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Utilisation of Oral Health Services and Associated Factors in a Sub-Urban Population in Western Uganda

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Abstract

Aim: To determine the prevalence and factors affecting the level of utilization of oral health services in a sub urban adult population in Ishaka-Western Uganda.

Methods: A community-based cross-sectional study was conducted among 384 study participants. Data was collected using pre-tested and structured questionnaires. Data was entered in Epi-info computer software version 3.5.1 and exported to STATA Version 14.0 for analysis. Univariate analysis and modified Poisson regression were done to identify factors associated with utilization of oral health services. Crude prevalence ratios with 95% confidence interval were used to determine the level of significance at bivariate meanwhile adjusted prevalence ratios were calculated at multivariate analysis to establish independent significant factors.

Results: The mean age of the study participants was 30.22 ± 9.97. It was observed that 36.72% of the study participants had utilized oral health services. Factors affecting utilization of oral health services that were statistically significant were level of education (tertiary level of education versus none) (P<0.001), average monthly income of >1,000,0000 Shilings (about $300) versus <501,000 (about $150) (P<0.001), no phobia for dental procedures (P=0.035), perception that oral health visits are important (P=0.017) and positive attitude of attending health workers (P=0.028).

Conclusion: This study has shown that the level of utilization of oral health services in the studied suburban adult population was poor. The level of education, income and phobia for dental procedures were associated with the utilization of oral health services. It is recommended that oral health promotion strategies be deployed in order to increase awareness and access to oral health care.

Keywords: Oral health services, community-based cross-sectional study, Uganda

INTRODUCTION

According to the WHO[1], oral health means more than just good dentition: It is a state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity[1]. Utilization of dental services can be unambiguously defined as the proportion of a defined population with one or more dental visits in a given time period, usually a calendar year [2].

Oral health is one of the most neglected areas of global health, yet 90% of people worldwide have had some form of oral health condition such as caries and periodontitis [3]. Globally, the average coverage of oral and dental care is 58.4% and 48.5% in developed countries [3]. This may be attributed to dental services being expensive, with oral diseases being the fourth most expensive diseases to manage [4]. The direct financial burden of dental services in the world is estimated at $298billion per year [5] with the Global Burden of Disease being estimated that oral diseases affect 3.5 billion people worldwide [1].

The utilization of dental services is varied across countries. In developing countries, the majority of people only visit the dentist for pain relief rather than preventive care [6], while in developed countries about 40–80% of the adults visit a dentist in a given year [7]. Studies from developed countries assessing the level and the pattern of utilization of dental health services have shown fair to good utilization patterns [8-10]. Nonetheless, financial barriers to obtaining needed care were comparatively higher for dental care relative to other healthcare services [5].

Studies from the African continent highlight poor utilization of dental care across urban and rural populations because of economic difficulties, dwindling health funding, poor perceived oral needs, competing demand, misconceptions about oral health, inadequate facilities, and shortage of dental workforce [11-13].

Dental service utilization is driven by a complex interaction of individual, social and contextual factors which influence access to dental care. In many Sub Saharan African countries, the availability and accessibility of oral health services is seriously constrained and the provision of essential oral care is limited [12, 14, 15].

In previous studies conducted in some parts of Nigeria, the utilization of dental services was reported low and varied between 15.5% and 56.5% [16]. In East Africa, Oral Health services are offered by the public and private sectors, which comprise of hospitals, health centres, dispensaries, nursing and maternity homes, and health clinics [4]. In Kenya, over the years, the demand for oral health has outstripped the financial provision from the exchequer. The ratio of dentists to the population is approximately 1:60,000 when both the public and private sector are combined [17].

In Uganda, the government has had to deal with several pressing health issues, most recently, COVID-19 pandemic. This has led to giving limited priority to seemingly less life-threatening conditions such as oral health [18]. For instance, less than 0.1% of the Gross Domestic Product is allocated for the direct oral health care and the dentist to population ratio is 1:158,000 people which are way higher than the ratio recommended by WHO [18]. With this insufficiency, resources are primarily allocated to emergency oral care and pain relief. Subsequently, majority (90%) of the dental caries remain untreated in low income countries [19, 20].

There is insufficient data on the oral health situation in Uganda as well as the utilization of oral health services [18]. However, the available data shows that there has been low utilization of oral health services over the years [14]. In the western region, there is paucity literature about the utilization of dental services and associated factors that policy makers can rely on to formulate policies about oral and dental service provision. It is on that background that this study is set to determine the utilization of oral health services a sub urban population in western Uganda.

MATERIALS AND METHODS

This study was a community-based cross-sectional study. Data collection for this study took place between July and November 2021 after the approval was granted from the Ethics and Research Committee of the Faculty of Clinical Medicine and Dentistry, Kampala International University Western Campus, Ishaka in a protocol number KIU/ERC/A/VOL.II/1254. Also, permission was sought from the Town Clerk of Ishaka Municipality. A total of 384 randomly selected adults were recruited to participate in the study.

The three divisions in Ishaka Municipality, Bushenyi District constituted the sample frame. The names of these divisions were written on pieces of paper, folded, put in a container and closed. The contents of the container were shaken several times to ensure a good mix or randomization of the pieces of paper. The divisions were selected making sure that half of the available wards were sampled. Households were mapped and numbered according to the mapping strategy. Systematic sampling technique was used where a house was selected (from a random start) and the rest of houses were selected at the sampling interval. Systemic sampling technique was used to ensure that each house had equal probability of being selected with 4 houses interval in each direction. Purposive sampling techniques were adopted in selecting eligible respondents; this was on the premise of having an adult who was willing to participate. For each of the households approached, it was first determined which household members were eligible for participation. If only one person met the eligibility criteria, that individual was asked to participate in the study. If more than one person from the household met the eligibility criteria, then one of them was randomly selected and asked to participate in the study.

The researchers used questionnaires as the main data collection tool. The questionnaires (Appendix II) were administered in participant's preferred language (Lunyankole or English) after formalities were carried out and informed consent obtained. Special arrangement was made for those who were not able to read and write. Such participants had the information given to them orally in their preferred language of communication and assisted in filling the questionnaire.

A self-administered structured close-ended questionnaire constructed in line with the objectives of the study was used in this study. The questionnaire was divided into 3 sections as follows: Section A, which addressed individual characteristics; Section B: utilization of oral health services; and Section C, probable factors affecting utilization of oral health services (exposure variables).

Calibration of researchers, assistants as well as instruments for data collection was done prior to the study. Field testing of the data collection tools was done as part of the overall process of preparation for data collection in one of the villages. The principal researcher was assisted by group members in providing guidance for the data collectors. There were four teams of data collectors and in each team there was a team leader who assisted the principal researcher monitoring and supervising ongoing data collection. Also, all completed forms from the field were reviewed daily and on-the-spot feedback was provided with follow-up/callback undertaken, where needed.

In this study, the questionnaire was pre-tested for its content and validity among 30 respondents in Sheema Municipality. The responses from the pilot study were used to improve the clarity, reliability and relevance of the questionnaire.

Content Validity Index was calculated basing on judgment by at least two knowledgeable people (Judges). A score of 0.78 was gotten and the instrument was deemed valid for use. Data obtained from a pre-determined questionnaire was used to determine the Cronbach's coefficient alpha. An index of 0.89 was gotten which indicated that the items of the questionnaire were reproducible and consistent.

Collected data was verified to ensure completeness, coded, entered in an Excel (Microsoft Corporation) spread sheet, cleaned and edited for inconsistence before they were exported into STATA software for analysis. The outcome variable was "Utilized" or "Not Utilized" for oral health services and was assigned one (1) when a respondent reported to have ever used oral health services and zero (0) when otherwise. The individual characteristic was calculated in frequencies and percentage and the information was summarized in the form of graphs, pie charts, narrations and tables to give descriptive statistics. Frequencies, percentages of the respondent's characteristics were produced. At a descriptive level, these variables were compared between the entire study samples. This was done using Pearson's chi-square statistic. Statistical significance was considered to be p-value < 0.05.

The factors associated with the utilization of oral health services were assessed using logistic regression. Both bivariate and multivariate Poisson regression analysis was carried out. The variables which were found to be having P value less than 0.02 at bivariate Poisson regression were entered into a multivariate model. The final multivariate model was significant when

$p < 0.05$. The measure of association was reported as Prevalence ratios (PRs) with corresponding 95% CI and p-value. All statistical analyses were carried out in STATA version.

RESULTS

Table 1: Frequency table for socio-demographic characteristics of Study Participants. .

Variable	Frequency (n)	Percentage (%)
Marital Status		
Not Married	58	15.10
Married	258	67.19
Cohabiting	22	05.73
Divorced	46	11.98
Family Headed by Single Parent		
Yes	108	28.13
No	276	71 .88
Head of family Headed by Single parent		
Man	70	64.81
Woman	38	35.19
Education Level		
None	118	30.73
Primary	49	12.76
Secondary	91	23.70
Tertiary	126	32.81
Employment Status		
Employed	175	45.57
Unemployed	82	21.35
Business	53	13.80
Student	74	19.27
Average Monthly Income (UGX)		
<501,000	207	53.91
501,000-1,000,000	73	19.01
>1,000,0000	104	27.08
Has Health Insurance		
Yes	130	33.85
No	254	66.15
Willingness to seek dental health services if health insurance is available		
Yes	154	60.63
No	71	27.95
Maybe	29	11.42
Limited Time to seek dental services		
Yes	176	45.83
No	208	54.17
Transport Problems		
Yes	167	43.49
No	217	56.51
Taboos which prohibit seeking oral health services		
Yes	40	10.42
No	151	39.32
Don't Know	193	50.26
Religion		
Catholic	167	43.49
Anglican	119	30.99
Muslim	67	17.45
SDA	18	04.69
Others	13	03.39

The majority of participants (67.19%) were married, had varying levels of formal education (69.3%) and employed (45.57%) receiving an average monthly income of less than 501,000 Ugandan shillings. Also, most of the study participants (66.15%) did not have health insurance but were willing to seek dental health services if they did.

Additionally, most respondents did not have any cultural taboos militating against seeking dental treatment.

Table 2; Frequency table for Individual Characteristics of Study Participants.

Variable	Frequency (n)	Percentage (%)
Age in years		
18 – 30	267	69.53
31 – 40	82	21.35
41 – 50	12	03.13
51 – 60	09	02.34
≥ 61	14	03.65
Tribe of Study Participants		
Munyankole	243	63.28
Munyaruguru	32	08.33
Mukonjo	38	09.90
Baganda	40	10.42
Others	31	08.07
Gender		
Male	147	38.28
Female	237	61.72
Pregnancy status of females		
Pregnant	60	26.20
Not Pregnant	169	73.80
In charge of making decisions to seek health services		
Yes	213	55.47
No	171	44.53
Dental Visits are important		
Yes	286	74.48
No	98	25.52
Anxiety from thought of dental visit		
Yes	195	50.78
No	189	49.22
Phobia for dental procedures		
Yes	127	33.07
No	257	66.93
Fear of infection from dental procedures		
Yes	188	48.96
No	196	51.04
Has a chronic systemic disease		
Yes	74	19.27
No	310	80.73

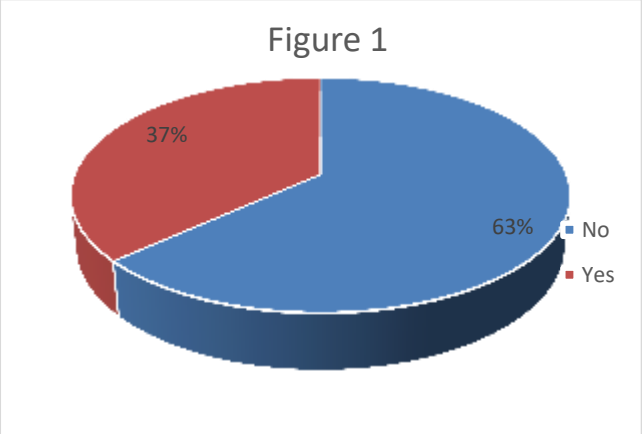
Majority of the study participants (69.53%) were aged 18–30 years and were female (61.72%). Most respondents (74.48%) acknowledged that dental visits are important and about half of them (50.73%) had anxiety regarding visits to a dental health practitioner and fears of contracting some form of infection following a dental appointment (51.04%).

Table 3 Frequency Table for Health Services Related Characteristics

Variable	Frequency (n)	Percentage (%)
Oral health Services are expensive		
Yes	147	38.28
No	237	61.72
Previous experience of poor oral service		
Yes	125	32.55
No	259	67.45
The Procedure was done from a dental clinic		
Yes	97	67.83
No	46	32.17
Availability of a dentist nearby		
Yes	257	66.93
No	127	33.07
Would seek dental treatment if dental clinic was close in the area		
Yes	77	50.66
No	53	34.87
Maybe	22	14.47
Oral health services offered in government facilities		
Yes	271	70.57
No	113	29.43
Perception of health worker's attitude		
Negative	106	27.60
Positive	213	55.47
Don't Know	65	16.93
Received instruction on care of the teeth		
Yes	166	43.23
No	218	56.77
Long Waiting time		
Yes	165	42.97
No	219	57.03

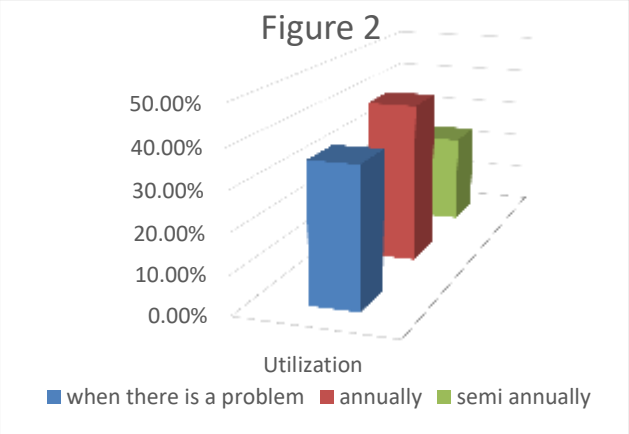
It was observed that the majority of study participants(61.72%) felt that oral health services are expensive while about a third of the study participants reported a previous bad oral care treatment experience or know someone whose dental condition was managed poorly by the DHCP. Furthermore, 55.47% of respondents indicated that health workers have positive attitude towards clients with 56.77% of the study participants recieving instructions on oral hygiene and care.

Figure 1: Pie Chart Showing Overall level of Utilization of Oral Health Services



The overall level of utilization of oral services among adult population in Ishaka – Western Uganda is shown in Figure 1. It was observed that results of the study revealed that 37% of participants studied utilized oral health services within the last 5 years.

Figure 2: Bar graph showing frequency of Utilization of Oral Health



The frequency of utilization of oral health services among the study participants are shown in Figure 2. The majority of the study participants 41.13% utilized oral health services on a yearly basis, while 35.46% utilized oral health services whenever they had problems.

Table 4: Socio-Demographic Factors Associated With Utilization of Oral Health Services

Variables	Utilization No Count, (%)	Count, (%)	cPR (95% CI)	P Value
Marital Status				
Single	35 (60.34)	23 (39.66)	1.00	
Married	159 (61.63)	99 (38.37)	0.97 (0.68-1.38)	0.855
Cohabiting	16 (72.73)	06 (27.27)	0.69 (0.32-1.46)	0.330
Divorced	33 (71.74)	13 (28.26)	0.71 (0.41-1.25)	0.236
Family Headed by Single Parent				
Yes	76 (70.37)	32 (29.63)	1.00	
No	167 (60.51)	109 (39.49)	1.15 (0.74-1.81)	0.531
Head of family Headed by Single parent				
Man	46 (65.71)	24 (34.29)	1.00	
Woman	30 (78.95)	08 (21.05)	0.89 (0.55-1.44)	0.638
Education Level				
None	88 (74.58)	30 (25.42)	1.00	
Primary	33 (67.35)	16 (32.65)	1.28 (0.77-2.13)	0.334
Secondary	69 (75.82)	22 (24.18)	0.95 (0.59-1.53)	0.837
Tertiary	53 (42.06)	73 (57.94)	2.28 (1.62-3.21)	**<0.001**
Employment Status				
Employed	111 (63.43)	64 (36.57)	1.00	
Unemployed	51 (62.20)	31 (37.80)	1.03 (0.74-1.45)	0.848
Business	32 (60.38)	21 (39.62)	1.08 (0.74-1.59)	0.684
Student	49 (66.22)	25 (33.78)	0.92 (0.64-1.34)	0.678
Average Monthly Income				
<501,000	153 (73.91)	54 (26.09)	1.00	
501,000-1,000,000	45 (61.64)	28 (38.36)	1.47 (1.01-2.13)	**0.042**
>1,000,0000	45 (43.27)	59 (56.73)	2.17 (1.64-2.89)	**<0.001**
Has Health Insurance				
Yes	90 (69.23)	40 (30.77)	1.00	
No	153 (60.24)	101 (39.76)	1.29 (0.96-1.74)	0.093
Willingness to seek dental health services if health insurance is available				
Yes	89 (57.79)	65 (42.21)	1.00	
No	47 (66.20)	24 (33.80)	0.80 (0.55-1.17)	0.246
Maybe	17 (58.62)	12 (41.38)	0.98 (0.61-1.57)	0.934
Limited Time to seek dental services				
Yes	110 (62.50)	66 (37.50)	1.00	
No	133 (63.94)	75 (36.06)	0.96 (0.74-1.25)	0.770
Transport Problems				
Yes	107 (64.07)	60 (35.93)	1.00	
No	136 (62.67)	81 (37.33)	1.04 (0.80-1.36)	0.779
Taboos which prohibit seeking oral health services				
Yes	20 (50.00)	20 (50.00)	1.00	
No	95 (62.91)	56 (37.09)	0.74 (0.51-1.08)	0.117
Don't Know	128 (66.32)	65 (33.68)	0.67 (0.47-0.97)	0.035
Religion				
Catholic	91 (63.64)	52 (36.36)	1.00	
Anglican	88 (61.54)	55 (38.46)	1.06 (0.78-1.43)	0.714
Muslim	46 (68.66)	21 (31.34)	0.86 (0.57-1.31)	0.484
SDA	08 (44.44)	10 (55.56)	1.53 (0.96-2.44)	0.075
Others	10 (76.92)	03 (23.08)	0.63 (0.23-1.75)	0.381

CI = Confidence Interval, cPR = Crude Prevalence Ratio, P Value is Significant at 0.05 level

Results of the analysis showed that Education level and monthly income were the socio-demographic factors significantly associated with utilization of oral health services. Participants who had attained tertiary level of education were more likely to utilize oral health services than their counterparts who had no education (P<0.001). Study participants who had an average monthly income of 501,000-1,000,000 Shillings and above were also more likely to utilize oral health services than study participants who had an average monthly income of less than 501,000 Shillings(P=0.042)

Table 5: Individual Factors Associated With Utilization of Oral Health Services

Variables	Utilization		cPR (95% CI)	P Value
	No	Yes		
	Count (%)	Count (%)		
Age in years				
18 – 30	167 (62.55)	100 (37.45)	1.00	
31 – 40	51 (62.20)	31 (37.80)	1.01 (0.73-1.39)	0.954
41 – 50	10 (83.33)	02 (16.67)	0.45 (0.12-1.59)	0.214
51 – 60	04 (44.44)	05 (55.56)	1.48 (0.81-2.72)	0.202
≥ 61	11 (78.57)	03 (21.43)	0.57 (0.21-1.58)	0.282
Tribe of Study Participants				
Munyankole	150 (61.73)	93 (38.27)	1.00	
Munyaruguru	20 (62.50)	12 (37.50)	0.98 (0.61-1.58)	0.933
Mukonjo	26 (68.42)	12 (31.58)	0.83 (0.50-1.35)	0.477
Baganda	28 (70.00)	12 (30.00)	0.78 (0.48-1.29)	0.340
Others	19 (61.29)	12 (38.71)	1.01 (0.63-1.62)	0.962
Gender				
Male	88 (59.86)	59 (40.14)	1.00	
Female	155 (65.40)	82 (34.60)	0.86 (0.66-1.12)	0.271
Pregnancy status of females				
Pregnant	42 (70.00)	18 (30.00)	1.00	
Not Pregnant	107 (63.31)	62 (36.69)	1.22 (0.79-1.89)	0.365
In charge of making decisions to seek health services				
Yes	136 (63.85)	77 (36.15)	1.00	
No	107 (62.57)	64 (37.43)	1.04 (0.80-1.35)	0.797
Dental Visits are important				
Yes	171 (59.79)	115 (40.21)	1.00	
No	72 (73.47)	26 (26.53)	0.66 (0.46-0.94)	**0.023**
Anxiety from thought of dental visit				
Yes	128 (65.64)	67 (34.36)	1.00	
No	115 (60.85)	74 (39.15)	1.14 (0.88-1.48)	0.331
Phobia for dental procedures				
Yes	90 (70.87)	37 (29.13)	1.00	
No	153 (59.53)	104 (40.47)	1.39 (1.02-1.89)	**0.037**
Fear of infection from dental procedures				
Yes	125 (66.49)	63 (33.51)	1.00	
No	118 (60.20)	78 (39.80)	1.19 (0.91-1.55)	0.204
Has a chronic systemic disease				
Yes	50 (67.57)	24 (32.43)	1.00	
No	193 (62.26)	117 (37.74)	1.16 (0.81-1.67)	0.408

CI = Confidence Interval, cPR = Crude Prevalence Ratio, P Value is Significant at 0.05 level

Fear of pain from dental procedures and perception that dental visits are important were the only variables found to be significantly associated with utilization of oral health services. Study participants who had no fear of pain from dental procedures were more likely to utilize oral health services than those who feared pain from dental procedures. Study participants who perceived that oral health visits are important were 66% more likely to utilize oral health services compared to their counterparts who perceived that oral health visits were not important (Table 5).

Table 6: Health Services Related Factors Associated With Utilization of Oral Health Services

Variables	Utilization		cPR (95% CI)	P Value
	No	Yes		
	Count (%)	Count (%)		
Oral health Services are expensive				
Yes	98 (66.67)	49 (33.33)	1.00	
No	145 (61.18)	92 (38.82)	1.16 (0.88-1.54)	0.285
Previous experience of poor oral health service				
Yes	80 (64.00)	45 (36.00)	1.00	
No	163 (62.93)	96 (37.07)	1.03 (0.78-1.37)	0.840
Previous experience of poor oral health service was from a dental clinic				
Yes	164 (70.69)	68 (29.31)	1.00	
No	79 (51.97)	73 (48.03)	0.77 (0.48-1.24)	0.287
Availability of a dentist nearby				
Yes	163 (63.42)	94 (36.58)	1.00	
No	80 (62.99)	47 (37.01)	1.01 (0.77-1.34)	0.934
Would seek dental treatment if dental clinic was close in the area				
Yes	34 (44.16)	43 (55.84)	1.00	
No	30 (56.60)	23 (43.40)	0.77 (0.54-1.12)	0.178
Maybe	15 (68.18)	07 (31.82)	0.57 (0.30-1.09)	0.088
Oral health services offered in government facilities				
No	180 (66.42)	91 (33.58)	1.00	
Yes	63 (55.75)	50 (44.25)	1.32 (1.01-1.72)	**0.043**
Perception of health worker's attitude				
Negative	78 (73.58)	28 (26.42)	1.00	
Positive	119 (55.87)	94 (44.13)	1.67 (1.17-2.38)	**0.004**
Don't Know	46 (70.77)	19 (29.23)	1.11 (0.67-1.81)	0.688
Received instruction on care of the teeth				
Yes	108 (65.06)	58 (34.94)	1.00	
No	135 (61.93)	83 (38.07)	1.09 (0.83-1.43)	0.530
Long Waiting time				
Yes	103 (62.42)	62 (37.58)	1.00	
No	140 (63.93)	79 (36.07)	0.96 (0.74-1.25)	0.762

CI = Confidence Interval, cPR = Crude Prevalence Ratio, P Value is Significant at 0.05 level

Regarding Dental/Oral Health related factors, availability of oral health services in government health facilities and health workers attitude were found to be significantly statistically associated with utilization of oral health services (P=0.043). Also participants who said that health workers had positive attitude towards clients were also more likely to utilize these services (P=0.004).

Table 7: Multivariate Analysis to Show Factors Independently Associated With Utilization of Oral Health Services

Variables	Utilization		aPR (95% CI)	P Value
	No			
	Count, (%)	Count, (%)		
Religion				
Catholic	91 (63.64)	52 (36.36)	1.00	
Anglican	88 (61.54)	55 (38.46)	1.04 (0.79-1.38)	0.770
Muslim	46 (68.66)	21 (31.34)	0.92 (0.63-1.33)	0.649
SDA	08 (44.44)	10 (55.56)	1.50 (0.93-2.41)	0.096
Others	10 (76.92)	03 (23.08)	0.73 (0.33-1.62)	0.434
Marital Status				
Not Married	35 (60.34)	23 (39.66)	1.00	
Married	159 (61.63)	99 (38.37)	0.97 (0.68-1.38)	0.855
Cohabiting	16 (72.73)	06 (27.27)	0.69 (0.32-1.46)	0.330
Divorced	33 (71.74)	13 (28.26)	0.71 (0.41-1.25)	0.236
Education Level				
None	88 (74.58)	30 (25.42)	1.00	
Primary	33 (67.35)	16 (32.65)	1.15 (0.70-1.89)	0.575
Secondary	69 (75.82)	22 (24.18)	0.89 (0.56-1.42)	0.628
Tertiary	53 (42.06)	73 (57.94)	2.03 (1.45-2.82)	**<0.001**
Average Monthly Income				
<501,000	153 (73.91)	54 (26.09)	1.00	
501,000-1,000,000	45 (61.64)	28 (38.36)	1.26 (0.88-1.81)	0.198
>1,000,0000	45 (43.27)	59 (56.73)	1.94 (1.48-2.56)	**<0.001**
Fear of pain from dental procedures				
Yes	90 (70.87)	37 (29.13)	1.00	
No	153 (59.53)	104 (40.47)	1.36 (1.02-1.82)	**0.035**
Oral health Visits are important				
Yes	171 (59.79)	115 (40.21)	1.00	
No	72 (73.47)	26 (26.53)	0.68 (0.50-0.93)	**0.017**
Oral health services offered in government facilities				
No	180 (66.42)	91 (33.58)	1.00	
Yes	63 (55.75)	50 (44.25)	1.18 (0.91-1.54)	0.220
Perception of health worker's attitude				
Negative	78 (73.58)	28 (26.42)	1.00	
Positive	119 (55.87)	94 (44.13)	1.46 (1.04-2.05)	**0.028**
Don't Know	46 (70.77)	19 (29.23)	1.02 (0.64-1.61)	0.942
Long Distance to Health Facility				
Yes	137 (64.32)	76 (35.68)	1.00	
No	106 (61.99)	65 (38.01)	1.22 (0.95-1.56)	0.113

CI = Confidence Interval, aPR = Adjusted Prevalence Ratio, P Value is Significant at 0.05 level

Education level, Average monthly income, fear of pain from dental procedures, perception that oral health visits are important and health worker's attitude remained independently associated with utilization of oral health services among study participants (Table 7).

DISCUSSION

This study showed poor utilization oral health services amongst the studied population. This finding is in keeping with the results of a previous study done in Nellore District of India which showed that only 36% of patients had visited the dentist in the last 12 months [21]. This finding also concurs with the findings of Varenne et al [6] who suggested that service utilization for preventive and promotive care is generally poor in developing countries [6]. This is however in contrast with those of studies done in Germany which revealed the utilization of any dental service was 73% [22] and the United States of America where 70% of all adults reported having one or more dentist visits in the past year [23]. The disparities in the study findings could have arisen due to the fact that the previous studies were conducted in developed countries unlike the present study which was conducted in suburban setting in a developing county.

With regards to socio demographic factors and their relationship to the level of utilization of oral health services, some factors showed a statistically significant relationship with utilization of oral health services and thus include level of education and average monthly income.

The level of education and oral/dental health utilization is in agreement with the results of a Turkish study which showed that individuals with higher levels of education use dental services more than others [24]. Similarly, Motlagh et al. [2] found that higher education level of the head of the household had positive relationships with the increased utilization of dental services. This is probably because being educated makes an individual more likely enlightened about oral health conditions and hence the need to pay attention to oral health.

This finding implies that the higher the level of education, the higher the probability of utilizing oral healthcare facilities for a dental visit. Education can lead people to be more health-conscious, and helps them make better and healthier lifestyle choices. Conversely, lower knowledge of oral health can be associated with unhealthy behaviors and less interest in preventive treatment. In a study done in Shimla, India, for example, the group with higher education showed higher dental visits than the group with lower education indicating that education may be correlated with high health consciousness, which in turn stimulates preventive behavior such as regular visits for a check-up [25].

Also, it was observed that an average monthly income of more than one million Ugandan shillings (about $300) was associated with increased likelihood of utilizing oral health services. The expensive nature of dental treatment has consistently remained a barrier for utilization of oral health services and statistics throughout the world. It has been suggested in previous studies that people's ability to access regular dental care is directly related to their annual income [6, 26]. Other socio-demographic factors showed no significant statistical association with the utilization of oral health care services in this study. However, this does not rule out the possible impact of these factors.

Furthermore, in this study, the level of dental anxiety relating to expected pain from dental procedures and perception of the importance of oral health visits showed a strong statistical relationship with utilization of Dental health care services. It was observed that the absence of phobia associated with dental treatment had a positive correlation with utilization of oral health services. This finding is similar to that of a previous Nigerian study where dental anxiety and fear, whether derived from prevailing community beliefs or personal negative dental experiences, greatly influenced attitudes regarding accessing oral health services. This was despite advances in dental equipment, procedures and preventive measures [26]. Different studies have reported fear as the main barrier to oral health services utilization. Studies done in India [25, 27] found that fear of dental procedures was one of the factors for not visiting dentists.

This study also found out that participants who perceived that oral health visits are important were more likely to utilize oral health services. The most commonly reported reason for not seeking dental care is the widely held perception that one needs to visit dentist only when there are symptoms such as pain and other emergencies. Many studies show that one key reason for this is the belief that oral diseases are not serious or life threatening]. Fotedar et al [25] and Aikins & Braimoh [12] reported in studies in India that 62.5% and 70% of the respondents respectively believed that there is no need to visit a dentist unless there is pain.

Failing to perceive oral health visits as an important activity makes individuals to seek oral health interventions when their conditions have worsened. This is supported by the results of a study done by Christensen & Helderman [28] in Tanzania where 91% of subject visited dental clinic only when experienced pain mainly from toothache. There is also evidence from other studies by Ajayi et al, [26] and Kakatkar et al [27] who reported reasons for visiting Dentists in the past were related to having oral symptoms or pain.

Meanwhile, other individual factors did not show a strong relationship with utilization of oral health care services in this study but previous studies showed some correlation of age, pregnancy in women and effect chronic disease on the utilization of oral health care services. A study done by Sun et al. [29] among pregnant women in Eastern China which showed that only 16.70% of the participants reported routine utilization of dental care during pregnancy. Furthermore, a study conducted by Gao et al.[30] among preschool children revealed that utilization prevalence during the prior 12 months was 9.5% among 3-year-old children and 12.1% among 4-year-old children. These variations maybe due to the peculiarities of the different study populations. Whereas the present study was conducted in the general adult population, Sun et al. [29] limited his study to pregnant women meanwhile Gao et al. [30] sampled children.

The attitude of health workers towards patients showed a significant statistical relationship with utilization of oral health services among Dental/ oral health related factors. Similar to findings of this study, Kronfol [31] reported that health system barriers to utilization can be due to poor attitudes of service providers. Effectiveness of health systems depends on how the nation uses its resources like personnel, facilities, equipment and materials to produce outcome. Availability of human resource is important for decision making and organizing how other resources can be utilized to cater for the needs of their clients.

The result of this study is also in agreement with the results of a study done in Kenya which revealed that high client satisfaction was associated with friendly and understanding service providers, and that a service delivery point's good reputation often encourages users to return, which promotes access, utilization and service continuity [32]. Effective interpersonal communication between health care provider and client is one of the most important elements for improving utilization of oral health services, client satisfaction, compliance and health outcomes [33].

Availability of Oral health services in government health facilities also presented a direct proportion with the level of utilization of oral health services. This could be due to the subsidized or free services offered in Government Health facilities. The expensive nature of dental treatment has

consistently remained a barrier for utilization of oral health services and statistics throughout the world show that people's ability to access regular dental care is directly related to their annual income [6, 26].

Other dental/ oral health related factors did not show a strong statistical correlation with level of utilization of oral health services. This could be attributed to by the variation in the geographical settings where the studies were conducted as well as the variation in sampling techniques used to recruit the study participants.

CONCLUSION

This study has shown that the level of utilization of oral health services in the suburban adult population in Ishaka is poor. There is also a clear need for oral health promotion strategies to improve knowledge and attitudes amongst the population and similar populations.

It was also determined that tertiary level of education, an average monthly income of >1,000,0000 Shillings (about $300), not being afraid pain from dental procedures, a perception that oral health visits are important and positive attitude of health workers were the factors statistically significant associated with utilization of oral health services in the studied population.

Recommendations

- This study recommends improved oral health promotion especially in underserved communities. Emphasis should be placed on the preventive aspect of dentistry as a reason for dental visits and to reduce financial burden associated with late presentation.
- Improving access to oral health facilities as a deliberate government public health policy.
- Improved attitudes by oral healthcare workers with regular clinical audits to improve service delivery and patient satisfaction.

Limitations and Strengths of the Study

Results of this study should be interpreted in light of certain limitations. To begin with, the study was conducted in a small geographical area (Ishaka Municipality). However, the results of the study can be interpreted with confidence because the sample size was large, scientific sampling techniques were used to recruit the study participants as well as scientific methods were used to analyze the collected data controlling for confounding factors by running a multivariable analysis.

Conflicts of Interest: None declared

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