17	16.5
	Odontalgia	2	1.90
	Facial myalgia	1	1.00
	Pulpal necrosis	2	1.90
	Dentoalveolar abscess	3	2.90
	Dentinal hypersensitivity	1	1.00
	Tooth fracture	4	3.90
	Perio-endo lesion	1	1.00
	Tooth impaction	2	1.90
	Tooth discoloration	1	1.00
	Dental caries	2	1.90
	Traumatic occlusion	1	1.00
	Failed bridge	1	1.00
	Failed crown	1	1.00
	Failed root canal therapy	1	1.00
	Malocclusion	1	1.00
	Odontomes	1	1.00
Place of referral	Oral and maxillofacial surgery	47	45.6
	Periodontics	22	21.4
	Prosthodontics	8	7.80
	Oral medicine	5	4.90
	Orthodontic	1	1.00

n=Frequency, %=Percentage, AAP: Acute apical periodontitis

Table 2: Overall percentage of favorable and unfavorable response to each question (*n*=103).

Question	Favorable response *n* (%)	Unfavorable response *n* (%)
Waiting time	62 (60.2)	41 (39.8)
Doctor's manner	96 (93.2)	7 (6.80)
Staff's manner	92 (89.3)	11 (10.7)
Adequate explanation	81 (78.6)	22 (21.4)
Comfort on examination	83 (80.6)	20 (19.4)
Overall satisfaction	85 (82.5)	18 (17.5)

n=Frequency, %=Percentage

Table 3: Association between patient's characteristics and patients unsatisfaction with intraoral examination (*n*=103).

Variable	Category	Unsatisfactory response		Chi-square	*P*-value
		Yes (*n*=11)	No (*n*=92)		
Age	<36	6	55	0.112	0.738
	≥36	5	37		
Gender	Male	5	48	0.178	0.673
	Female	6	44		
Occupation	Skilled	6	31		
	Semi-skilled	1	28	13.2	0.04
	Unskilled	4	31		
	Dependent	0	2		
Place of residence	Urban	10	74		
	Rural	1	18	0.717	0.397
Level of education	None	0	1		
	Primary	0	3	2.10	0.552
	Secondary	1	23		
	Tertiary	10	65		
Dental condition	Pericoronitis	2	7		
	Furcation involvement	2	0		
	AAP	1	19		
	Chronic periodontitis	1	4		
	Missing teeth	0	8		
	Chronic marginal gingivitis	0	15		
	Halitosis	0	2		
	Pulpitis	1	16		
	Odontalgia	1	1		
	Facial myalgia	1	0		
	Pulpal necrosis	1	0		
	Dentoalveolar abscess	0	3	48.0	0.03
	Dentinal hypersensitivity	0	1		
	Tooth fracture	0	4		
	Perio-endo lesion	0	1		
	Tooth impaction	0	1		
	Tooth discoloration	0	2		
	Dental caries	1	1		
	Traumatic occlusion	0	1		
	Failed bridge	0	1		
	Failed crown	0	1		
	Failed root canal therapy	0	1		
	Malocclusion	0	1		
	Odontomes	0	1		
Waiting time	Poor	0	3		
	Fair	9	29		
	Good	2	48	10.9	0.01
	Excellent	0	12		
Doctor's manner	Poor	0	0		
	Fair	6	1		
	Good	5	44	46.9	0.00
	Excellent	0	47		
Staff's manner	Poor	0	0		
	Fair	6	5		
	Good	5	63	25.8	0.00
	Excellent	0	24		
Adequate explanation	Poor	0	0		
	Fair	9	11		
	Good	2	50	30.9	0.00
	Excellent	0	31		
Comfort on examination	Poor	0	0		
	Fair	10	10		
	Good	1	46	40.3	0.00
	Excellent	0	36		
Was this your first oral examination	No	5	47	0.125	0.724
	Yes	6	45		

AAP: Acute apical periodontitis

of a health-care provider's performance and is based on[10] relevant aspect of the health-care experience.[3] The perceptions and experiences of the patient are increasingly recognized as critical measures of performance and have become a central focus of health-care delivery and quality assurance efforts.

The health plan employer data and information set, HEDIS, a report card system for health maintenance organizations in effect since 1991, incorporates patient satisfaction with care experience among its eight major quality indicators.[5] The ability to accurately measure and improve patient satisfaction, however, is limited by a lack of understanding of those aspects of the care experience most important to this outcome. Patient satisfaction measurement can help establish performance standards, improve risk management, increase in accountability of physicians and staff, and the quality of care.[6] Studies have shown that satisfied patients are more likely to continue to use medical care services, to comply with prescribed treatments, and to maintain a relationship with a specific care provider.[5,9] The satisfied patient is more apt to disclose important medical information to caregivers and to participate in his or her own treatment. Dissatisfied patients, on the other hand, are more likely to doctor shop, at allow their health insurance to expire, and to be non-compliant.[15]

This is the first study using GHAA-9 survey to inquire about patient satisfaction with IOE. The use of the modified GHAA-9 patient satisfaction survey has been recommended because it has been validated in numerous patient populations and has been in existence for more than 20 years.[16] Patient satisfaction surveys provide mechanism whereby patients can alert providers to their needs, concerns, and perceptions of treatment. Such feedback is helpful in the quality assessment process because it highlights specific areas in need of improvement. A well-designed and implemented patient satisfaction measurement system can improve the quality of clinical and administrative practices.[17]

Seven factors affecting overall rating were identified in our population: Occupation, dental condition, waiting time, doctor's manner, staff manner, adequate explanation, and comfort during IOE. Of these waiting time and adequate explanation ranked the highest in terms of unfavorable responses. These factors were also reported by the previous studies to be related to the level of satisfaction.[7,9] However, Ko *et al.* did not identify waiting time as an associated factor in relation to satisfaction.[11]

The rate of satisfaction with the waiting time before IOE in the present study was 60.2%. This finding is in contrast with the previous studies among the Caucasians and Asians.[7-12] The differences among the studied population could be attributed to this variation in the studies. The finding in the present study as regard the waiting time is a clarion call to improve in waiting time and hence raise patient

level of satisfaction. Although the 93.2% rate of satisfaction as regard doctor's manner was encouraging, it was, however, lower than 99.1% and 98.7% reported by Rasool *et al.*[10] and Del Rio *et al.*,[7] respectively. This finding was higher than 79.2% reported by Chan and Goh.[9] In the present study, the rate of satisfaction from the support staff's manner was 89.3%. This was, however, lower than that reported from the previous studies [Table 1]. The rate of satisfaction as regard adequate explanation in our study was 78.6%, which was lower compare to the previous studies.[11,12] This indicates the level of patient-doctor relationship which is not encouraging in developing countries. Patient satisfaction rate regarding comfort during IOE in the present study was 80.6%. This finding was lower than that reported in the previous studies but higher than that reported by Chan and Goh.[9]

This study has few limitations that can be considered in the interpretation of the results. To the best of our knowledge, this is the first study on dental patient's satisfaction using GHAA-9 and this limited comparison of our findings with studies on dental population. More so, future studies may recruit larger sample size. This study was also a single-center study.

CONCLUSION

Although waiting time and adequate explanation ranked the highest in terms of unfavorable responses, the overall satisfaction of patients following IOE was generally good. The factors that influence satisfaction were occupation of the patients, type of dental condition, waiting time, doctor's manner, staff manner, adequate explanation, and comfort during IOE.

Acknowledgment

We want to thank our colleagues in the department for allowing us to study their patients.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Ibikunle AA, Taiwo AO, Braimah RO. A 5-year audit of major maxillofacial surgeries at Usmanu Danfodiyo University Teaching

Hospital, Nigeria. BMC Health Serv Res 2018;18:416-22.

2. Akinmoladun VI, Gbolaham OO, Akadiri OA, Akinyamoju CA. Evaluation of the scope and practice of oral and maxillofacial surgery in Nigeria. Niger J Clin Pract 2015;18:282-6.

3. Aharony L, Strasser S. Patient satisfaction: What we know about and what we still need to explore. Med Care Rev 1993;50:49-79.

4. Larsen IK, Grotmol T, Bretthauer M, Gondal G, Huppertz-Hauss G, Hofstad B, *et al.* Continuous evaluation of patient satisfaction in endoscopy centres. Scand J Gastroenterol 2002;37:850-5.

5. del Rio AS, Fernandez OA, Baudet JS, Menendez ZS, Mendez MS, Jaén GP. Reliability of the Spanish version of a brief questionnaire on patient satisfaction with gastrointestinal endoscopy. Rev Esp Enferm Dig 2005;97:554-61.

6. Lin OS, Schembre DB, Ayub K, Gluck M, McCormick SE, Patterson DJ, *et al.* Patient satisfaction scores for endoscopic procedures: Impact of a survey-collection method. Gastrointest Endosc 2007;65:775-81.

7. Del Rio AS, Baudet JS, Fernandez OA, Morales I, Socas MD. Evaluation of patient satisfaction in gastrointestinal endoscopy. Eur J Gastroenterol Hepatol 2007;19:896-900.

8. Nijjar UK, Edwards JA, Short MW. Patients satisfaction with family physician colonoscopists. J Am Board Fam Med 2011;24:51-6.

9. Chan WK, Goh KL. Evaluation of patient satisfaction of an outpatient colonoscopy service in an Asian Tertiary Care Hospital. Gastroenterol Res Pract 2012;2012:561893.

10. Rasool S, Ahmed S, Siddiqui S, Salih M, Jafri W, Hamid S. Evaluation of quality and patient satisfaction during endoscopic procedure: A cross sectional study from South Asian country. J Pak Med Assoc 2010;60:990-5.

11. Ko HH, Zhang H, Telford JJ, Enns R. Factors influencing patient satisfaction when undergoing endoscopic procedures. Gastrointest Endosc 2009;69:883-91.

12. Qureshi MO, Shafqat F, Ahmed S, Niazi TH, Khokhar N. Factors affecting patient satisfaction during endoscopic procedure. J Coll Physicians Surg Pak 2013;23:775-9.

13. Kish L. Survey Sampling. New York: Wiley Inter-Science Publication; 1965.

14. Yacavone RF, Locke GR 3rd, Gostout CJ, Rockwood TH, Thieling S, Zinsmeister AR. Factors influencing patient satisfaction with GI endoscopy. Gastrointest Endosc 2001;53:703-71.

15. Chan WK, Saravanan A, Manikam J, Goh KL, Mahadeva S. Appointment waiting times and education level influence the quality of bowel preparation in adult patients undergoing colonoscopy. BMC Gastroenterol 2011;11:86.

16. Trujillo-Benavides OE, Altamirano-Garcia AA, Baltazar-Montufar P, Maroun-Marun C, Mendez-Del Monte R, Torres-Rubi D. Level of satisfaction from patients who undergone an endoscopic procedure and related factors. Rev Gastroenterol Mexico 2010;75:374-9.

17. Del Rio AS, Campo R, Llach J, Pons V, Mreish G, Panadés A, *et al.* Patient satisfaction in gastrointestinal endoscopy: Results of a multicenter study. Gastroenterol Hepatol 2008;31:566-71.