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ABSTRACT

Background: **In Tanzania, patient satisfaction with dental services has received only minor attention.**
Objective: **To assess patients' satisfaction with public dental health services in Dar es Salaam.**
Design: **A cross-sectional study.**
Setting: **Five public dental clinics randomly selected from a list of all the nine public dental clinics in Dar es Salaam.**
Subjects: **Five hundred and sixteen consecutive patients, 193 males and 323 females aged between 12 and 77 years who, during the study period between July and November, 2002 were attending five dental clinics were randomly selected.**
Results: **No significant differences in patients' satisfaction level (overall or for the specific studied items) were found in all the five public dental clinics. The answers to the specific sub-items, apart from time spent with doctor, were around the average with very few responses with a high ranking.**
Conclusions: **Findings indicate a moderate level of patient satisfaction with dental care offered in public dental clinics in Dar es Salaam. Areas identified as needing improvement included; technical quality of care, interpersonal aspects and communication.**

INTRODUCTION

The basic structure of any health care system can be described by a triangle of three actors and the relationship among them. The three actors include: citizens (or patients), suppliers or providers of health care and often an intermediate third party with the dual role of financing health care, collecting taxes or premiums and paying providers. A number of modifications of the model are conceivable. Thus, the third party may be divided into public authorities at the central, regional or local level; and the private insurance. As the generalisation appears to be, the large numbers of health care sector reforms that have been initiated in Tanzania in recent years seem to have been driven by an objective to contain health care costs. This is probably because of increased pressures on public health sector resources. Government owned dental clinics provide the bulk of dental services to the largest section of the population (1). Today, most of the public dental clinics are located in urban centres (the Capital, Regional and District headquarters). With the recent health sector reforms the government no longer maintains the monopoly of owning and offering dental services. At present, a growing number of private dental clinics are offering dental

services to patients, especially in the urban areas and larger cities like Dar es Salaam. However, for the ordinary citizen, the government owned facilities are the only available and affordable service. Little is known with regard to equity, efficiency, geographical equality of access, patient composition and patient satisfaction. Therefore, there is a need to collect information about these matters.

Patients' satisfaction is an important indicator of the quality of dental care (1) and a key factor in determining a health care organisation's competitive advantage and survival (2,3). A taxonomy of patient satisfaction identifies and defines major characteristics of providers of health and medical care services that influence patient satisfaction (4). Ware and co-workers (4) have proposed a taxonomy with eight dimensions following the definitions of major satisfaction dimensions (5). A study on patient satisfaction within groups attending public dental services could allow for an evaluation of the services offered. Such evaluation might give an idea of patient preferences of the different clinics and the choices they make with regard to dental treatment. Furthermore, a study on patient satisfaction could be useful as a guideline for improvement of the services offered. The characteristics of the people attending public dental clinics and the pattern of patient characteristics relating to particular clinics could be associated with the level of patient satisfaction (6). The aim of this study, therefore, was to determine among patients attending dental clinics in Dar es Salaam, the level of satisfaction with dental care and factors that might influence their satisfaction with such care.

MATERIALS AND METHODS

Settings: Five public dental clinics namely; Magomeni, Mnazi Mmoja, Temeke, Mwananyamala and Sinza were randomly selected from a list of all the nine clinics in Dar es Salaam.

Subjects: Dental patients attending the selected clinics during the time of the study (July to November, 2002). All patients were eligible to participate.

Data collection: Information was collected using a validated structured questionnaire (Patient Satisfaction Questionnaire, PSQ III) (7). The PSQIII is based on the PSQ, which was developed as part of the Rand Corporation research programme over a period of 15 years (8). The questionnaires were delivered to patients by trained research team members and were re-checked after completion in order to ensure that they had been filled in correctly.

Measurements: The questionnaire was composed of two parts:

1. A socio-demographic description of the patients including age, gender, family size, education, family monthly income, dental visits (number of visits within the last three years) and distance in kilometres to the clinic.
2. A Patient Satisfaction Questionnaire (PSQ III) (9) that comprised seven subtitles with a total of 49 items. For each item, a 5-point rating scale giving the respondent the possibility of answering either *Strongly Agree/Agree/ Uncertain/Disagree or Strongly Disagree* was instituted. Each item was scored 1-5 with scoring reversed for positively worded items, so that high scores indicate greater satisfaction. The subtitles were:
   (i) *Technical quality of care:* Competence of providers and adherence to high standards and treatment (e.g. thoroughness, accuracy, unnecessary risks, making mistakes);
   (ii) *Accessibility/Convenience:* Factors involved in arranging to receive dental care (e.g. waiting times, ease of reaching provider);
   (iii) *Finances:* Factors involved in paying for medical services;
   (iv) *Efficacy/Outcomes of care:* The result of services provided (e.g. improvements in or maintenance of health);
   (v) *Continuity of care:* Constancy in provider or location of care;
   (vi) *Physical environment features of setting in which care is delivered:* (e.g. clarity of signs and directions, orderly facilities and equipment, pleasantness of atmosphere); and
   (vii) *Availability:* Presence of dental care resources (e.g. enough dental facilities and providers). The responses were summed up within each of the following seven sub-scales; a) general satisfaction, b) technical quality, c) interpersonal aspects, d) communication, e) financial aspects, f) time spent with doctor, g) access/availability/convenience.

A total satisfaction score, was computed from the sum of all the 49 items, and could thus have scores ranging from 49 to 245.

Ethical considerations: The study protocol received ethical clearance from the ethics committee of the Muhimbili University College of Health Sciences (MUCHS). An informed verbal consent was obtained from the participants prior to enrolment. Refusal to participate did not jeopardise/change management of the patient.

Data processing and statistical analysis: Data were keyed in twice using EpiData (*http://www.epidata.dk*) and the validity of data entry was checked using this program's facilities. The validated file was then exported to STATA (10) where the data file was corrected for logical errors.

RESULTS

A total of 516 patients, 323 female and 193 male, aged between 12 and 77 years (mean of 28.8 years), with 50% of the participants between 20 to 40 years were interviewed. The age distribution was quite similar at the different clinics. Most of the participants had rather low education, with about 63.2% of them only having primary school level education (Table 1). Over 60% of the participants had a monthly income of less than 50,000 Tshs (~ 50 USD) (Table 2). Most households had an average of five dependants, while a few had more than ten. The distance the patients had to travel to get to the clinics was less than five kms for 70% of the patients and less than 2% had to travel ten kilometres or more. Approximately half of the patients had visited the clinic only once in the last three years and one-third twice in the same period. Nearly all treatments (96.7%) were simple tooth extraction done under local anaesthesia. Only one patient had a filling made. The satisfaction scores obtained in the different subscales at the different clinics are shown in Table 3. No significant differences in patients' satisfaction level (overall or for the specific studied items) among the clinics were found. In all the five public dental clinics the answers to the specific sub-items, apart from the subscale *time spent with doctor*, were around the average and the presence of so few with a high ranking on any of the subscales.

Table 4 summarises the situation of personnel, equipment, treatment options, patient load, patient fees and patient handling before and after treatment for the different clinics. The listed cadres of dental personnel were all capable of performing dental extractions and were comparable in number in all the clinics. The sets of extraction forceps were all also comparable (n = 2), except for the Mnazi Mmoja clinic which had six sets. There was only one clinic that indicated not doing fillings (restoration work) (Table 4). However, only one patient reported having had a filling done during the entire study period. In four of the five clinics information to patients was given individually, the only exception being Mnazi Mmoja which provided such advice to a batch of waiting patients. In all the five clinics post-treatment information was given to patients individually. Patient fees were similar in all the five clinics, being 1,100 Tshs (~ one USD).

Table 1

Education status of the study participants by gender

	Education					
	Males		Females		Total	
	No.	(%)	No.	(%)	No.	(%)
Adult	17	(5.3)	12	(6.2)	29	(5.6)
Primary	215	(66.6)	110	(57.0)	326	(63.2)
Secondary	77	(23.9)	59	(30.6)	136	(26.4)
Other	13	(4.0)	12	(6.2)	25	(4.8)
Total	3.22	(100)	193	(100)	516	(100)

Table 2

Monthly household income (in Tanzanian shillings) of the study participants by gender

Income	Males		Females		Total	
	No.	(%)	No.	(%)	No.	(%)
> 50,000 TSH	110	(35.3)	78	(413)	188	(37.5)
20,000-50,000 TSH	41	(13.1)	30	(15.9)	71	(14.1)
10,000-20,000 TSH	26	(8.3)	24	(12.7)	50	(10.0)
< 10,000 TSH	135	(43.3)	57	(30.2)	193	(38.5)

DISCUSSION

In determining the level of patients' satisfaction with the services offered at the different public clinics it was decided to use the PSQ III (9) because it is certainly one of the most thoroughly researched measures of patient satisfaction. It has sound theoretical basis and great care has been taken in establishing reliability and validity. Further, it has been used in a wide variety of empirical studies that provided a valuable comparative data base. Patient characteristics were found to be similar in all the investigated clinics, comprising of predominantly women, young age, with low income, low level of education and coming from households with large numbers (> 5) of dependants. These characteristics seem to fit well with those of the lesser able segment of the population who cannot afford treatment in private settings and does reflect the real situation for the majority of citizens in Dar es Salaam. No differences were found between clinics in the level of patient satisfaction most probably due to comparable levels of manpower, facilities, patient load, patient fees, among other factors, in the studied settings (Table 4). Furthermore, in all the five clinics the main mode of treatment was tooth extraction which accounted, overall, for over 99% of all treatment offered, which is consistent with other studies done in Tanzania (1,11). As a matter of fact, only one filling was reported to have been done during the entire study period.

What seemed to have been the main factor behind patients' selecting a particular clinic appeared to have been the distance to the clinic as indicated by the short distance (< 5 Km) reported by majority (> 70%) of attendees. This could be due to the cost of transport (since most patients preferred to attend clinics that were easily reached without changing buses), as well as time to reach the clinic since most of them were in severe pain. What was rather disturbing about the results (for items; general satisfaction, interpersonal aspects, finance, access/availability/convenience and total score), was the clustering of answers around the average, with only a few with a high ranking on any of the subscales. The only exception seems to be the subscale relating to *time spent with doctor.* This pattern of findings, which was similar in all the five public dental clinics, indicates a strong need for improvement in the following areas: the technical quality of care needs to be addressed by increasing the competence of dentists in the performance of procedures such as endodontic treatment, denture work and possibly crown and bridge-work. Simple procedures such as simple tooth extraction under local anaesthesia, draining of abscesses, should be left to the Assistant Dental Officers (ADO) and Dental Assistants (DA) (1). This exercise, which will involve equipping the clinics with the necessary resources, will certainly reduce the number of unnecessary extractions. In addition, communication between dental care providers and the patients need to expand from its current limitation of just listening to a patient's complaint and deciding on treatment; and include provision of adequate knowledge to patients to allow them to reach a well informed decision about their treatment. This approach has been shown to allay fear and anxiety (12) improve satisfaction (13) as well as increase utilisation of dental services (14), which in our situation was very low as indicated by the low number of patients who had visited a dental clinic in the previous three years. To this end, dental care providers have to be trained in communication skills (15).

Table 3

Mean scores and ranges (in brackets) for the individual subscales and the total score for the five clinics

Clinic	General Satisfaction	Technical Quality	Interpersonal Aspects	Communication	Financial Aspects	Time with Doctor	Access, availability and convenience	Total Score
Magomeni	19.2 (13-27)	31.0 (23-38)	22.3 (14-29)	12.3 (8-16)	26.0 (16-33)	7.6 (3-10)	35.0 (22-44)	153.4 (131-168)
Mnazi Mmoja	18.9 (12-24)	31.3 (25-36)	22.5 (19-31)	12.0 (8-16)	25.1 (21-32)	7.7 (6-9)	32.8 (19-42)	150.1 (139-165)
Temeke	18.2 (15-21)	30.7 (27-35)	22.2 (17-25)	12.3 (10-14)	25.7 (21-30)	8.0 (6-9)	33.6 (29-37)	150.7 (141-160)
Mwananyamala	19.8 (16-24)	31.0 (25-36)	23.2 (19-27)	12.3 (8-16)	26.3 (20-31)	7.8 (4-9)	33.3 (27-42)	153.7 (140-167)
Sinza	18.9 (14-26)	31.4 (28-38)	22.9 (19-28)	12.3 (9-16)	23.7 (17-34)	7.7 (6-9)	35.4 (27-42)	152.7 (141-166)
Total	19.1 (12-27)	31.1 (23-38)	22.6 (14-31)	12.2 (8-16)	25.4 (16-34)	7.7 (3-10)	34.2 (19-44)	152.4 (131-168)

1,100 Tanzanian shillings (TSHS) are equivalent to one US dollar

Table 4

Manpower, equipment, treatment options and patient load and handling situation in the five clinics

	Magomeni	M/Mmoja	Temeke	Mwananyamala	Sinza
Dental personnel					
Dental officer (DDS)	1	1	2	1	1
Assistant Dental Officer (ADO)	2	1	1	1	-
Dental therapensists	1	1(2)	2	2	1
Health assistants	2	2	Nurse l	1	1
Instruments					
Set(s) of extraction forceps	2	6	2	2	1
No. of dental chairs	2	3	3	1	1
System of autoclaving	Yes	Yes	None/Boiling	Yes	Boiling
Treatment options available					
Extractions	√	√	√	√	√
Fillings	√	√	None	√	√
Dentures	√	√	None	√	None
Average No. of pts/day	12-15	20-30	12-15	15	12-15
Waiting area	Corridor	Special room	Corridor	Corridor	Corridor
Payment (inTshs)	1100	1100	1100	1100	1100
Information to patients before treatment	Individual	Yes (in batches)	Individual	Individual	Individual
Information to patients after treatment	Individual	Yes	Individual	Individual	Individual

Furthermore, there is need to provide waiting rooms in clinics where currently patients seat on the benches in the corridor while waiting for treatment, as well as improving the condition of waiting rooms for the clinic. In addition, separate rooms should be set aside for children with appropriate facilities, resources and trained human resource. This arrangement, if accompanied by a shift from extractions towards atraumatic dental practice (16) should assist in, not only allaying fears and anxiety, but also in developing a positive attitude towards dentistry (17).

Notably, there is a need to establish panels to determine, under various conditions, the appropriateness of various dental procedures. This would involve determination of efficacy/outcomes of; no treatment, filling; crown; root canal with a filling or crown and extraction categorised according to age; regular versus irregular use of dental care; degree of caries; degree of pain; degree of periodontal disease, and will be a key for improvements of oral health (18). To this end, clinics need to have a good structured record keeping system such as that proposed by Ireland *et al.* (19) and a good patient follow-up system, which at the moment, is virtually nonexistent. We are also encouraging regular exchange of views and experiences among the different dental clinics aimed at improving the quality of care. In conclusion, the areas that received average scores namely technical quality care, interpersonal aspects and communication need to be addressed in order to improve the rather modest level of patient satisfaction with dental care offered by public dental clinics in Dar es Salaam. The need to educate patients on the existence of different treatment possibilities (besides extraction) in order for them to seek, demand and expect best quality care available is also recommended. Finally, evaluation of patient satisfaction should be done continuously at regular intervals as a means of assessing progress in the quality of dental services.

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