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Reasons for Delay in Seeking Treatment for Dental Caries in Tanzania

Tatheer Sachedina [a], *Karpal Singh Sohal* [b*], *Sira Stanslaus Owibingire* [b], *Omar J.M. Hamza* [c]

[a] *Department of Orthodontics, Paedodontics and Community Dentistry, Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania*
[b] *Department of Oral and Maxillofacial Surgery, Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania*
[c] *Department of Oral and Maxillofacial Surgery, Muhimbili National Hospital, Dar es Salaam, Tanzania*

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ABSTRACT

Introduction: The delay in seeking dental treatment is a universal health problem, with a reported prevalence as high as 98%. It is a critical feature not only in planning management but also in the final treatment outcome.
Aim: This study aimed to determine the reasons for the delay in seeking treatment for dental caries amongst patients attending public dental clinics in Dar es Salaam, Tanzania.
Methodology: This was a cross-sectional study carried out in 5 public hospitals in Dar es Salaam, Tanzania. It included 315 adult patients who had dental caries. Data were collected using a questionnaire that included questions regarding reasons for the delay in seeking care for dental caries. Data were analysed using the SPSS computer software version 26. A one-way analysis of variance was used to assess the association between variables, and the significance level was set at $P < .05$.
Results: A majority (n = 244, 77.5%) of the participants delayed seeking dental care upon noting a problem in their teeth. However, the association between the sociodemographic characteristics of the participants and delay in seeking dental care was statistically insignificant ($P > .05$). The most common reason given by the participants who delayed seeking dental care for their decayed teeth included self-negligence (n = 184, 75.4%), the practice of self-medication (n = 164, 67.2%), and ignorance (n = 110, 45.1%).
Conclusions: The majority of patients experiencing dental caries seek dental care very late. Delay in seeking dental care is not dependent on sociodemographic characteristics of individuals. Self-negligence, the practice of self-medication, and ignorance are the major reasons for the delay.

Introduction

Dental caries is a global oral health problem characterised by a progressive demineralisation of the tooth.[1,2] It remains a major problem in the adult population in both developing and industrialised countries,[3] affecting nearly 100% of adults regardless of their sociocultural background.[1,2] Because it is a global problem, there is a relatively well-developed caries management system[4] that aims at saving the tooth. Caries management is advocated to be best done on a personalised basis.[5] Thus, management can include tooth-saving management (fluoride application, restoring teeth with cavities, and endodontic treatment) to the extraction of the tooth, the latter being considered the last resort.

Often, patients with dental caries present late at a dental office, with complicated oral health–related problems.[6] The delay in seeking dental treatment is a universal health problem with a reported prevalence of as high as 98%.[6–8] Factors

* *Corresponding author*. Department of Oral and Maxillofacial Surgery, Muhimbili University of Health and Allied Sciences, P.O. Box 65014, Dar es Salaam, Tanzania.
E-mail address: karpal@live.com (K.S. Sohal).

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ascribed to the delay in seeking early intervention for dental caries include dental fear, ignorance, limited access to dental clinics, a busy work schedule, and poverty.[6–10]

In Tanzania, the field of dentistry has advanced drastically over the last few years, yet patients still seek treatment late with unrestorable teeth.[11] A previous study from Tanzania reported that about 80% of patients sought dental care late.[7] Considering that the last study to assess the reason for the delay in seeking treatment for dental caries in our setting was carried out in 2011,[7] in addition to the fact that it was a single–health facility study, the current study was conducted. This study aimed to determine the reasons for the delay in seeking treatment for dental caries amongst patients attending public dental clinics in Dar es Salaam, Tanzania. The results from this study give an insight into the common reasons for the delay in seeking dental care and the associated factors. It provides much-needed information to the dental practitioner and policymakers in designing strategies to overcome this globally recognised health problem.

Materials and methods

This descriptive cross-sectional study was carried out in public hospitals in Dar es Salaam between September 2020 and February 2021. The study included the Muhimbili National Hospital (MNH) Dental Clinic, Muhimbili University of Health and Allied Sciences (MUHAS) Dental Clinic, and 3 regional referral hospitals (Amana, Mwananyamala, and Temeke) in Dar es Salaam, Tanzania.

The inclusion criteria included all dental patients aged 18 and older who visited the dental clinic with complaints of toothache, a cavity in the tooth, a discoloured tooth, and/or a broken tooth. The exclusion criteria included dental patients with mental health challenges and patients who attended the dental clinic for reasons not related to dental caries, such as periodontal diseases.

The sample size was estimated using the population adjustment formula for single proportion estimation.[12] A sample of 315 participants was calculated based on a 95% confidence level, a 5% precision, power of 0.8, and an expected proportion of 79%.[7] A stratified random sampling method was used, whereby the included hospitals were used as strata. The list of patients who attended the dental clinics on day of data collection was obtained, and each was assigned a number. Using a simple random sampling method, the study participants were then obtained. Because of the variation in the number of dental patients who visited different dental clinics in the city, dental patients attending MUHAS Dental Clinic contributed 35% of the estimated sample size. Patients from MNH Dental Clinic represented 20% of the sample, and those from Amana, Mwananyamala, and Temeke hospitals' dental clinics constituted 15% each.

A pretested questionnaire (in the Swahili language) was used to interview the study participants. The interview was carried out in a separate room whilst patients were waiting to be treated. The questionnaire contained questions inquiring about the participants' sociodemographic characteristics and the duration of the current complaint. Other questions included the time lapse since the participant noted the problem in their tooth for the first time and reasons for coming late for treatment.

The data obtained from this study were coded and analysed using SPSS software version 26.0. Data were presented in the form of the median for continuous variables and percentages for categorical variables.

Participant age was grouped into <40 years, 40–59 years, and ≥60 years. The level of education was dichotomised into a low level (no formal and primary education) and a high level (secondary and tertiary education). Marital status was grouped into those with partners (married, cohabiting) and those without partners (single, divorced, widowed). Area of residence was grouped as urban (urban centre) and suburban areas. Employment status was grouped into informal employment, public formal employment, and private formal employment. Delay in seeking dental care was considered when the participant sought care more than 1 week after noting the problem for the first time.

The data ware presented using frequencies and percentages in the form of tables and charts. Where appropriate, one-way analysis of variance and chi-square test were used to assess the delay in seeking dental treatment in relation to sociodemographic characteristics. The probability level of $P < .05$ was selected for statistical significance. Univariate and multivariate linear and logistic regression models were used to assess associations between the sociodemographic characteristics of participants and reasons for the delay in seeking dental treatment.

Ethical clearance was sought from the MUHAS Institution Review Board, and permission to conduct the study was obtained from the appropriate authorities of different departments of MUHAS Dental Clinic, MNH Dental Clinic, and Amana and Mwananyamala hospitals. Only those participants who freely gave consent to participate were included in the study. All information was handled confidentially, and refusal to participate or withdrawal from the study did not result in any consequence for the patient.

Results

This study had 315 participants, most of whom were female (n = 181, 57.5%). The age range of participants was 18 to 81 years with a median age of 37 years. Most (n = 197, 62.5%) participants had a partner, and 228 (72.4%) participants had a high level of education (Table 1).

The time that participants took to seek dental care since they first noted a cavity in their tooth ranged from 1 day to 11 years. A majority (n = 244, 77.5%) of the participants delayed seeking dental care (more than 1 week) upon noting a problem in their teeth.

The duration of recent unbearable constant pain for which the participants attended a dental clinic ranged from 1 day to 6 months. Only 67 (21.3%) participants sought dental care more than 1 week after the onset of constant and/or unbearable pain.

Thirty-five (11.1%) participants did not take any measure to control pain before reporting to the dental clinic, whereas 278 (88.3%) used over-the-counter medication and only 2 (0.6%) opted for herbal medication.

Table 1 – Distribution of study participants according to sociodemographic characteristics.

Sociodemographic characteristics	Participants		
	Male (n = 134)	Female (n = 181)	Total (N = 315)
Age, y			
18–39	86 (64.2%)	107 (59.1%)	193 (61.3%)
40–59	38 (28.4%)	67 (37.0%)	105 (33.3%)
60+	10 (7.5%)	7 (3.9%)	17 (5.4%)
Relationship status			
With partner	80 (59.7%)	117 (64.6%)	197 (62.5%)
Without partner	54 (40.3%)	64 (35.4%)	118 (37.5%)
Residence			
Urban	16 (11.9%)	27 (14.9%)	43 (13.7%)
Suburban	118 (88.1%)	154 (85.1%)	272 (86.3%)
Education level			
Low	33 (24.6%)	54 (29.8%)	87 (27.6%)
High	101 (75.4%)	127 (70.2%)	228 (72.4%)
Employment status			
Informal employment	78 (58.2%)	137 (75.7%)	215 (68.3%)
Employment (public)	19 (14.2%)	25 (13.8%)	44 (14.0%)
Employment (private)	37 (27.6%)	19 (10.5%)	56 (17.8%)

Participants who were aged 60 years and older, who were female, who had a high level of education, who resided in suburban areas, who lived with partners, and who had informal employment were more likely to delay seeking dental care. However, the association between these sociodemographic characteristics of the participants and delay in seeking dental care was statistically insignificant ($P > .05$).

The most common reason given by the 244 participants who delayed seeking dental care for their decayed teeth included the notion that the problem was not severe (n = 184, 75.4%) and that self-medication helped to relieve pain (n = 164, 67.2%). Other reasons are presented in the Figure.

There was no statistically significant relationship between sociodemographic characteristics of participants and reasons such as high cost of dental treatment, dental fear, and unpleasant past dental experience. Few sociodemographic characteristics were significantly associated with reasons for delay like negligence, the tendency to self-medicate, and ignorance (Table 2).

Delay due to negligence was associated with the marital status of the participants. Those with a partner were 2 times more likely to be self-negligent compared to ones without a partner (odds ratio [OR], 1.9; 95% confidence interval [CI], 1.05–3.45).

Tendency to self-medicate as a reason for the delay in seeking dental care was significantly related to the marital status and employment status of the participants (Table 2). The odds of delay due to self-medicating were 2-fold greater when the participant had a partner compared to when they did not have a partner (OR, 2.4; 95% CI, 1.34–4.49). The likelihood of delaying seeking dental care due to self-medication was 10 times higher if the participants were employed in the private sector compared to the public sector (OR, 0.1; 95% CI, 0.05–0.43).

Ignorance as the cause of delay in seeking dental care was associated with the employment status of the participants. Odds of delay due to ignorance were higher in participants employed in the private sector by 2.5-fold compared to those in informal employment (OR, 0.4; 95% CI, 0.22–0.85) and by 5-fold compared to public-sector employees (OR, 0.2; 95% CI, 0.09–0.66).

A delay in seeking dental care due to a lack of dental services in the vicinity was associated with the age and marital status of the patients. Compared to participants aged 18 to 49 years, those aged 40 to 59 years were 3 times more likely to delay seeking dental care due to a lack of dental services (OR, 4.1; 95% CI, 1.5–10.9). Likewise, those older than 60 years were 5 times more likely to report a delay in seeking dental care due to a lack of dental services in their vicinity (OR, 4.8; 95% CI, 1.1–21.8). On the other hand, participants without partners were 4 times more likely to delay seeking dental care due to a lack of dental services compared to those with partners (OR, 4.0; 95% CI, 1.5–10.2).

Delay in treatment-seeking due to a busy schedule was associated with the employment status of the participant. Compared to participants who had informal employment, the odds of delaying seeking dental care due to busy working schedules amongst public-sector employees were 8 times

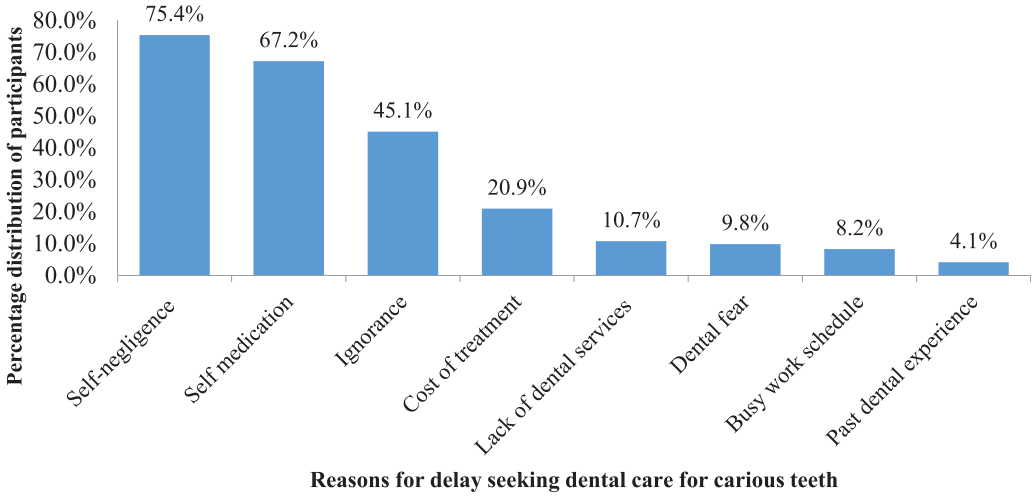

Fig – Percentage distribution of participants according to reasons for the delay in seeking dental care.

Table 2 – Reasons for delay in seeking dental care for carious teeth according to sociodemographic characteristics of participants.

Sociodemographic characteristics of the participants who delayed seeking treatment for tooth decay (n = 244)		Reasons for delay seeking dental care for carious teeth							
		Self-Negligence	Self-medication	Ignorance	Cost of treatment	Lack of dental services	Dental fear	Busy schedule	Past dental experience
Age, y	18–39	109 (75.7%)	89 (61.8%)	61 (42.4%)	26 (18.1%)	10 (6.9%)	11 (7.6%)	10 (6.9%)	4 (2.8%)
	40–59	64 (73.3%)	64 (75.3%)	39 (45.9%)	18 (21.2%)	13 (15.3%)	10 (11.8%)	10 (11.8%)	5 (5.9%))
	60+	11 (73.3%)	11 (73.3%)	10 (66.7%)	5 (33.3%)	3 (20%)	3 (20%)	-	1 (6.7%)
	P value	.979	.096	.194	.355	.068	.236	.215	.454
Sex	Male	75 (75.8%)	62 (62.6%)	47 (47.5%)	21 (21.2%)	13 (13.1%)	8 (8.1%)	10 (10.1%)	6 (6.1%)
	Female	109 (75.2%)	102 (70.3%)	63 (43.4%)	28 (19.3%)	13 (9.0)	16 (11.0%)	10 (6.9%)	4 (2.8%)
	P value	.917	.207	.535	.716	.300	.447	.370	.324
Relationship status	Without partner	58 (67.4%)	47 (54.7%)	37 (43.0%)	20 (23.3%)	14 (16.3%)	6 (7.0%)	7 (8.1%)	4 (4.7%)
	With partner	126 (79.7%)	117 (74.1%)	73 (46.2%)	29 (18.4%)	12 (7.6%)	18 (11.4%)	13 (8.2%)	6 (3.8%)
	P value	*.033*[1]	*.002*[1]	.633	.361	*.036*[1]	.269	.981	.748
Residence	Urban	22 (71.0%)	21 (67.7%)	13 (41.9%)	4 (12.9%)	2 (6.5%)	5 (16.1%)	4 (12.9%)	2 (6.5%)
	Suburban	162 (76.1%)	143 (67.1%)	97 (45.5%)	45 (21.1%)	24 (11.3%)	19 (8.9%)	16 (7.5%)	8 (3.8%)
	P value	.539	.946	.706	.346	.546	.208	.307	.479
Education level	Low	55 (82.1%)	50 (74.6%)	33 (49.3%)	14 (20.9%)	9 (13.4%)	10 (14.9%)	4 (6.0%)	-
	High	129 (72.9%)	114 (64.4%)	77 (43.5%)	35 (19.8%)	17 (9.6%)	14 (7.9%)	16 (9.0%)	10 (5.6%)
	P value	.136	.129	.420	.845	.387	.101	.435	.066
Occupation	Informal employment	127 (74.7%)	117 (68.8%)	73 (42.9%)	37 (21.8%)	22 (12.9%)	15 (8.8%)	6 (3.5%)	6 (3.5%)
	Employment (public)	21 (70.0%)	13 (43.3%)	9 (30.0%)	4 (13.3%))	2 (6.7%)	3 (10.0%)	7 (23.3%)	2 (6.7%)
	Employment (private)	36 (81.8%)	34 (77.3%)	28 (63.6%)	8 (18.2%)	2 (4.5%)	6 (13.6%)	7 (15.9%)	2 (4.5%)
	P value	.474	*.007*[1]	*.01*[1]	.535	.206	.633	*<.001*[1]	.717

[1] Significant values indicated in italics, $P < .05$.

higher (OR, 8.3; 95% CI, 2.5–26.92) and 5 times higher amongst private-sector employees (OR, 5.2; 95% CI, 1.64–16.29).

Discussion

Delay in seeking care for an ailment is a cross-cutting issue in all medical fields, including dentistry.[10,13,14] Delay in reporting for treatment of dental caries is a critical feature not only in planning management but also in the final treatment outcome.[6–8] Considering a serious burden on the level of human and material resources, it was important to assess the reasons and factors that influence late treatment-seeking behaviour amongst patients with dental caries.

In the current study, nearly 80% of the participants had delayed seeking dental care, a prevalence similar to the findings from a previous study carried out in Tanzania in 2011.[7] Such findings depict that despite recent improvements in number of health facilities and recruited personnel providing dental care in Tanzania, the problems of delaying seeking care and nonadherence to advice from regular dental visits amongst people in the community have persisted.[15]

On the other hand, more than three-quarters of the participants sought treatment within 1 week after the onset of constant and/or unbearable pain, despite self-medicating. This finding may not be astonishing since most individuals seek oral health services only when they have symptoms and suffer a certain degree of incapacitation.[13,15] The act of self-medication before seeking dental care noted in this study has also been reported by several authors.[7,10]

In the current study, there was no statistically significant association between the sociodemographic characteristics of the patients and the delay in seeking dental care. Msolla et al[13] reported similar findings in their study assessing the delay in seeking treatment amongst patients with orofacial tumors at MNH. Findings from this study point out that delay in seeking treatment for a carious tooth is a deep-rooted sociocultural practice. The socioeconomic status of an individual does not influence this practice on its own but is part of a combination of several different factors.

The participants in the current study gave numerous reasons for the delay in seeking dental care. Amongst these, the most common reason was self-negligence. The majority of the participants had the notion that the problem was not severe and would resolve on its own. Several authors have reported that self-neglect is one of the major reasons for delay in seeking dental care.[8,10,15] In the initial stages of dental caries, the toothache is often of short duration and not severe; this leads to individuals neglecting the disease. As it is elsewhere,[8,10,15] the majority of the Tanzanians perceive dental care as a useful service only when a toothache is severe and unbearable, since to them oral health is of low priority. A multitude of factors can lead one to self-neglect in the area of dental care. These can include socioeconomic factors, medical comorbidities, psychological disorders, and physical impairment.[16] In the current study, the delay due to self-negligence was associated with the marital status of the participants.

Tendency to self-medicate was another major reason for the delay in seeking dental care. Self-medication entails the use of drugs to treat self-diagnosed disorders without proper professional consultation.[17] It is a common practice that has been reported in both developing and developed countries.[8,10,17,18] The ease of access to medications by patients without appropriate prescriptions by professionals promotes the practice of self-medication.[10] The practice of self-medication is driven by multiple factors. In the current study, individuals who had partners and those working in the private sector were more likely to practice self-medication, thereby seeking dental care late.

Ignorance was the third most common reason for the delay in seeking dental care. Several other authors have found that ignorance is amongst the leading causes of delay in seeking dental care.[7,8,10,15] An individual who is ignorant of a disease condition lacks information about prevention strategies and treatment options and, as a consequence, ends up delaying seeking diagnosis and treatment.[19]

The treatment cost for dental caries is generally high and therefore contributes to delaying seeking dental care worldwide.[6,10,15,20–22] In this study, only 20% of the individuals reported that cost was the cause of delaying seeking treatment. This, in conjunction with the findings that only a few individuals reported the lack of dental services and poor past dental experience as the cause of delay in seeking dental care, is promising. Such findings imply that the government's efforts to ensure that basic high-quality dental care services are available to Tanzanians at an affordable cost are productive.

The main limitation of this study may be that it did not include patients who attended privately owned dental clinics. As such, this might have led to selection bias, hence limiting the generalisability of our findings.

However, despite any limitations, the strengths of the study are based on the fact that the participants were selected from 5 public hospitals and the days of visit for data collection were randomly selected; moreover, the participants were also included randomly, thus reducing the bias. If consideration is given to the general population who rely mostly on publicly owned dental clinics for dental care, this study provides actual reasons for the delay in seeking dental care amongst Tanzanians.

Conclusions

The majority of patients experiencing dental caries seek dental care very late. Delay in seeking dental care is not dependent on sociodemographic characteristics of individuals. Several factors influence late presentation amongst patients; however, self-negligence, the practice of self-medication, and ignorance play major roles.

Conflict of interest

None disclosed.

Supplementary materials

Supplementary material associated with this article can be found in the online version at doi:10.1016/j.identj.2022.07.012.

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