

User Satisfaction with Oral health services in two Health Facilities in Maputo city, Mozambique

Satisfação dos usuários com os Serviços de Saúde Bucal em dois Centros de Saúde da Cidade de Maputo, Moçambique

Satisfacción de los usuarios con los servicios de Salud Bucal en dos Centros de Salud de la Ciudad de Maputo, Mozambique

Received: 10/30/2024 | Revised: 08/13/2025 | Accepted: 08/15/2025 | Published: 08/16/2025

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Abstract

Objective: We assessed the level of user satisfaction with oral health services in two health facilities in Maputo city. **Methodology:** We conducted a cross-sectional study using systematic sampling. Data was collected using a pre-tested questionnaire and we evaluated satisfaction across four dimensions: accessibility, infrastructure, interaction and provision of care. We performed descriptive and bivariate analyses using the Chi-square. **Results:** Out of 294 selected users, 266 (90.5%) were included in the study. Among them, 66.5% were female, half were aged between 18 and 29 years and 74.8% had completed secondary education. The overall satisfaction level was 79.3%. Users reported the highest satisfaction with the interaction dimension (89.9%) and the lowest with accessibility (63.9%). They gave negative evaluations to service availability (15.1%), waiting area (36.5%), and equipment condition (31.6%). The Alto-Maé Health Center recorded a significantly higher satisfaction level (91.4%, $p < 0.001$), compared to the Bagamoyo Health Center. We found no associations between overall satisfaction and socio-demographic variables. However, we observed associations with specific dimensions of satisfaction: age with accessibility ($p \leq 0.021$), education with infrastructure ($p \leq 0.037$), and occupation with both accessibility ($p \leq 0.039$) and interaction ($p \leq 0.007$). **Conclusion:** Users expressed a high level of satisfaction with oral health services in the two health facilities. Nevertheless, their concerns about service availability, waiting area and equipment highlight areas that require improvement.

Keywords: Satisfaction; Users; Oral health.

Resumo

Objectivo: Avaliámos o nível de satisfação dos usuários em relação aos serviços de saúde oral em duas unidades sanitárias da cidade de Maputo. **Metodologia:** Realizámos um estudo transversal com amostragem sistemática. A recolha de dados foi feita através de um questionário previamente testado. A satisfação foi avaliada em quatro dimensões: acessibilidade, infra-estrutura, interação e prestação de cuidados. Foram realizadas análises descritivas e bivariadas, utilizando o Qui-quadrado. **Resultados:** Dos 294 usuários seleccionados, 266 (90,5%) foram incluídos no estudo. Dentre estes, 66,5% eram do sexo feminino, metade tinha entre 18 e 29 anos de idade, e 74,8% tinham concluído o ensino secundário. O nível geral de satisfação foi de 79,3%. A dimensão com maior nível de satisfação foi a interacção (89,9%), e a de menor foi a acessibilidade (63,9%). Os utentes atribuíram avaliações negativas à disponibilidade dos serviços (15,1%), às condições da sala de espera (36,5%) e ao estado dos equipamentos (31,6%). O Centro de Saúde do Alto-Maé registou um nível de satisfação significativamente mais elevado (91,4%, $p < 0,001$), quando comparado ao Centro de Saúde de Bagamoyo. Não encontramos associações entre a satisfação geral e as variáveis sociodemográficas. No entanto, identificamos associações estatisticamente significativas entre a idade e a acessibilidade ($p \leq 0,021$), entre o nível de escolaridade e a infra-estrutura ($p \leq 0,037$), e entre a ocupação com a acessibilidade ($p \leq 0,039$) e a interacção ($p \leq 0,007$). **Conclusão:** Os utentes demonstraram um elevado nível de

satisfação com os serviços de saúde oral nas duas unidades sanitárias estudadas. No entanto, as avaliações negativas sobre a disponibilidade dos serviços, as condições da sala de espera e o estado dos equipamentos indicam áreas que requerem melhorias.

Palavras-chave: Satisfação; Usuários; Saúde bucal.

Resumen

Objetivo: Evaluamos el nivel de satisfacción de los usuarios con los servicios de salud bucodental en dos centros de salud de la ciudad de Maputo. Metodología: Se realizó un estudio transversal con muestreo sistemático. Los datos se recogieron mediante un cuestionario previamente probado. La satisfacción se evaluó en cuatro dimensiones: accesibilidad, infraestructura, interacción y prestación de atención. Se realizaron análisis descriptivos y bivariados mediante Chi-cuadrado. Resultados: De los 294 usuarios seleccionados, 266 (90,5%) fueron incluidos en el estudio. De ellos, el 66,5% eran mujeres, la mitad tenía entre 18 y 29 años y el 74,8% había terminado la enseñanza secundaria. El nivel global de satisfacción era del 79,3%. La dimensión con mayor nivel de satisfacción fue la interacción (89,9%), y la de menor, la accesibilidad (63,9%). Los usuarios valoraron negativamente la disponibilidad de los servicios (15,1%), las condiciones de la sala de espera (36,5%) y el estado del equipamiento (31,6%). El Centro de Salud de Alto-Macé registró un nivel de satisfacción significativamente mayor (91,4%, $p < 0,001$) que el Centro de Salud de Bagamoyo. No se encontraron asociaciones entre la satisfacción global y las variables sociodemográficas. Sin embargo, identificamos asociaciones estadísticamente significativas entre la edad y la accesibilidad ($p \leq 0,021$), entre el nivel educativo y la infraestructura ($p \leq 0,037$), y entre la ocupación y la accesibilidad ($p \leq 0,039$) y la interacción ($p \leq 0,007$). Conclusión: Los usuarios mostraron un alto nivel de satisfacción con los servicios de salud bucodental en los dos centros de salud estudiados. Sin embargo, las evaluaciones negativas de la disponibilidad de los servicios, las condiciones de la sala de espera y el estado del equipamiento indican áreas de mejora.

Palabras clave: Satisfacción; Usuarios; Salud bucal.

1. Introduction

User satisfaction with health services refers to the extent to which users perceive the effectiveness of the care they receive or how they judge whether their needs and expectations are being met (Ahmad *et al.*, 2011).

Although influenced by multiple factors, user satisfaction is a key indicator for assessing quality of services from the perspective of those receiving care. It also enables managers to understand how communities respond to the availability of health services and to promote the humanization of care within health institutions (Krut & Horachuck, 2021).

User satisfaction surveys are currently one of the main strategies for engaging users and defending their rights within public services. Based on the findings of these surveys, managers can implement or enhance actions that better respond to user's real needs (Torres & Costa, 2015; Kitsios, 2019).

Satisfied users are more likely to maintain a consistent relationship with health services, while dissatisfied users may discontinue care, which can lead to reduced service utilization (Wakaganda, 2017) and, consequently, increase the demand on other health units and negatively affect community health outcomes.

Assessing user satisfaction is a crucial step towards understanding and effectively addressing users' needs (Cui *et al.*, 2025). The World Health Organization recommends assessing the quality of health services from the users' perspective as a means of improving the care provided to the population (Maalman *et al.*, 2018).

In Mozambique, although some user satisfaction studies have been conducted in specific health units and programs, the evaluation of satisfaction with oral health services remain largely unexplored.

Therefore, this study reflects on the structural and programmatic reforms in oral health services and offers guidance to health service managers in identifying gaps and setting priorities for planning and delivering oral health care within the National Health Service. It also assesses user satisfaction with oral health services and identifies associated factors in two public health facilities in Maputo City, Mozambique.

2. Methodology

A cross-sectional study with a quantitative approach was conducted. A structured questionnaire, adapted from the Dental Satisfaction Questionnaire, was used. It was based on a 5-point Likert scale and covered four dimensions: accessibility, infrastructure, interaction, and care provision. The questionnaire was translated from English and validated for Portuguese. The researcher administered it between September and October 2023.

Study location: The study was carried out at the Alto Maé and Bagamoyo health facilities, located in the city of Maputo, the capital of Mozambique.

Sample: The study population consisted of 1,241 users – the combined monthly average number of consultations recorded at both health facilities in the previous year (2022). The sample size was calculated using a proportion formula for a finite population, assuming an expected prevalence of 50%, a margin of error of 0.05, and a confidence level of 95% ($\alpha=5\%$), following the World Health Organization's guidelines for hospital-based surveys (World Health Organization, 2003). The final sample included 294 users, stratified into 176 (60%) from the Alto-Maé Health Center and 118 (40%) from the Bagamoyo Health Center.

Participant selection was carried out through systematic sampling in each stratum, in accordance with WHO guidelines (World Health Organization, 2013).

Ethical considerations: This study was approved by the Institutional Health Bioethics Committee of the Faculty of Medicine and Maputo Central Hospital under reference CIBS FM&HCM 56/2023. All participants signed the Free and Informed Consent Form after being informed about the study objectives.

Data analysis: Data were analyzed using the Statistical Package for the Social Sciences v.25.0 (SPSS, IBM Corp., Armonk, NY, USA). The characterization of the population based on socio-demographic variables was performed using descriptive statistics, including absolute and relative frequencies. To verify the association between satisfaction and socio-demographic characteristics, chi-square or Fisher's exact tests were used. The proportion formula was used in a finite population, and an expected prevalence of 50%.

3. Results

Of the 294 users selected, 266 agreed to participate in the study, resulting in a response rate of 90.5%. Among them, and as shown in Table 1, 162 (60.9%) were from the Alto- Maé Health Center and 104 (39.1%) from the Bagamoyo Health Center.

Table 1- Socio-demographic characteristics of the study participants (n = 266).

Variable	Category	n (%)
Health facility	Alto-Maé	162 (60.9)
	Bagamoyo	104 (39.1)
Gender	Female	177 (66.5)
	Male	89 (33.5)
Age group	18–29 years	133 (50.0)
	30–39 years	68 (25.6)
	40–49 years	28 (10.5)
	≥50 years	37 (13.9)
Education	No formal education	14 (5.3)
	Primary	28 (10.5)
	Secondary	199 (74.8)
	University	25 (9.4)

Occupation	Student	47 (17.7)
	Employed	50 (18.8)
	Private worker	95 (35.7)
	Unemployed	74 (27.8)

Source: Authors.

Half of the participants were between 18 and 29 years old. The majority were female (66.5%), had completed secondary education (74.8%), and worked in the private sector (35.7%).

As shown in Table 2, the overall user satisfaction with oral health services was 79.3%. The interaction dimension recorded the highest satisfaction (89.9%), while accessibility had the lowest (63.9%).

Table 2 - Distribution of user satisfaction levels by dimensions and item.

Dimension	Variables	Dissatisfied n (%)	Neutral n (%)	Satisfied n (%)	n
Accessibility	Ease of admission process	30 (11,3)	22 (8,3)	214 (80,4)	266
	Availability of dental services when needed	69 (25,9)	157 (59,0)	40 (15,1)	266
	Availability of personalized services	32 (12,0)	196 (73,7)	38 (14,3)	266
	TOTAL	46 (17,3)	50 (18,8)	170 (63,9)	266
Infrastructure	Waiting area	91 (34,2)	78 (29,3)	97 (36,5)	266
	Cleaning in the Office	48 (18,0)	41 (15,4)	177 (66,6)	266
	State of equipment and comfort in the Office	32 (12,0)	150 (56,4)	84 (31,6)	266
	Privacy during service	49 (18,4)	28 (10,5)	189 (71,1)	266
	TOTAL	59 (22,2)	27 (10,2)	180 (67,6)	266
Interaction	Ease of dialogue with professionals	8 (3,0)	23 (8,6)	235 (88,3)	266
	Respect, trust from the healthcare team	7 (2,6)	37 (13,9)	222 (83,5)	266
	Clarification of doubts about your oral health	17 (6,4)	65 (24,4)	184 (69,2)	266
	Guidelines and advice during and after treatment	10 (3,7)	38 (14,3)	218 (82,0)	266
	TOTAL	8 (3,0)	19 (7,1)	239 (89,9)	266
Provision	Treatment performed	63 (23,7)	22 (8,3)	181 (68,0)	266
	Pain control during care	51 (19,2)	93 (35,0)	122 (45,8)	266
	Resolution of your problem	71 (26,7)	25 (9,4)	170 (63,9)	266
	Use of personal protective equipment	0 (0,0)	171 (64,3)	95 (35,7)	266
	TOTAL	74 (27,8)	8 (3,0)	184 (69,2)	266
General Satisfaction		48 (18,0)	7 (2,6)	211 (79,3)	266

Source: Authors.

Participants reported varying levels of satisfaction across dimensions. Notably, availability of dental services and personalized services (accessibility), waiting area conditions, and equipment condition (infrastructure) showed satisfaction levels below 50%.

As shown in Table 3, among the two health facilities, satisfaction was higher at the Alto-Maé Health Center (91.4%), with a statistically significant difference ($p < 0.001$). Men reported slightly higher satisfaction (80.9%) than women (78.5%). Satisfaction increased with age, with users ages ≥ 50 years reporting the highest satisfaction (91.9%). Users with secondary and university education reported rates of 78.9% and 88.0%, respectively.

Table 3 - Overall user satisfaction with oral health services by health facility and socio-demographic characteristics (n = 266).

Variable	Dissatisfied n (%)	Neutral n (%)	Satisfied n (%)	p-value
Health Facility				<0.001
Alto Maé	12 (7.4)	2 (1.2)	148 (91.4)	
Bagamoyo	36 (34.6)	5 (4.8)	63 (60.6)	
Gender				0.919
Female	33 (18.6)	5 (2.8)	139 (78.5)	
Male	15 (16.9)	2 (2.2)	72 (80.9)	
Age				0.260
18–29 years	30 (22.6)	4 (3.0)	99 (74.4)	
30–39 years	12 (17.6)	2 (2.9)	54 (79.4)	
40–49 years	4 (14.3)	0 (0.0)	24 (85.7)	
≥50 years	2 (5.4)	1 (2.7)	34 (91.9)	
Education				0.673
No formal education	2 (14.3)	1 (7.1)	11 (78.6)	
Primary	7 (25.0)	0 (0.0)	21 (75.0)	
Secondary	36 (18.1)	6 (3.0)	157 (78.9)	
University	3 (12.0)	0 (0.0)	22 (88.0)	
Occupation				0.214
Student	13 (27.7)	2 (4.2)	32 (68.1)	
Employed	8 (16.0)	1 (2.0)	41 (82.0)	
Private worker	13 (13.6)	3 (3.2)	79 (83.2)	
Unemployed	14 (18.9)	1 (1.4)	59 (79.7)	

Source: Authors.

Although overall satisfaction was high across most subgroups, no statistically significant associations were found between overall satisfaction and socio-demographic characteristics.

Table 4 describes the relationship between satisfaction by dimension and socio-demographic characteristics.

Table 4 - Association between satisfaction by dimension and socio-demographic characteristics.

Dimension	Accessibility		Infrastructures		Interaction		Provision	
	χ^2	p value	χ^2	p value	χ^2	p value	χ^2	p value
Gender	0,736	0,692	5,191	0,075	1,419	0,556	0,265	0,907
Age	14,182	0,021*	6,727	0,349	14,449	0,021*	13,621	0,021*
Occupation	16,266	0,039*	14,859	0,062	22,595	0,007*	12,827	0,078
Education	2,781	0,862	13,542	0,037*	4,914	0,440	1,723	0,937

Source: Authors.

There were statistically significant associations between age and both accessibility and interaction ($p \leq 0.021$), between Occupation and accessibility ($p \leq 0.039$) and interaction ($p \leq 0.007$), and between education and infrastructure ($p \leq 0.037$).

4. Discussion

This study assessed user's satisfaction with oral health care provided in two health facilities in Maputo city. The response rate was high, similar to those obtained at King Saud University College in Saudi Arabia (Mahrous & Hifnawy, 2013), and in Australia (Ellis *et al.*, 2022). Most participants were women, a trend also observed in studies conducted in Nigeria (Olamuyiwa & Adeniji, 2021) and Indonesia (Akbar, Pasinringi & Awang, 2020). This may reflect women's greater interest in aesthetics and self-care, their prioritization of health and their central role in family healthcare. Additionally, physiological factors – such as hormonal changes from puberty through – can increase the need for oral healthcare in women (Nascimento *et al.*, 2020).

The low utilization of health services by men is attributed to cultural norms and it limits their engagement with health systems (Tumba *et al.*, 2024). Understanding these gender dynamics is crucial for designing services that are equitable and accessible for all.

Although the overall satisfaction observed in this study was high, it was lower than the levels reported in Kenya (Kabubei, 2022) and Saudi Arabia (Wencheslaus, Mlangwa & Sohal, 2024). In contrast, a study conducted in a University clinic in Tanzania showed moderate satisfaction (Wencheslaus, Mlangwa & Sohal, 2024). These high satisfaction rates may be associated with a response bias (gratitude bias), driven by a feeling of gratitude for the services provided, especially in resource-limited countries, thereby increasing satisfaction (Fernandes, Coutino & Pereira, 2008; Lerner *et al.*, 2015). Gratitude and satisfaction have been linked to improved health, better relationships with health services, and a sense of life meaning (Kerry, Chhabra & Clifton, 2023).

Chirindza, Mandlate and Chavane, (2022) also found high satisfaction among users, attributing this to low expectations, particularly in public health units where tooth extraction is often the only option for dental issues. Since public oral health services often focus on pain relief, users who arrive in pain and leave feeling better tend to express high satisfaction.

This study found that satisfaction was highest in the domains of user-professional interaction and provision of care. Similar findings have been reported in previous studies, where openness, empathy, and clarity from health professionals were essential to fostering trust (Olamuyiwa & Adeniji, 2021). Effective communication remains a cornerstone of patient satisfaction and adherence to treatment plans (Campos *et al.*, 2024). This underscores the crucial role of interpersonal relationships, which users may value even more than infrastructure and technology (Campos *et al.*, 2024; Zakaria *et al.*, 2024).

Several studies reported negative assessments regarding the waiting areas and dental equipment. Mahrous and Hifnawy, (2013) also reported similar levels of dissatisfaction, often linked to unmet expectations. In Mozambique, many health facilities were built during the colonial era, and lack appropriate facilities, including comfortable and private waiting areas. These factors may reduce satisfaction, particularly when users are required to wait in discomfort or in public view.

Concerns regarding equipment likely stem from the outdated or malfunctioning tools still used in many clinics. (Borde *et al.* (2023) reported that infrastructure and supply issues are key contributors to dissatisfaction in Maputo's health services. Equipment perceived as old or inadequate may raise concerns about treatment safety and effectiveness. Some users may also compare what they see locally to higher quality services they have experienced elsewhere. These observations point to the need for investment in dental equipment modernization and maintenance.

The high satisfaction rate observed at the Alto- Maé Health Center may be linked to better service quality and user experience. Interestingly, men reported slightly higher satisfaction than women, consistent with findings from Brazil (Bordin *et al.*, 2017). This could be because women tend to have higher expectations of care, especially regarding cleanliness, privacy, and attentiveness.

With the exception of age, no other associations were found between overall satisfaction and socio-demographic characteristics – a finding consistent with studies from Nigeria (Tanbakuchi, Amiri & Valizadeh, 2018; Olamuyiwa and Adeniji, 2021). This may suggest that users in low-resource settings develop lower expectations or adapt to service constraints over time, which could mask the impact of individual characteristics on satisfaction.

In this study age was significantly associated with satisfaction in the domains of accessibility and interaction. Similar results have been reported in Southeast Asia by (Rosnu *et al.*, 2022) and in a recent systematic review (Garcia *et al.*, 2025). Health systems in Mozambique often prioritize access for vulnerable populations such as children, the elderly, and pregnant women. This preferential treatment may contribute to the higher satisfaction observed among older users.

5. Final Considerations

The level of user satisfaction with oral health services at the Alto- Maé and Bagamoyo health facilities is high. Positive interaction between health professionals and users plays a significant role in driving satisfaction. However, concerns remain regarding service availability of services, the conditions of waiting areas, and the state of dental equipment. These findings highlight the need for targeted improvements in service infrastructure and logistics. Strengthening policies that promote equitable access and continuous quality improvement can help maintain high user satisfaction while addressing the gaps identified in this study.

Conflict of Interest

The authors declared that there is no conflict of interest in this research.

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