

**DENTAL SERVICE UTILIZATION BY SEROPOSITIVE ADULTS AT COMMUNITY
HEALTH AIDS INITIATIVE CLINIC IN KAMPALA INTERNATIONAL
UNIVERSITY-TEACHING HOSPITAL, BUSHENYI DISTRICT**

BY

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**A RESEARCH REPORT SUBMITTED TO FACULTY OF CLINICAL MEDICINE AND
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DECLARATION

I Fred Nyagado Okach, declare that this research report is the result of my own effort, my original work and has never been submitted for any academic award in any University or institution of higher learning. However, where the text used or quoted have fully been acknowledged by all means in accordance to the text.

Signed

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APPROVAL

This research report title “**Dental Service Utilization Among Young Sero-positive Patients at Community Health AIDS Initiative Clinic in Kampala International University-Teaching Hospital, Bushenyi**” has been composed under my supervision and approve it for submission to the Faculty of Clinical Medicine and Dentistry of Kampala International University and other concerned organization’s Institution Review Board/Research and Ethics Committee.

Signature**Date**

Professor Danilo Milanés

SUPERVISOR

DEDICATION

This work is dedicated fondly to God, my amazing parents, siblings, Robert, Bill, Sharon, Ryan, Carol, Dorcas and Julie. Thank you for making things happen

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I am grateful to my supervisor Prof Danilo Milanes whose guidance, dental knowledge and expertise enabled me to undertake and finish this study. I am also grateful to Dr Hunter, Sharon Secor, Dr Ryan, late Dr Robert Johnston and The Presbyterian Church for their for their unwavering priceless, support and inspiration. Am also indebted to Dr Ekuru, Dr Baker, Dr Milton, Dr Olal and Dr Simiyu for the dental knowledge and skills. Gratitude to Joe, Winnie, Anet, Tom, Brian, Fred, Pat, Julie, Esther, Bridget, Raymond, Carol, Kulthum, Rahiru and Happy Alex for the love and prayers. My appreciation as well goes to Kampala International University staff and students for being extremely supportive in numerous ways. Above all credit goes to God having used you all as part of the jigsaw of success.

God bless you all.

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CHAI	Community Health AIDS Initiative
HIV	Human Immunodeficiency Virus
KIU	Kampala International University
KIU TH	Kampala International University Teaching Hospital
MoH	Ministry of Health
NRC& IOM	National Research Council) and Institute of Medicine ()
PLWHA	People living with HIV/AIDS
WHO	World Health Organization
YALWH	Young Adults Living with HIV

DEFINITION OF TERMS

- Coronal and root surface caries** Dental caries on crowns and root surfaces of teeth (MDO, 2012).
- Dental caries** A destructive process causing decalcification of the tooth enamel and leading to continued destruction of enamel and dentin, and cavitation of the tooth (MDO, 2012).
- Edentulism** The condition of being without any natural teeth. Medical Dictionary Online (MDO, 2012)
- Gingivitis** Inflammation of the gums, characterized by redness and swelling (MDO, 2012).
- Healthcare Barriers** Refers to obstacles within the healthcare system that prevent vulnerable patient populations from getting the care they need.
- Periodontal disease** Periodontal diseases are a group of diseases that affect the tissues that support and anchor the teeth. Left untreated, periodontal disease results in the destruction of the gums, alveolar bone (the part of the jaws where the teeth arise), and the outer layer of the tooth root (MDO, 2012).
- Xerostomia** Dryness of the mouth resulting from diminished or arrested salivary secretion (MDO, 2012).

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ABSTRACT

This research report presents findings of a hospital based exploratory and cross sectional study on dental service utilization among 131 seropositive adults in Community Health AIDS Initiative Clinic at Kampala International University Teaching Hospital, Bushenyi District. The central problem of the study were issues associated with the utilization of dental services by seropositive patients, who suffer a preponderance of oral manifestations, and whose need for oral healthcare may be greater than the general population. The study was concerned that, despite the problem of seropositive patients having more unmet oral needs they continue to face limited access to oral healthcare.

The general objective of the study was to find out utilization of dental services by enrolled seropositive adult patients at KIU-TH. Specifically, the study sought to determine the influence of caregivers' oral health perceptions and cultural beliefs, the impact of socioeconomic factors, and the significance of structural factors in the utilization of oral healthcare; to determine barriers to dental service utilization among this cohort. The study was guided by the health services utilization model.

The findings of the study indicate that, seropositive patients have prevailing perceptions and cultural beliefs about oral health which are holistic and woven into the social and cultural fabric of their daily lives and influence the utilization of oral healthcare. Two, the socio-economic circumstances of the seropositive patients such as low income levels and lack of social health insurance have a compounding effect on the low utilization of oral healthcare. Finally, structural factors and characteristics of the healthcare system are significant in selecting an oral health provider.

It can, therefore, be concluded that a patient's decision to utilize oral healthcare is a composite of perceptions and cultural beliefs on oral health and dental illnesses, effect of contextual societal factors, and innate characteristics of the healthcare system. Additionally, the patients perceive the cost of services and access to oral healthcare to be prohibitive and this, coupled with low enrollment with social health insurance, constitutes major barriers to the timely utilization of oral healthcare by adult seropositive patients.

The study, therefore, recommends that, one, the government considers greater subsidy on social health insurance for low-income earners and pro-poor payments, to enable those in the informal sector with irregular incomes benefit from public health insurance. Two, the government establishes satellite dental health facilities closer to the people to reduce the distances of travel to regulated oral healthcare providers. Three, oral health policy should be revised and

implemented to fast track the integration of preventive dental care into the primary health programme, and improve awareness while emphasizing the need for preventive dentistry.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter describes the background of the study, problem statement, aim and objectives of the study, research questions and justification of the study on utilization of dental services by PLWH.

1.1 Background of the study

Sound oral health is defined as a state of being free from mouth and facial pain, oral infection and oral sores, periodontal disease, tooth decay, tooth loss, and other diseases that limit an individual's capacity in biting, chewing, smiling, speaking and psychosocial well-being (WHO, 2012). Oral health has frequently been identified as an unmet need for people living with HIV/AIDS (PLWHA), and the unmet need for oral health care may be more prevalent than unmet medical needs (Jeanty et al., 2012). It has been identified as a health disparity for PLWHA. Identifying and addressing barriers to oral healthcare utilization is important for the long-term improvement of overall health outcomes for PLWH.

During adolescence and young adulthood noteworthy physical, emotional, and psychological changes take place. It is an invaluable time that offers youth opportunities to establish patterns of health behaviors, which can affect health outcomes in their adult years. Events and influences of adolescence and young adulthood can affect the course of future health outcomes (Mulye et al., 2009).

Young adults often make health choices with limited abstract reasoning skills, a sense of invulnerability, and strong peer influence susceptibility (Rao et al., 2007). The strengthening of primary care services such as the coordination of interdisciplinary services could influence young people to make sound health choices. These changes would also lead to improved healthcare for those with chronic illnesses such as Human Immunodeficiency Virus (HIV) (NRC & IOM, 2009).

HIV infection causes qualitative and quantitative depletion of CD4 lymphocyte count which increases the risk of opportunistic infections. Factors that predispose to HIV-related oral conditions include CD4+ cell count of <200/uL (Bodhade et al., 2011). With the advent of highly active antiretroviral therapy (HAART), people are living longer and suffering fewer opportunistic infections. Systemic diseases and the adverse effects of accompanying medications can lead to an increased risk of oral conditions such as reduced salivary flow, altered senses of taste, smell, oro-facial pain, gingival overgrowth, alveolar bone resorption

and tooth mobility (WHO, 2010). However, oral lesions remain prevalent in patients who do not adhere to medication regimes as well as those who are undiagnosed.

For persons living with HIV disease not yet on HAART therapy, the presence of certain oral manifestations may signal progression of HIV disease (Patil et al., 2015). Oro-pharyngeal candidiasis remains the most common infection seen in People Living with HIV/AIDS (Patton et al., 2013).

Factors predictive of receiving oral care include one's level of education. Those that may impede access to oral health care include presence of disability or chronic illness, lack of dental insurance, inability to pay for care, and lack of transportation. PLWHA also experience the barrier of discrimination by dentists as well as other types of providers (Sears et al., 2011). Many of these factors are common in communities with the highest reported cases of HIV.

Many perinatally infected children now transitioning to young adulthood are facing the social stigma associated with HIV for the first time in their lives (Halkitis & Figueroa, 2013). Prejudices and social discrimination are some of the leading causes for certain groups of Uganda's population, such as sex workers and men who have sex with men, to avoid seeking health care. However, even PLWHA are subjected to excessive amounts of negative judgment. A 2015 survey conducted by HIV support organizations, in partnership with the National Forum of People Living with HIV/Aids (NAFOPHANU), of people living with and affected by HIV in central and south-western Uganda found stigma, both internal and external, to be high. When the study began, more than half (54%) reported experiencing some form of discrimination or prejudice as a result of having HIV (Allafrica.com, 2016). In addition to the many physical challenges associated with HIV, young adults living with HIV (YALWH) are also far more susceptible to the effects of the stigma associated with this disease than their adult counterparts (Hatzenbuehler, 2011). Research has demonstrated that individuals living with and experiencing HIV-related stigma are five times more likely to report poor access to medical care (Smit et al., 2012).

In addition to providing comprehensive oral care, oral health providers are well positioned to identify symptoms of HIV that often appear first in the mouth. Indeed, Singer and colleagues reported that oral health professionals were more successful than medical examiners in identifying oral lesions associated with HIV/AIDS (Singer et al., 2012). Determining the extent of oral health utilization, needs and barriers experienced by PLWHA will enable measures to be put in place to address oral health care delivery and thus contribute to enhancing their quality of life.

1.2 Problem Statement

While good oral health is important for everybody, it is especially critical for PLWHA. Inadequate oral health care can undermine HIV treatment and diminish quality of life, yet many individuals living with HIV are not receiving the necessary oral health care that would optimize their treatment. Due to the already compromised immune systems of PLWH, lack of access to oral health care may affect the systemic health of these individuals.

AIDS epidemic is on the rise all over the world without any definite treatment. Antiretroviral medications only control the progression rate of disease. Oral manifestations of HIV infection are important in the AIDS epidemic and some of them could be used to assess the status of immune-suppression and determine the prognosis of the disease. Some oral lesions may even affect patient's quality of life. Early diagnosis and appropriate treatment of oral lesions have great influence on patients' general health and can reduce the mortality rate of the disease

Several studies have shown that oral manifestations of HIV/AIDS occur in as many as 70-90% of all HIV/AIDS cases in both children and adults and these conditions may be prevented or treated with regular dental care (Seacat et al., 2009). If they are left untreated, they may cause discomfort, dysfunction, and impact negatively on the oral health quality of life of an individual (Yengopal and Naidoo, 2008). Treatment adherence has been found to be a serious problem specifically for YALWH, underscoring the need for routine oral health care provision for adolescents and young adults living with HIV (Murphy et al., 2001).

Identifying and ultimately addressing underutilization to oral health care services is very important if the overall quality of health outcomes for PLWH is to be improved and maintained in the long term. The importance of examining the needs of young adult populations in particular is stressed by several factors, including their susceptibility to stigma, their increased likelihood of low adherence to medication regimes and HIV testing, and evidence suggesting that perceived social support results in improved health outcomes for this age group (Rao et al, 2007). The present literature reveals few empirical studies that focus on oral healthcare among PLWH. In addition, there is little work focusing on the social structures, personal resources, and personal health beliefs that shape access and utilization of oral healthcare services among this population

1.3 Study objectives

1.3.1 Broad objective

To determine utilization of oral health services among seropositive adults.

1.3.2 Specific objectives

- i. To establish the prevalence of utilization of dental services by seropositive adult patients.
- ii. To determine barriers to dental service utilization among adults living with HIV at CHAI Clinic.
- iii. To find out the determinants of the utilization of dental services among seropositive adult patients.

1.4 Research questions

- i. What's the prevalence of dental services utilization by seropositive adults?
- ii. What are the determinants of oral health utilization among PLWH?
- iii. What are barriers to utilization of dental services among adults living with HIV?

1.5 Justification of the study

In Uganda, there is paucity of literature on utilization of dental services by PLWH. Most published work on underutilization of oral healthcare services among adults living with HIV/AIDS is from the developed world with very little information from Africa where about 70% of HIV-infected persons reside. Treatment adherence has been found to be a serious problem specifically for YALWH, underscoring the need for routine oral health care provision for adolescents and young adults living with HIV (Murphy et al., 2001). Therefore this study aims at determining percentage of adult population with HIV/AIDS patients enrolled at CHAI Clinic in KIU Teaching Hospital, Bushenyi with particular focus on exploring their utilization of oral health care services.

This survey is timely in adding insights into existing literature and addressing the knowledge gaps on oral health care access barriers. Creation of this knowledge involves a social science discipline working together with the medical profession and yet, this important area of social sciences in oral health care has not been adequately developed. So far, there are huge gaps in such kind of information in resource-constrained economies like Uganda, and the study, therefore, firstly addresses these gaps.

Healthcare-seeking behavior has emerged as a tool for assessing perceived ill-health through the remedial measures taken to utilize health care.

Lastly from a public health perspective, information garnered from this research may be utilized in designing interventional programmes that have positive impact in increasing the utilization of preventive oral health services for PLWH in Bushenyi.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter is divided into two parts, namely, literature review and theoretical framework. The literature reviews key concepts relevant to the research problem under the following sub-headings: Utilization of dental services by adult seropositive patients; determinants of the utilization of healthcare; barriers to utilization of dental services; and Overview of the current structure of oral health services in Uganda. The second part is a discussion of the theory that guided the study, and the relevance of the health services utilization model to the study.

2.1 Prevalence of utilization of dental services by adult seropositive patients

Access to and utilization of dental care is important to HIV-positive persons because, according to some estimates, over 90% of HIV-positive persons will have at least one oral manifestation of HIV disease during the course of their infection (McCarthy, 1992). The pattern of dental service utilization is a worldwide public health challenge that has been found to be a key predictor of oral health outcomes. While oral health care is crucial to quality of life and may impact systemic health (Vernon et al., 2011), previous studies have reported that the rate of unmet dental needs is approximately twice that of unmet medical needs in HIV-infected adults (Heslin et al., 2001). The HIV Cost and Services Utilization Study [HCSUS] investigators found 19% of HIV-infected individuals in medical care had a perceived unmet need for dental care in the preceding 6 months and unmet dental care needs were more than twice as prevalent as unmet medical care needs (Andersen RM, 1995). In a large multisite national study of HIV-infected adults who were accessing oral health care after not receiving any nonemergency services in the prior 12 months, investigators found that 48% reported an unmet oral health care need, and more than half (52%) had not seen a dentist in the past 2 years (Fox et al., 2012). Given that the incidence and severity of dental disease in HIV-positive individuals is greater than in the general population, available and accessible oral health care is especially critical for this population (Heslin et al., 2001). Indeed, by some estimates, over 90% of HIV-infected individuals will have at least one oral manifestation attributed to HIV infection during the course of their disease (Reznik, 2005). Poor oral health can compromise these individuals' overall well-being in a variety of direct and indirect ways, such as contributing to opportunistic infections, preventing proper swallowing of prescribed antiretroviral medications, and impairing the ability to speak clearly (Bachman et al., 2012; Del Rio 2012).

Despite the potential for serious complications or opportunistic infections, the majority of oral health problems experienced by HIV-positive individuals can be prevented by regular prophylactic care and require only routine treatment (Morhart et al., 2000).

HAART has dramatically improved the average life expectancy for persons living with HIV (Antiretroviral Therapy Cohort Collaboration, 2008) and has also reduced some of the oral manifestations of HIV infection such as oral thrush (Ferreira et al., 2007). At the same time, however, other conditions such as oral warts and HIV-associated salivary gland disease are increasing in prevalence with HAART (Ferreira et al., 2007). HAART has also likely changed the implications of HIV infection for oral health such as oral health related quality of life and the need for and utilization of dental services. Despite the importance of oral health for HIV-infected individuals, many experience an unmet need for dental care, defined as either the presence of untreated dental problems or failure to obtain regular prophylactic care (Dobalian et al., 2003). Previously reported levels of dental service use in HIV-infected populations have varied from 7% to 75% (Adedigba et al., 2016; Coulter et al., 2000; Pereyra et al., 2011; Danae Joy, 2012). In a study carried out in USA with a sample size of 2864 respondents (Coulter et al., 2000), part of the HIV Cost and Services Utilization Study (HCSUS), created a representative national probability sample, the first of its kind, of HIV-infected adults in medical care. Both bivariate and logistic regressions were conducted, with use of dental care in the preceding 6 months as the dependent variable and demographic, social, behavioral, and disease characteristics as independent variables. The results showed that 42% of those who had a medical visit reported that they had used dental care in the preceding 6 months. Fifty-eight percent (58%) had a usual source of dental care. Of this group, 65% used care in the preceding 6 months compared with 12% of those without a usual source of care ($p < 0.0001$). The source of the care was found to be significantly correlated with utilization. Those whose source of care is an AIDS clinic were significantly more likely to use dental care (73.9%) than those in a dental office (64.5%). Women were less likely to have used care in the preceding 6 months than were men (35% vs. 44%, $p < 0.004$). With respect to ethnicity, all groups had more than 42% using, with the exception of African-Americans, whose use was 33.2%. This was the only group significantly different from whites ($p < 0.0001$). Education is also significantly correlated, and use was nearly twice as great among those with a college degree as among those who did not graduate from high school. All education groups had significantly less use compared with college graduates ($p < 0.0001$). Use was greater in the West than in any other region. Having medical and dental insurance correlated with use of dental care. Highest use was among those with private dental insurance (53% in the preceding 6 months), and lowest

was among those without dental insurance who were not enrolled in the Medicaid program. There was a substantial difference in the use of dental care by HIV exposure group. Use was highest among men having sex with men (48%) and dropped to 42% among IDVs, 35% among those who were heterosexually active, and 25% whose exposure was through other means such as blood transfusions. Even though the risk of oral health complications increases as CD4 count falls, there was no evidence of increasing use of dental care. In a research study (Pereyra et al., 2011), five hundred and ninety-three participants were recruited from five HIV primary care clinics in two South Florida counties and interviewed regarding past utilization of dental care services, HIV primary care service utilization, and barriers to care. Multivariate logistic regression analysis was used to determine correlates of oral care utilization within the preceding two years. The sample (n=593) was approximately two-thirds male, 57% non-Hispanic Black, and 28.7% Hispanic. The mean age was 43.8 years (median 45 years). One-third of respondents did not complete high school or a general educational development (GED) program, half of the respondents had an annual income of less than \$5,000, and only 23.1% were currently employed. The vast majority of respondents had a high dental self-efficacy score and agreed that oral health is important, oral health problems can cause other health problems for HIV patients, people with HIV are more likely to have oral health problems, and reported they were about as well or better informed about HIV and oral health than other HIV-positive persons. Only about one-third of respondents reported having a usual source of dental care at the time of their HIV diagnosis and half reported having received help getting dental care from anyone since their diagnosis. Less than one-third of respondents had received a referral to a dentist in the preceding 12 months from any health care provider. In terms of oral health symptoms or problems, 64.4% of respondents reported at least one dental health impact in the preceding four weeks at the “fairly” or “very often” threshold on the OHIP-49 (43% reported at least one impact at the “very often” threshold). Overall, self-reported general health status was good while self-reported oral health status was slightly lower; 83.1% reported being in current need of dental care. Three-quarters of respondents had lost permanent teeth and 22.1% wore full or partial dentures. Overall, 34.4% of respondents reported seeing a dentist less than two years before the interview. After controlling for age, sex, education, and study recruitment site, two enabling characteristics were associated with utilization of dental care. The odds of having seen a dentist in the preceding two years were 1.7 times greater for respondents with stable housing than for those living in temporary situations or institutions. The odds of having seen a dentist in the preceding two years were 1.8 times greater for respondents who reported having received help in getting dental care since their HIV diagnosis than for those who did

not report receiving help. In addition, the odds of Blacks reporting utilization of dental services were about two-thirds that for Hispanics and non-Hispanics Whites; there was no significant difference between the latter two groups in reported utilization. Respondents with more than a high school education were also more likely to report utilization of dental services. In a research conducted in Cleveland, USA (Danae Joy, 2012), a sample size of 66 respondents reported over three-quarters of the study population had a dental visit in the year prior to survey administration, which is higher than previously reported levels. While a dental visit in the previous year was the primary outcome, types of services received before and after diagnosis were also measured. In the study, there was a significant increase in the reporting of periodontal treatments after HIV seroconversion. However, these results may have been confounded by subjects' participation in previous periodontal research, since 59.4% of subjects who reported receiving periodontal therapy after HIV seroconversion had previously participated in a study advocating for patients to obtain treatment for periodontal disease (Vernon et al., 2009). Regardless of confounders, it has been established that periodontal disease is prevalent in high levels among HIV-infected populations (Robinson et al., 2008), especially in predominately non-white cohorts and is thus encouraging to see an increase in periodontal treatment in this limited cohort. There was a statistically significant decrease in restorations after HIV seroconversion. This finding may be a reflection of insurance coverage: although all subjects reported having some type of dental insurance coverage (including Ryan White assistance), most public-assistance programs do not cover extensive restorative procedures or adjunct therapies necessary to retain a diseased tooth and thus the patient is left with no choice other than extraction. Alternatively, a decrease in restorations may be a reflection of dental service non-use; teeth may have been neglected to the point that the only viable option left is extraction. It is important to note, however, that all treatment types were based on subjects' recall of past dental visits and therefore these data may have been affected by recall bias.

In a study carried out in Nigeria (Adedigba et al., 2016) a cross-sectional questionnaire survey of 239 PLWH patients was done with majority of subjects being younger than 50 years. About 93% had not seen a dentist before being diagnosed HIV positive and 92% reported no dental visit after contracting HIV. Among nonusers of dental care, 14.3% reported that they wanted care but were afraid to seek it. Other reasons include poor awareness, lack of money and stigmatization.

In HIV-infected cohorts, predisposing factors have been found to correlate with non-use of dental services and include female gender (Coulter et al., 2000), non-white race (Patton et al., 2007; Pereyra et al., 2011) and low education level (Dobalian et al., 2007; Pereyra et al., 2011).

Enabling factors have also been found to be significant predictors of dental service use and include employment (Pereyra et al., 2011), income level (Pereyra et al., 2011) and usual source of care (Pereyra et al., 2011). Finally, oral health-related quality of life (QOL) has been reported as a need-related predictor of dental service use (Dobalian et al., 2007). In regards to types of dental services that are utilized by HIV-infected patients, it has been reported that dental cleanings and fillings are the most common types of dental treatment received (Mascarenhas et al., 2000), while periodontal and endodontic procedures were the least common treatments (Mascarenhas et al., 2000). Recently, a high level of need for periodontal treatment was reported (Vernon et al., 2009). To date, few if any reports have examined whether HIV-infected adults change their dentist and/or types of dental services received after HIV seroconversion.

2.2 Determinants of the utilization of healthcare

2.2.1 Familial culture and health beliefs

Culture is often defined as coherent, shared patterns of actions or beliefs specific to named groups of people. It provides basic roadmaps or social contexts that define behavioral norms and interpersonal relationships as well as unwritten rules for proper living. In health, culture organizes the group's norms of family life, including their recognition of illness and care-seeking practices around health or medical conditions. A low demand for healthcare and modern health interventions often derives from deep-rooted attitudes that reflect culture and social norms (Aday and Anderson, 1974). According to literature, culture is reflected in religion and religious practices, social norms, language, diet, family structure, health beliefs, preventive approaches and service utilization (Adair et al., 2004).

For example, in oral healthcare, it is suggested that satisfaction with care and trust in the dental system by parents reinforces the value of oral health, whereas other factors such as perceived high costs of care (Kim and Telleen, 2004), fear of pain or general dental anxiety have negative influence on oral health care. Specifically, culture has been reported to affect tooth-brushing habits and methods, diet, perceived seriousness of tooth decay, and individual control over tooth decay among caregivers in both the United Kingdom and the United States of America, respectively (Adair et al., 2004).

In healthcare utilization, cultural practices and health beliefs were also found to affect awareness and recognition of severity of illness and acceptability of service (Geissler et al., 2000:). The continued preferences for traditional over modern therapies often leads to self-care, use of home remedies and consultation with traditional healers in rural communities in Southern Mali (Ellis et al., 2007). Unfortunately, in some African countries, health-seeking

cultural practices commonly result in delay in treatment-seeking for formal healthcare among women not only for their own health, but especially for their children's illnesses, such as reported in Kenya and Malawi (Chibwana et al., 2009; Abubakar et al., 2013). In some cultural instances such as rural Guatemala, the advice of the older women in the house on matters of health is very instrumental and cannot be ignored (Delgado et al., 1994).

According to different cultural contexts, the norms of decision-making have a significant influence on the mothers' ability to seek treatment. For example, studies carried out in Nigeria and Kenya reported that decision-making is often the prerogative of males and senior household members, especially in making a decision about the seriousness of the illness, or the point at which to seek assistance beyond the home (Olubuloye et al., 1991). Similarly, in Pakistan, men being the decision-makers and in control of all resources, decide when and where women and children should access care (Rani and Bonu, 2003). It is, however, reported that adherence to cultural norms in health care-seeking may become influenced by the socioeconomic environment. Nxumalo et al. (2011) for instance, reported the fact that use of traditional therapies in South Africa declines with rise in income and education, suggesting that social norms are not inviolable, and the social is not completely divorced from the economic. According to Kiyak (1993), various aspects of cultural ideas and practices may act as deterrents to optimal health outcomes. Uba (1992), on the other hand, reports that framing the patient's illness in terms that are culturally understandable may make Western healthcare more acceptable.

2.2.2 Family socioeconomic status

A strong positive relationship exists between living standards and utilization of healthcare. There is evidence that the poor often benefit less from public spending on health (Mackinen et al., 2000), *albeit* they tend to be least healthy and most probably have the most to benefit from healthcare. In particular, the association of low socioeconomic status of the family and poor oral health in children is well reported in well-developed countries in Europe (Petersen, 2005). Conversely, a higher socioeconomic status in the family promotes improved living conditions such as safe housing and ability to afford sufficient healthy foods.

According to Sundby and Petersen (2003), woeful living conditions and irregular oral health practices contribute to differences in the prevalence of dental caries among the poor in the Municipality of Copenhagen, Denmark. One indirect facet of the effect of socioeconomic status is its influence on health literacy. The recognition of illness and knowledge of the potential benefits of treatment are prerequisites for healthcare demand (O'Donnell, 2007). Where a large

proportion of the population is in poor health this becomes the norm and illness may not be easily recognized. Equally, if treatment coverage is low there is less opportunity to learn of its benefit, the unfortunate outcome being continued toleration of illness and disease (O'Donnell, 2007).

There is substantial evidence from developing countries such as Bangladesh to support symptom recognition linked to lack of awareness and ignorance as a barrier to utilizing health care (Rashid et al., 2001). It is also stated that the socioeconomic environment can influence concepts of illness. Castro-Leal et al. (2000) postulated that reported illness is often higher among the better-offs than the poor. Additionally, Shellenberg et al. (2003) found that in Tanzania, differences in health knowledge reflected disparities in utilization where the better-offs were more likely than the poor to recognize signs of illness in a child who was less than five years and to seek care for a child when sick. In the United Kingdom, low socioeconomic status was associated with poor oral health knowledge and attitude of parents, which in turn, negatively affected their oral health practices and utilization of care (Williams et al., 2002). However, while lack of knowledge and health illiteracy can result in people not seeking care when they need it despite the absence of other barriers, it can also result in people seeking or receiving inappropriate care and paying for it.

2.2.3 Family household income

The monetary costs of healthcare indicate that income is an important determinant of healthcare utilization and its dispersion. With out-of-pocket financing and limited access to credit being the norm in many poor countries, current household income is one of the binding constraints on the utilization of healthcare. In a market setting, a positive impact of income on consumption is expected where those with greater purchasing power may find that prices are less of a barrier to the utilization of healthcare. A low-income individual with competing interests, on the other hand, will choose to have additional consumption (of other goods) than additional healthcare (Ginson-Bautista, 1994). It is the nature of financing in the developing world with heavy reliance on out-of-pocket payments that further strengthens the relationship between healthcare utilization and household income. O'Donnell (2007) posits that risk-pooling and cross subsidization, possible with pre-payment systems, may break the dependency of healthcare utilization on current income.

However, while considering demand factors that are amenable to policy intervention, it should be appreciated that household incomes may be amenable to control but they are assumed to be mainly affected by wider economic policies outside the specific control of the health sector.

2.2.4 Education and information

Education as a determinant of healthcare utilization is a complex variable. To some extent, education can improve the ability of individuals to produce health themselves through better lifestyles rather than relying on health services (Enscore and Cooper, 2004). In addition, better basic education can, through general improvements in literacy, influence the desire and actual use of health services. At the very least, education provides the consumer with the basis for evaluating whether they or a dependent requires treatment. Information on the best places to seek care is additionally required. Ahmed et al. (2005) report that this is one of the most significant determinants that predict the odds of an individual using self-care treatment from a drug store or treatment from a qualified allopathic practitioner.

For instance, while it is well recognized that oral health education and preventive measures help to reduce the need for tooth extraction, parents must be able to assimilate this information, understand the instructions provided and implement them as part of the child's daily oral health routine.

The fact that mothers of children in ethnic minority groups often receive only a few years of education results in poor communication skills and, consequently, poor dental health and service utilization (Sundby and Petersen, 2003).

This argument is supported by Kelly et al. (2005) who hypothesize that the strongest demographic factor associated with utilization of oral healthcare is education. In their study, they found that approximately three quarters of caregivers with non-utilization of dental care in the United States reported no more than a high school education, and more than half of utilizing caregivers reported at least some college education. They posit that better oral health beliefs and norms of caregiver responsibility for professional preventive care may explain the effects of higher parental educational attainment on service utilization.

2.3 Barriers to utilisation of dental services

Chronic underfunding, political instability, high disease burden, inadequate human resources and inefficient allocation continuously challenge health systems in low-income countries. The Government of Uganda has allocated less than 10% of its budget which is less than the 15% agreed in The Abuja Declaration. The current funding of US \$27 per capita per annum expenditure on health care is far below the US\$44 per ca pita recommended (WHO 2017).

This suggests that the public health system does not meet the demand for health care that often results in long waiting queues at public health sector facilities or inadequate delivery of essential services like dental care.

According to the Uganda National Household Survey 2012/2013, the majority of those who sought health care first visited a private hospital or clinic (37 percent) or a government health centre (35 percent). Twenty-two percent of the urban population used government health centers, while that proportion rose to 39 percent in the rural areas. Thirty-five percent of government health centers visited by persons who fell sick were within a radius of 5 kilometers from the population (Uganda National Household Survey 2012/2013)

The availability and accessibility of oral health services are seriously constrained and the provision of essential oral care is limited in sub-Saharan Africa (Manski et al., 2002). A number of factors affect the quality of services in Uganda, including the shortage of healthcare workers and lack of trust in them, a lack of needed treatments, high costs, and long distances to facilities (Kiguli et al., 2009). There have been reports of an increased prevalence of oral diseases in Uganda from 50-80% (Rwenyonyi et al., 2011)

Studies have shown that people living with HIV/AIDS do not receive adequate oral care treatment. Some of the identified barriers to care include financial problems, lack of confidentiality, socio-psychological factors such as prejudice and discrimination among dental health workers (Seacat et al., 2009). The health care utilization of a population is dependent on their health seeking behavior which may be determined by physical, political, socio economic and socio cultural factors.

People living in rural areas have been found to have more unmet dental needs and lower dental service utilization rates than those in urban sites (Kiyak, 2005). Lack of utilization of dental services among the young have been attributed to age, gender, socioeconomic position, ethnic background, (Ola et al., 2013) oral health related behavior, smoking habits and poor perceived oral health status. Fear of dentist and dental injection, cost of treatment, fear of contracting infection, no access to dentists, dissatisfaction with previous dental treatment and transportation problems have also been reported in Nigeria (Ajayi et al., 2012).

Health insurance and family income have been reported to be the most consistently related socio demographic factor related to adolescents' use of preventive medical and dental care. It has also been observed that reasonable fees for dental services, the quality of dental care and close location of dental clinics to students' homes were encouraging factors for utilization of dental services. Eliminating financial barriers to accessing health care amongst low socio-economic and less educated groups may have a positive effect on oral health care utilization.

A study by Lopez and Baelum (Attwood et al., 1993) associated socioeconomic and behavioral factors as independently associated with the frequency of utilization of dental services. They also noted that the reasons for dental visits among the adolescent population were strongly associated with self-perceived poor oral health status and infrequent dental visits and symptoms.

It has been reported that the reason for utilization of oral health services is often related to the presence of symptoms (Ajayi MD et al., 2012) with the utilization of curative and/or rehabilitative services during adolescence often driven by the presence of pain. Females were more likely to visit the dentist frequently than males because of symptoms in Chile (McBroome et al., 2005).

PLWH live with a potential sequella of associated illnesses such as dyslipidemia, growth failure, respiratory illnesses, and increased risk of cardiovascular disease, and oral health diseases, frequently with a backdrop of depression, marginalization, and stigmatization (Gardner et al., 2011). Stigmatization from peers, family members, and friends as well as healthcare providers have social and health implications, such as isolation and low medication adherence (Dowshen et al., 2009). Social disadvantages caused by HIV stigma can result in increased stress for infected young adults and can impact health outcomes as do other social determinants such as socioeconomic status (SES) or racial discrimination (Hatzenbuehler et al., 2013). Adolescents and young adults have reported skipping medication doses due to fear that friends or family will discover their status or discriminate against them (Rao et al., 2007).

2.4 Overview of the current structure of oral health services in Uganda:

Uganda has no comprehensive national oral health care policy (Dr Mboli, 2003). The existing oral health care system has no clearly defined goals, and has a largely therapeutic and technological bias. A primary health care approach that adds a community-based dimension to health care provision has not been adapted by this sector of the Uganda Health System. In 1994, the WHO Regional Committee for Africa recommended the formulation of comprehensive National Oral Health policies by African countries based on Primary Health Care. At the time of independence in 1962, Uganda had a total of ten oral health workers all of whom were dental surgeons serving seven and a half million people (Report of the National Oral Health Plan Committee; Ministry of Health, Uganda 1989). The vast majority of people particularly those in rural areas derived their oral health services from traditional healers. The practices of traditional “dentists” over the years have not been well documented but their utilization by the population is believed to be significant. Uganda is one of the few countries in Sub Saharan

Africa where oral health services are part of the services offered by government. Uganda initially elected to train a cadre of auxiliaries to provide the bulk of oral health services: In 1975, the first 14 Public Health Dental Assistants (now called Public Health Dental Officers/PDHOs) graduated from The Mulago Paramedical School. It was perceived that the oral health needs of the population as well as the resources at hand demanded for a health worker who could provide basic curative services and was relatively cheaper to train. Although their title suggested a community-based orientation, a survey done in 1989 (Report of the National Oral Health Plan Committee; Ministry of Health, Uganda 1989) revealed that none of the PDHOs offered services anywhere outside their clinics. In other words their services were strictly hospital-based in keeping with the health service provision in Uganda at that time.

This Training: Dental surgeons train for five years (about 9803 actual contact hours) with a mandatory 1- year of internship training in addition to this. Public Health Dental Officers train for three years (about 1548 actual contact hours). The Public Health Dental Officers' school receives funding from DANIDA. Government of Uganda funds the training of most of the dental surgeons.

Specialist services: The greatest need for specialist oral health services in Uganda is oral and maxillofacial surgery. This is expected to be provided by the dental surgeons stationed in district and regional hospitals for example the management of fractures and dislocations, abscesses, simple cysts, suturing of lacerations and other basic oral surgery. Complicated cases can only be handled at the Oral Surgery department in the National referral hospital in Kampala.

2.5.1 Theoretical framework

This study was guided by the classic model of health services utilization (Andersen and Newman, 1973) discussed below, the goal being, to develop an explanatory model of the determinants of oral healthcare services utilization for children with HIV/AIDS by their female caregivers.

2.5.2 The health service utilization model

This health services utilization model is a socio-behavioral model developed by Andersen and Newman (1973:112). The purpose of this framework is to discover conditions that either facilitate or impede health services utilization in a given population. The model originally focused on the family as the unit of analysis because the medical care an individual receives was considered most certainly as a function of the demographic social and economic characteristics of the family as a unit. Subsequently, there was a shift to the individual as the

unit of analysis because of the difficulty of developing measures at the family level that take into account the potential heterogeneity of family members, for example, a summary measure of “family health status.” It was deemed more efficient to attach important family characteristics to the individual as the unit of analysis.

According to this model, an individual’s access to and use of health services is considered to be a function of three characteristics; the first one is based on the individual’s inclination to use available health services (predisposing), the second is related to their ability to access services (enabling), and the third is based on their illness level, as shown in Figure 2.1 below.

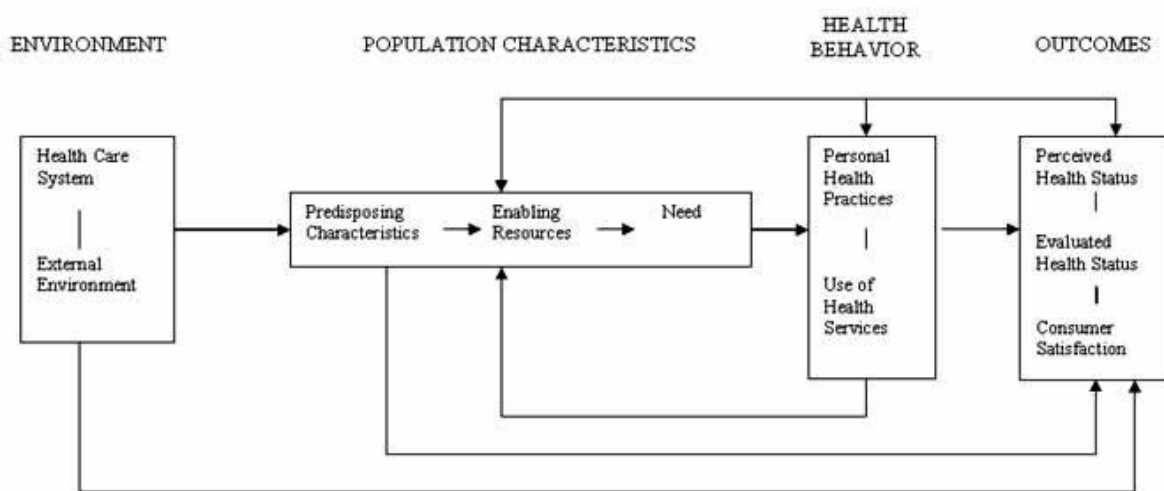


Figure 2.1: Conceptual Model (Source: Adapted from Andersen, 1995:8)

1) Predisposing factors: These are the socio-cultural characteristics of the individuals that exist prior to their illness, such as:

Social structure: Education, occupation, ethnicity, culture, social networks and interactions.

Health beliefs: Attitudes, values, and knowledge people have concerning healthcare and the healthcare system.

Demographic: Age and gender.

Possible additions: Genetic factors and psychological characteristics.

Predisposing factors are likely to influence an individual’s health-seeking behaviour (Andersen and Newman, 1973, cited in Hausmann-Muela et al., 2003).

2) Enabling factors: These are the logistic aspects of obtaining care, the means and know-how to access health services, for example:

Personal/Family: Income, health insurance, travel, extent and quality of social relationships.

Community: Available health personnel, available facilities and waiting time.

Enabling factors alone or in combination can determine utilization of available health services (Andersen and Newman, 1973, cited in Hausmann-Muela et al., 2003).

3) Need factors: These are the most immediate cause of health service use, from functional and health problems that generate the need for healthcare services.

Perceived needs: This is how people view their own general health and functional state, as well as how they experience symptoms of illness, pain, worries about their health and whether or not they judge their problems to be of sufficient importance and magnitude to seek professional help.

Evaluated needs: Represents professional judgment about people's health status and their need for medical care. Need is anchored in perceptions of severity, total number of sick days for a reported illness, total number of days in bed, days missed from work or school, or help from outside (Hausmann-Muela et al., 2003).

Each component of the model is conceived of as making an independent contribution to predicting, or explaining the use of health services. The model suggests a causal ordering where the predisposing factors might be exogenous (especially the demographic and social structure), some enabling resources are necessary but not sufficient conditions for use, therefore, some need must be defined for use to actually take place (Andersen, 1968). It is further hypothesized that the predisposing, enabling and need factors have differential abilities to explain use, depending on what type of service was examined. Hospital services received in response to more serious problems and conditions would be primarily explained by need and demographic characteristics, while other services, like dental services considered as more discretionary would more likely be explained by social structure, beliefs and enabling factors (Andersen, 1995:4).

2.5.3 Relevance of the model to the study

The most recent description of the health services utilization model emphasizes the dynamic and recursive nature of health services use, while including the health status outcomes. It is postulated that, an individual will likely utilize oral health services if they believe that the treatment they received was useful to them. For this study, the health services utilization model is relevant in portraying the dynamic interplay of multiple contextual factors among the female

caregivers, with input from the external environment and the healthcare system itself, which stimulates the intention to utilize formal oral health services for children with HIV/AIDS. The model includes feedback loops showing that outcomes derived from the use of health services can, in turn, affect subsequent predisposing factors and perceived needs for services as well as health behaviour in seeking oral healthcare. The model provides the conceptual framework for this research (Figure 2.1).

2.5.4 The study variables

The **independent variables** that will operationalize the study will be broadly categorized into the four sub-groups which constitute components of the health services utilization model. They will be defined in the following manner:

Predisposing factors are those that render oral health services favorable, inclined and susceptible. Variables that fall under this group were adult's age and sex, education level, occupation, oral health culture, attitudes and practices.

Enabling factors denote variables that engender the use of oral health services by the patient. These include patient's household income, proximity of oral healthcare facility, user-cost for oral healthcare services including opportunity costs, health insurance status, and third party influences such as social networks and religious influence.

Healthcare systems factors are variables that have to do with consumer satisfaction, and how patients perceived the non-medical qualities of care at the oral health facilities. The variables considered are type of oral healthcare facility visited (private or public), cleanliness and maintenance of the facility, availability of drugs, waiting time and attitude of health workers at the facility.

Need factors are those that are imperative and require action to be taken. The variables in the group includes patient's knowledge of oral disease, patient's perception of oral health status, symptoms of pain and impact on patient's oral health quality of life.

The **dependent variable** which is the utilization of oral healthcare was measured by the proportionate utilization of oral healthcare by patients with HIV/AIDS, timeliness in utilizing needed oral healthcare and the factors that constrains the utilization of needed oral healthcare by patients.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter describes the methodology that was used in the study. It starts by giving a description of the research area followed by information on the field site where data collection was carried out. It goes on to describe the study design, study population and unit of analysis, sample size and sampling procedure, data collection methods, and data processing and analysis. Finally, it discusses the ethical issues that were taken into consideration and measures put in place to fulfill the ethical requirements of the study.

3.1 Research area

3.1.1 Location and population

The study was carried out in Ishaka Town which is located in Igara County, in Bushenyi District. Together with the neighboring town of Bushenyi, it forms the Bushenyi-Ishaka Metropolitan area. It is the largest metropolis in the district. In 2014, the national population census put the population of Bushenyi, including Ishaka, at 41,063 (UBOS, 2014). Figure presents a map showing the location of Ishaka.

3.2 Research sites

The study was carried out at CHAI Clinic Kampala International University Teaching Hospital Ishaka in Bushenyi District. CHAI Clinic is a comprehensive health clinic for PLWH that serving 800 patients every month.

3.3 Research design

This was a cross-sectional and descriptive hospital-based survey in which both quantitative and qualitative methods of data collection was employed. The use of mixed methods was adopted to improve exploration of the phenomenon under study from different perspectives to facilitate validation of data through cross-verification. In order to address the study objectives expansively and ensure systematic collection of data the field work was structured into two phases, the first of which consisted of a trial run aimed at pre-testing the survey questionnaire to refine it and ensure that the interviews at the time of the survey were carried out with ease and responses from the respondents were maximized. The pre-testing of the survey instrument was carried out among PLWH attending CHAI Clinic at KIU-TH.

This phase also formed the preparatory stage for the fieldwork in which several meetings were held with relevant clinic selected authorities, so as to sensitize them and seek permission to carry out the study. The process accorded the researcher an opportunity to cultivate the necessary rapport to facilitate the operations of the study.

In the second phase, a quantitative survey was conducted among patients attending the HIV-care clinics, using the pre-tested survey instrument. This was out in face-to-face interviews with the patient, the purpose of which was to collect socio-demographic data and other quantitative data relevant to the research objectives, such as the patients' individual health beliefs, attitudes and cultural practices in oral health, and their experiences in the utilization of oral healthcare. In the third and final phase, qualitative data was collected, specifically through focus group discussions (FGDs) with the patients, as well as key informant interviews (KIIs) with selected healthcare providers at the HIV-care facility, comprising of doctors, clinical officers, nurses, psychologists and social workers. These were selected for their professional expertise and perceived likelihood to provide insights relevant to the study objectives. These informants are deemed to have useful insights related to the study objectives through their personal interactions with the patients. Additionally, case narratives were conducted among patients closely identified with the phenomenon under study.

Secondary data collection and direct observation of hospital activity was on-going throughout the period of study as supplementary methods of data collection.

3.4 Study population and unit of analysis

The study population comprised of seropositive patients attending CHAI Clinic. The unit of analysis was the individual patient.

3.4.1 Inclusion criteria

The inclusion criteria was (i) adults, 18-65 years of age (ii) All those patients who consented voluntarily to participate in the study.

3.4.2 Exclusion Criteria

- (i) PLWH who did not consent to participate in the study
- (ii) Children aged below 18 years of age
- (iii) Adults aged above 65 years of age

3.5 Sample size determination

My sample size of the study respondents was determined using Kish and Leslie's formula of 1965 which state that; $n = \left(\frac{Z^2 p q}{d^2} \right)$

Where; n=Desired sample size,

Z = Standard deviation at desired degree of accuracy which is 95%, the standard deviation is 1.96.

p = Proportion of adult aged 18 to 65 years old actively enrolled at CHAI Clinic Kampala International University-Teaching Hospital, Bushenyi District. Since no survey yet done to establish oral health access barriers for YALWH in CHAI Clinic at Kampala International University-Teaching Hospital, Bushenyi District .p will be estimated at 50% = 0.5 thus, p =0.5

q= 1-p, (1-0.5) = 0.5

d = the marginal error to be allowed at 5%, d = 0.05

$$n = \left(\frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} \right)$$

$$n = 384$$

In this case, the sample size for the adults aged 18 to 65 years old actively enrolled in CHAI Clinic at Kampala International University-Teaching Hospital, Bushenyi District will be 384. But this was too big for my study population since they are less than (<) 10, 000

The sample size estimation of the study population less than 10,000 was calculated using the formula:

$$nf = \left(\frac{n}{1 + \frac{n}{N}} \right)$$

N= Population size of adults aged 18 to 65 years old actively enrolled in CHAI clinic at Kampala International University-Teaching Hospital in the February 2018 (CHAI register, 2017)= 200

n = calculated sample size above = 384

nf = target population < 10,000 adults aged 18 to 65 years old actively enrolled in CHAI clinic at Kampala International University-Teaching Hospital).

$$nf = \left(\frac{384}{1 + \frac{384}{200}} \right)$$

$$nf = 131 \text{ respondents}$$

Basing on the calculations above, the study used sample size of 131 respondents.

3.6 Data collection methods

3.6.1 Secondary sources

Secondary sources were used to get basic information on the research problem. These included published and unpublished articles and reports, journals, essays, theses and dissertations, and electronic and print media sources, including the internet. The information formed the basis for literature review and identification of the gaps in knowledge, formulation of the research questions and objectives as well as the theory that was used to guide the study. Collection of this kind of data was a continuous exercise throughout the study.

3.6.2 The survey method

A standardized questionnaire consisting of open-ended and closed-ended questions was used to collect data on oral health perceptions, beliefs, and cultural practices among the respondents, as well as their experiences in the utilization of oral healthcare (Appendix 2). To get individual respondents for the survey, purposive sampling was carried out of patients attending CHAI Clinic using the inclusion criteria. The patients who were accessible and met the inclusion criteria were recruited conveniently on a daily basis until the required sample size at each hospital was attained. The survey was conducted by the researcher in face-to-face interviews with the selected patients.

3.6.3 Direct observation

Direct observation was applied throughout the fieldwork to complement the other qualitative data collection methods. It has unique advantages in that it allows the researcher to gain general insights, including the range of activities taking place in the field sites without the study subjects knowing that they were being studied, thus capturing the natural environment at the HIV-care facilities. In the process of direct observation, the researcher was able to confirm and corroborate information obtained from the other methods of data collection. Direct observation was guided by use of an observations checklist (Appendix III).

3.7 Data processing and analysis

Quantitative data from the survey was coded and entered into a micro-computer using MS Excel, and analyzed using the Statistical Package for the Social Sciences (SPSS) programme Version 19.0. Where it was deemed necessary, cross-tabulation of variables was undertaken and tests of significance presented. Qualitative data was labeled and keyed-in using codes assigned to open-ended questions. The data was entered into a computer using ATLAS *ti* 8 for Windows computer software, to assist in the categorization and matching process, content analysis and annotation of the important features and findings of study. The researcher was responsible for organizing the findings into common concepts and themes according to the study objectives and responses that were obtained from the study participants in order to obtain replicable and valid inferences on the patients' utilization of oral healthcare.

3.8 Minimization of Errors and Biases

The administration of questionnaires and oral examination was performed by one individual to ensure conformity and consistency in diagnosis. Random sampling was applied to ensure equal chances for participation by all registered clients. Use of structured questionnaire was used to reduce margin error in the responses by ensuring that responses fall within known categories, indeed while enquiring about oral service utilization, the participant were to answer simply yes or no.

3.9 Ethical Considerations

1. Only those subjects who consent were recruited into the study
2. All information was treated with confidentiality and actual names of the clients were not written on the forms
3. All those participants who were found suffering from acute conditions requiring treatment were referred appropriately to the nearest health facility for appropriate care mainly the Dental department at The Kampala International University Teaching Hospital
4. Approval was sought from KIU Teaching Hospital-Ethics and Research Committee.
5. Written consent was obtained from participants and the person in-charge of The HIV Clinic.

3.10 Study Limitations

This study had several limitations. The questionnaires relied entirely on self-reporting by the respondents. It was therefore not possible to validate the responses. Secondly, most of the

responses required past events which required a good memory of the respondents. This may not have been very accurate depending on time lapse and also how the information had been conveyed to the respondents. The study participants were on their regular appointments hence perception on time could also have led to anxiety and failure to provide correct information. Furthermore, misperception that there would be treatment on oral diseases could also have led to misinformation.

3.11 Dissemination of results

The approved copies of this research were submitted to;

- i. The Faculty of Clinical Medicine and Dentistry of Kampala International University
- ii. Kampala International University- Teaching Hospital for research confirmation in the area
- iii. My supervisor
- iv. District Health Officer Bushenyi District (DHO)
- v. Hospital Director Kampala International University Teaching Hospital.
- vi. Library of Kampala International University

CHAPTER FOUR

DATA PROCESSING, ANALYSIS AND PRESENTATION

4.1 Social-demographic characteristics

Table 1: the table showing the descriptive statistics of social-demographic characteristics

Characteristic	Frequency	Percentage	Mean
Sex			
Female	87	66.4%	
Male	44	33.6%	
Age group			2.16
19-34 years	19	14.5%	
35-44 years	86	65.6%	
45-54 years	12	9.2%	
55-64 years	14	10.7%	
Marital status			2.02
Single	26	19.8%	
Married	85	64.9%	
Separated	11	8.4%	
Widow/er	9	6.9%	
Level of education			2.59
None	9	6.9%	
Primary	65	49.6%	
High school	28	21.4%	
Tertially	29	22.1%	
Monthly income			1.84
Less than Ugsh 50000	78	59.5%	
Less than Ugsh 100000	25	19.1%	
Less than Ugsh 150000	13	9.9%	
Less than Ugsh 200000	5	3.8%	
Less than Ugsh 250000	6	4.6%	
Ugsh 250000 or more	4	3.1%	
Distance to the HC			2.17

Very close	46	35.1%	
Close	34	26.0%	
Far	34	26.0%	
Very far	17	13.0%	

Source: Primary data

The from table 1 above, the social demographic characteristics that were looked at include; sex, age group, marital status, level of education, financial status and the seropositive patients distance to the health center. These were interpreted below as follows;

On sex of the respondents; most of the respondents (66.4%) were female and 33.6% of the respondents were male.

On the age group distribution of the respondents; 65.6% were in the age group of 35-44 years, 14.5% were in the age group of 19-34 years, 10.7% were in the age group of 55-64 years, and finally 4.9% were in the age group of 45-54 years. Also, **Mean=2.16** showed that on average the study respondents were falling in the age group of 35-44 years.

On the marital status of the respondents; most of the respondents (64.9) were married, 19.8% were single, 8.4% were separated, and finally 6.9% were widows/ers. Also **Mean=2.02** showed that on average the respondents were married.

On the level of education; Most of the respondents (49.6%) were at primary level, 22.1% were of tertiary level, 21.4% were of high school level and finally 6.9% had not attained any formal education. Also **Mean=2.02** showed that on average the study respondents were of primary level of education.

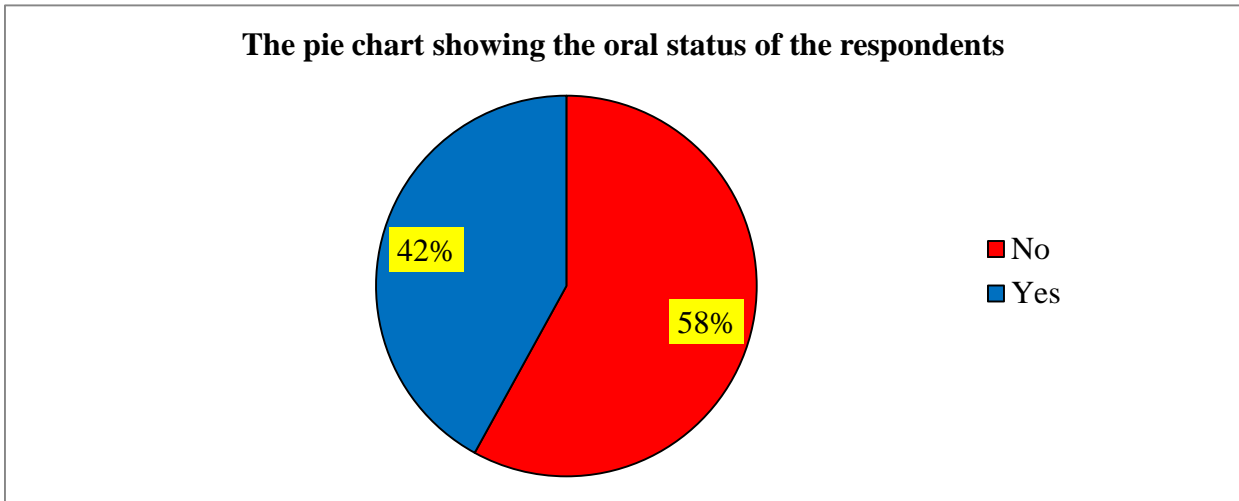
On Monthly income of the respondents; Most of the respondents (59.5%) were earning less than Ugsh 50000, 19.1% were earning less than less than Ugsh 100000, 9.9% were earning less than Ugsh 150000, 4.6% were earning less than 250000, 3.8% were earning less than Ugsh 200000, and finally only 3.1% were earning Ugsh 250000 and more. Also **Mean=1.84** showed that on average the study respondents were earning less than Ugsh 50,000.

Finally on the Patients distance to the health center; 35.1% were staying very close, 26% were staying close, 26% were staying far, and finally 13% were staying very far from the health center. Also **Mean=2.17** showed that averagely the patients distance to the health center was close.

4.2 Prevalence of utilization of dental services by adult seropositive patients

4.2.1 Oral status of the adult seropositive patients

Figure 1: The pie chart showing the oral status of the respondents



Source: *Primary data*

Figure 1 above shows that most of the respondents (58%) did not have dental problems and 42% had dental problems.

4.2.2 Utilization of dental services by adult seropositive patients

Figure 2: The bar graph showing the utilization of dental services by adult seropositive patients

Source: *Primary data*

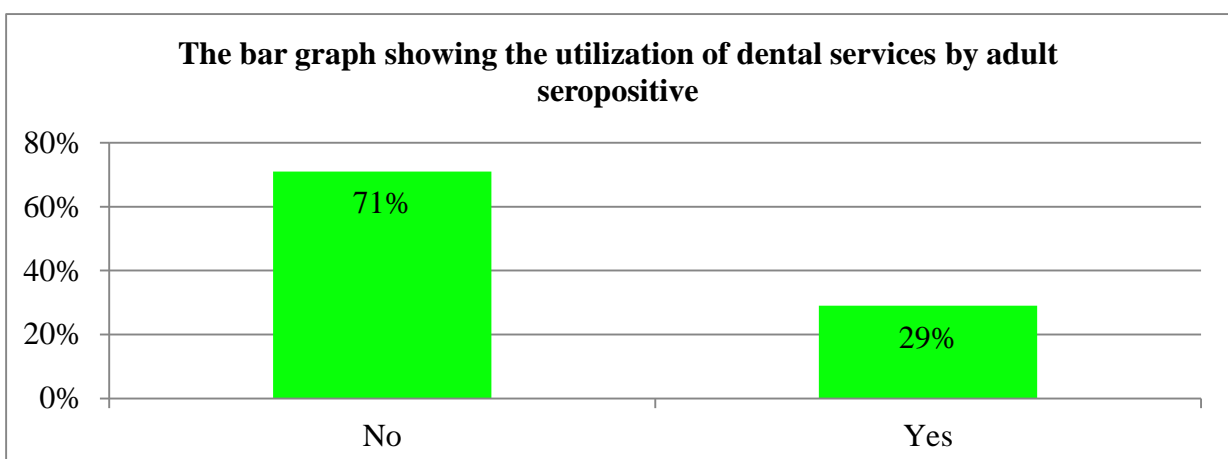


Figure 2 above showed that most of the respondents (71%) did not utilize dental services and only 29% utilized dental services.

4.3 Determinants of the utilization of dental services utilization of dental services by adult seropositive patients at KIU-TH

4.3.1 Demographic determinants of utilization of dental services by adult seropositive patients at KIU-TH

Table 2: the table showing social demographic factors of utilization of dental services

Likelihood Ratio Tests				
Demographic factor	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	Degrees of freedom (df)	Sig. (P-value*)
Sex of the respondents	83.739	.490	1	.484
Age group	84.635	1.386	3	.709
Marital status	96.279	13.030	3	.005
Education level	96.618	13.368	3	.004
Monthly income	115.491	32.242	5	.000
Distance from the Health center	92.449	9.199	3	.027

Source: Primary data

The predisposing determinants of the utilization of dental services included socio-demographic characteristics such as sex, age group, marital status, education level, financial status and distance to the health center as shown in table 2 above.

Sex of the respondents was statistically not significant ($P\text{-value}^*=0.484 > 0.05$) to determine utilization of dental services by adult seropositive patients at KIU-TH.

Age group was statistically not significant ($P\text{-value}^*=0.709 > 0.05$) to determine the utilization of dental services by adult seropositive patients at KIU-TH.

Marital status was statistically significant ($P\text{-value}^*=0.005 < 0.05$) to determine the utilization of dental services by adult seropositive patients at KIU-TH.

Level of education was statistically significant (P-value*=0.004<0.05) to determine the utilization of dental services by adult seropositive patients at KIU-TH.

Monthly income was statistically significant (P-value*=0.000<0.05) to determine the utilization of dental services by adult seropositive patients at KIU-TH.

Patients' distance to the health center was statistically significant (P-value*=0.027<0.05) to determine the utilization of dental services by adult seropositive patients at KIU-TH.

4.3.2 Other factors that determine utilization of dental services by adult seropositive patients at KIU-TH

Response	Frequency	Percentage	Mean	P-value*
To know the condition of my teeth			4.27	0.002
Strongly disagree	0	0%		
Disagree	2	1.5%		
Neutral	6	4.6%		
Agree	77	58.8%		
Strongly agree	46	35.1%		
Regular checkup			4.19	0.018
Strongly disagree	6	4.6%		
Disagree	4	3.1%		
Neutral	8	6.1%		
Agree	54	41.2%		
Strongly agree	59	45.0%		
Prevent tooth decay			4.09	0.025
Strongly disagree	7	5.3%		
Disagree	0	0%		
Neutral	9	6.9%		
Agree	73	55.7%		
Strongly agree	42	32.1%		
Prevent gum disease			3.64	0.081
Strongly disagree	9	6.9%		
Disagree	3	2.3%		

Neutral	14	10.7%		
Agree	105	80.2%		
Strongly agree	0	0%		
Prevent tooth loss			3.51	0.070
Strongly disagree	9	6.9%		
Disagree	9	6.9%		
Neutral	19	14.5%		
Agree	94	71.8%		
Strongly agree	0	0%		

Source: Primary data

From the results in the table above;

Most of the respondents (58.8%) agreed that they utilized dental services to know their teeth conditions; 35.1% strongly agreed, 4.6% were neutral and finally 1.5% disagreed. On average (Mean=4.27) implied that the respondents agreed that they utilized for dental services to know their teeth conditions. This was statistically significant (P-value*=0.002<0.05) that knowing their teeth conditions determined utilization of dental services by adult seropositive patients at KIU-TH.

Most of the respondents (45%) strongly agreed that they utilized for dental services for regular check up to prevent dental problems, 41.2% agreed, 6.1% were neutral, 4.6% strongly disagreed and 3.1% disagreed to the response. On average (Mean=4.19) showed that averagely the respondents agreed to the response that they utilized for dental services for regular check up to prevent dental problems. This was also statistically significant (P-value*=0.018<0.05) that regular checkup determined utilization of dental services by adult seropositive patients at KIU-TH.

Most of the study respondents (55.7%) agree that the utilized dental services to prevent tooth decay, 32.1% strongly agreed, 6.9% were neutral and 5.3% strongly disagreed. Mean=4.09 showed that averagely the respondents agreed to the response that they utilized for dental services to prevent tooth decay. This was also statistically significant (P-value*=0.025<0.05) that prevention of tooth decay determined utilization of dental services by adult seropositive patients at KIU-TH.

Most of the study respondents (80.2%) agree that the utilized dental services to prevent gum disease, 10.7% were neutral, 6.9% strongly disagreed and 2.3% disagreed. Mean=3.64 showed that averagely the respondents were neutral to the response that they utilized for dental services to prevent gum disease. This was also statistically not significant ($P\text{-value}^*=0.081>0.05$) that prevention of gum disease determined utilization of dental services by adult seropositive patients at KIU-TH.

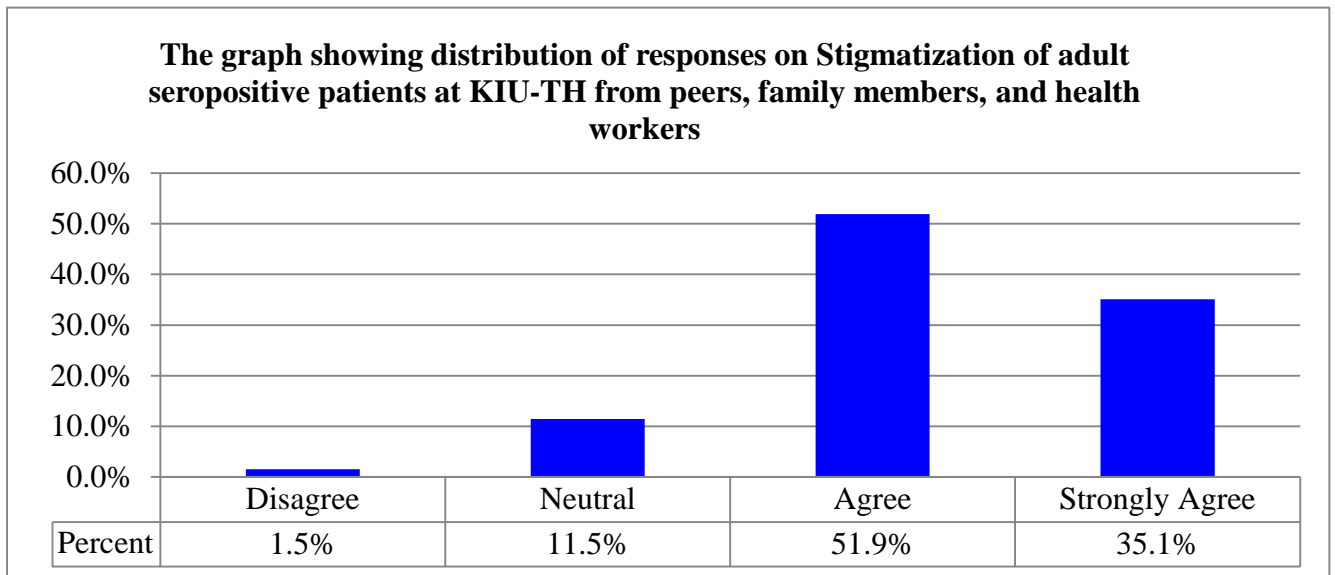
Most of the study respondents (71.8%) agree that the utilized dental services to prevent tooth loss, 14.5% were neutral, 6.9% strongly disagreed and 6.93% disagreed. Mean=3.51 showed that averagely the respondents were neutral to the response that they utilized for dental services to prevent tooth loss. This was also statistically not significant ($P\text{-value}^*=0.07>0.05$) that prevention of tooth loss determined utilization of dental services by adult seropositive patients at KIU-TH.

4.4 Barriers of utilization of dental services by adult seropositive patients at KIU-TH

4.4.1 Stigmatization from peers, family members, and health workers

Response	Frequency	Percent
Strongly disagree	0	0%
Disagree	2	1.5%
Neutral	15	11.5%
Agree	68	51.9%
Strongly Agree	46	35.1%
Total	131	100%

Source: *Primary data*

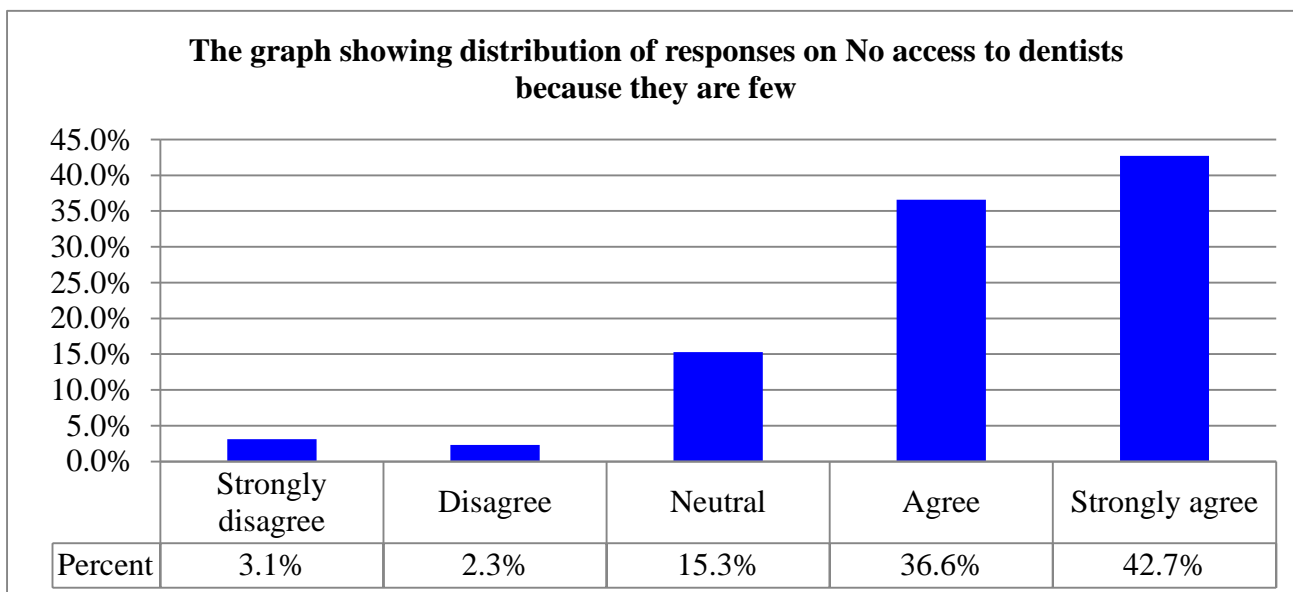


Source: *Primary data*

Most of the respondents (51.9%) agreed that stigmatization of adult seropositive patients from peers, family members, and health workers was a barrier to utilization of dental services by adult seropositive patients at KIU-TH; 35.1% strongly agreed, 11.5% were neutral and 1.5% disagreed.

4.4.2 No access to dentists because they are few

Response	Frequency	Percent
Strongly disagree	4	3.1%
Disagree	3	2.3%
Neutral	20	15.3%
Agree	48	36.6%
Strongly agree	56	42.7%
Total	131	100.0%

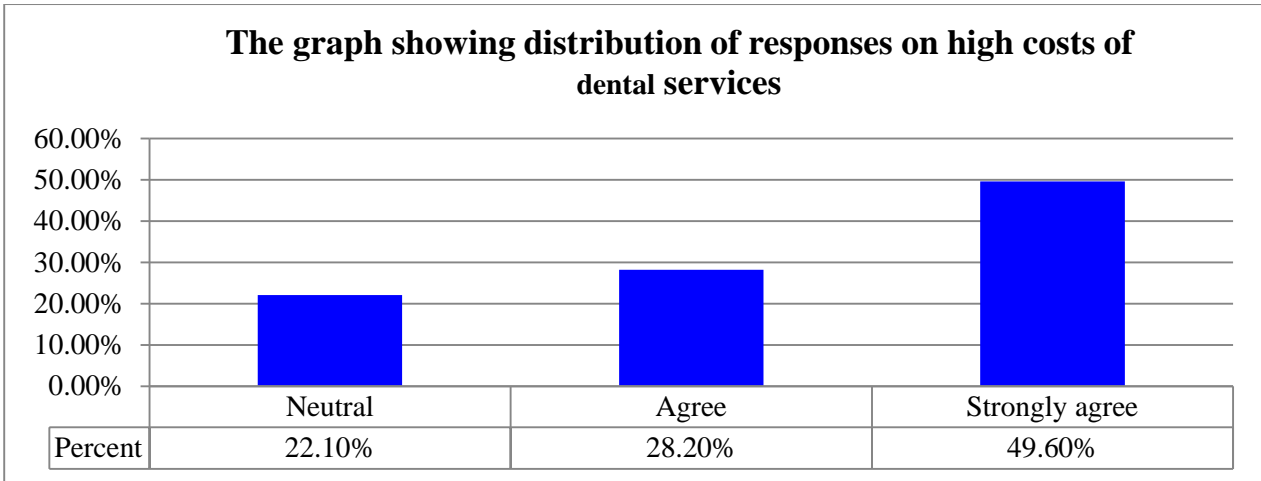


Source: Primary data

Most of the respondents strongly agreed to the response that no access to dentists because they were few was a barrier to utilization of dental services by adult seropositive patients at KIU-TH; 36.6% agreed, 15.3% were neutral, 2.3% disagreed and 3.1% strongly disagreed.

4.4.3 High costs of dental services

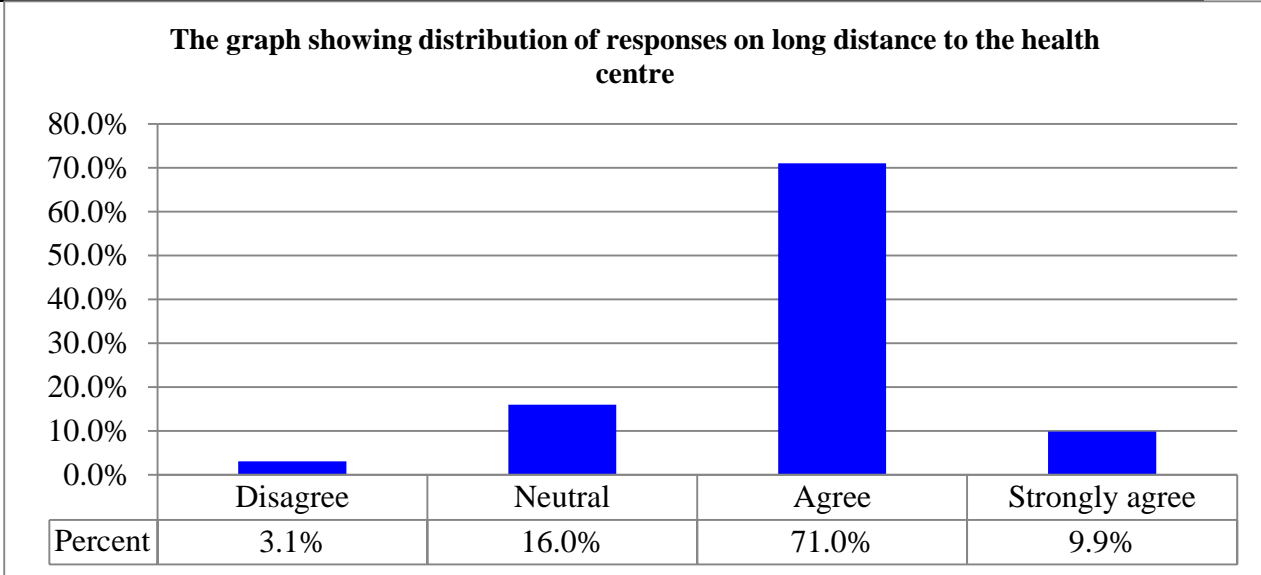
	Frequency	Percent
Strongly disagree	0	0%
Disagree	0	0%
Neutral	29	22.1%
Agree	37	28.2%
Strongly agree	65	49.6%
Total	131	100.0%



Most of the respondents strongly agreed to the response that high cost of dental services was a barrier to utilization of dental services by adult seropositive patients at KIU-TH; 28.2% agreed and only 22.1% were neutral; whereas none of the respondent disagreed to the response.

4.4.4 Long distance to health facilities

Response	Frequency	Percent
Strongly disagree	0	0%
Disagree	4	3.1%
Neutral	21	16.0%
Agree	93	71.0%
Strongly agree	13	9.9%
Total	131	100.0



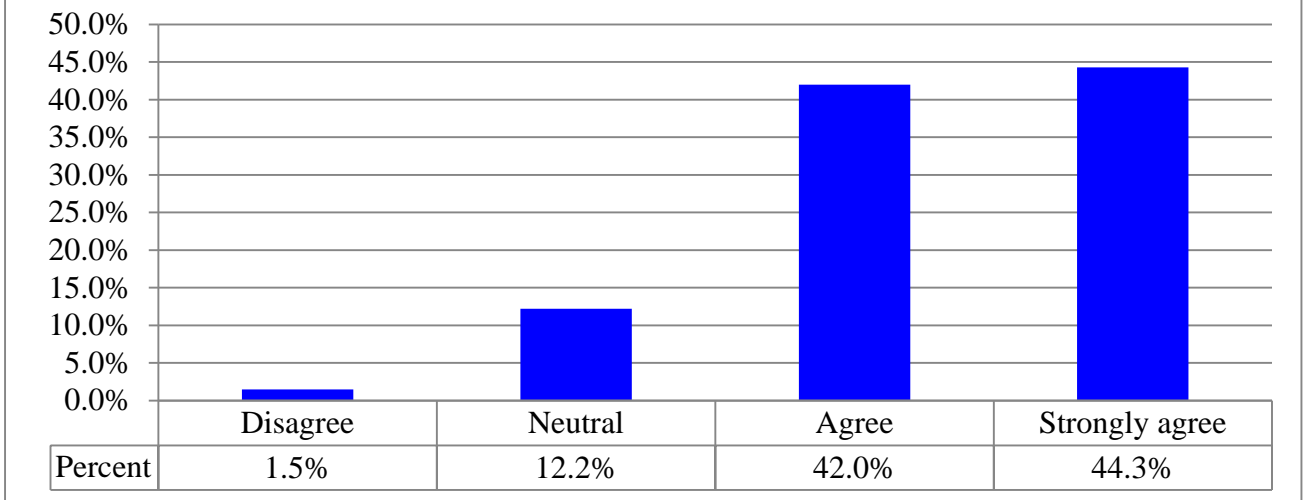
Most of the respondents (71%) agreed to the response that long distance to the health center was a barrier to utilization of dental services by adult seropositive patients at KIU-TH; 16%

were neutral; 9.9% strongly agreed and 3.1% disagreed; whereas none of the respondent strongly disagreed to the response.

4.4.5 Financial problems of the adult seropositive patients

Responses	Frequency	Percent
Strongly disagree	0	0%
Disagree	2	1.5%
Neutral	16	12.2%
Agree	55	42.0%
Strongly agree	58	44.3%
Total	131	100%

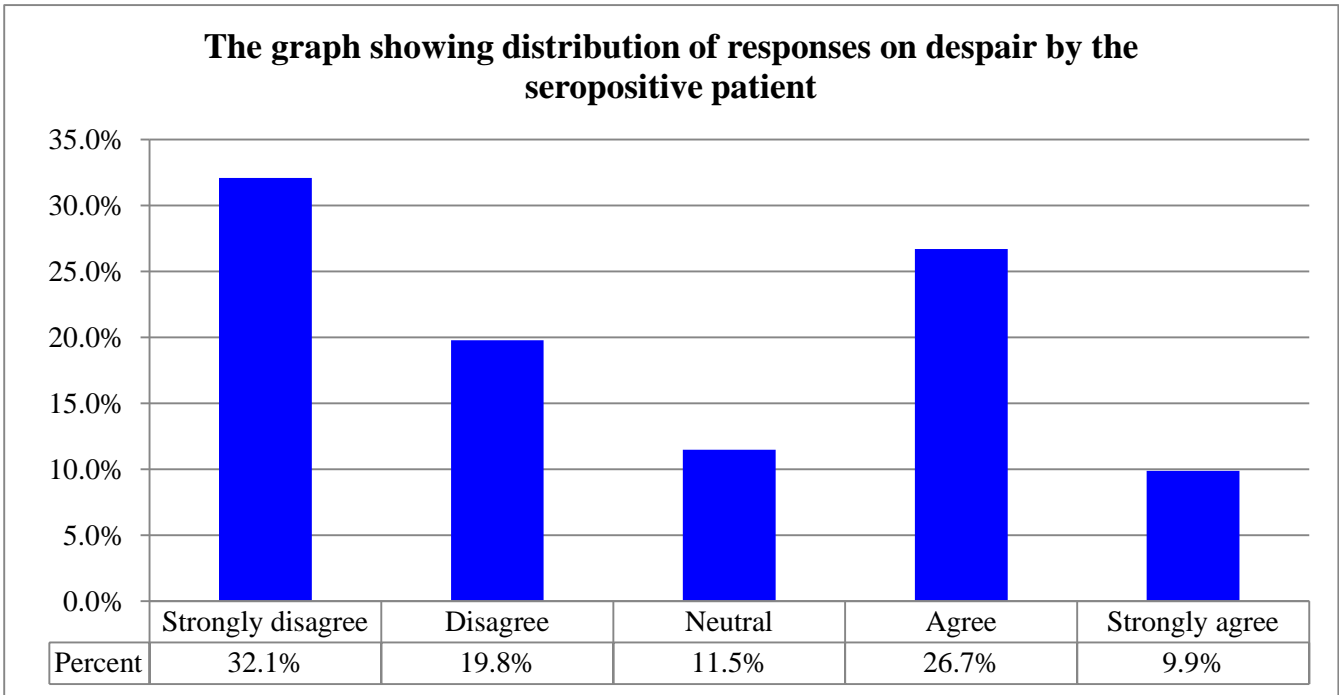
The graph showing distribution of responses on financial problems



Most of the respondents strongly agreed that financial problems was a barrier to the utilization of dental services by adult seropositive patients at KIU-TH; 42% agreed; 12.2% were neutral and 1.5% disagreed; whereas none of the respondent strongly disagreed to the response.

4.4.6 Despair by the seropositive patient

Response	Frequency	Percent
Strongly disagree	42	32.1%
Disagree	26	19.8%
Neutral	15	11.5%
Agree	35	26.7%
Strongly agree	13	9.9%
Total	131	100.0



Most of the respondents (32.1%) strongly disagreed that despair by the seropositive patient was a barrier to the utilization of dental services by adult seropositive patients at KIU-TH; 26.7% agreed; 19.8% disagreed, 11.5% were neutral; and only 9.9% strongly agreed to the response.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the discussion of the findings with respect to the study objectives, conclusions and recommendations of the study.

5.1 Discussion

5.5.1 Prevalence of utilization of dental services by adult seropositive patients at KIU-TH

The researcher found out that most of the seropositive adult patients Community Health Aids Initiative Clinic in Kampala International University-Teaching Hospital, Bushenyi District (71%) did not utilize dental services and only 29% utilized dental services. This was in agreement with a study done in Nigeria in which 93% of the cohort had not seen a dentist before being diagnosed HIV positive and 92% reported no dental visit after contracting HIV (Adedigba et al., 2016) .

This was also in line with research findings of Pereyra et al (2011) who interviewed five hundred and ninety-three participants from five HIV primary care clinics in two South Florida regarding past utilization of dental care services and found out that less than a half (34.4%) of respondents reported to have utilized dental services and seen the dentist in less than two years before the interview.

5.5.2 Determinants of the utilization of dental services utilization of dental services by adult seropositive patients at KIU-TH

5.5.2.1 Social demographic determinants

On the social demographic determinants of utilization of dental services by the seropositive adult patients Community Health Aids Initiative Clinic in Kampala International University-Teaching Hospital, Bushenyi District was categorized in different categories.

In this study sex was categorized into two i.e. Female and male. The research found out that sex of the respondents was statistically insignificant to determine utilization of dental services. Therefore, sex was not a determinant of utilization of dental services by the seropositive adult patients Community Health Aids Initiative Clinic in Kampala International University-Teaching Hospital, Bushenyi District.

The researcher also established that age group respondents were statistically insignificant to determine utilization of dental services. Therefore, age group was not a determinant of

utilization of dental services by the seropositive adult patients at Community Health Aids Initiative Clinic in Kampala International University-Teaching Hospital, Bushenyi District.

The researcher found out that marital status was statistically significant to determine the utilization of dental services by adult seropositive patients at KIU-TH. Therefore, marital status was a determinant of utilization of dental services by the seropositive adult patients Community Health Aids Initiative Clinic in Kampala International University-Teaching Hospital, Bushenyi District.

The researcher found out that the level of education was statistically significant to determine the utilization of dental services by adult seropositive patients at KIU-TH. Therefore, level of education was a determinant of utilization of dental services by the seropositive adult patients Community Health Aids Initiative Clinic in Kampala International University-Teaching Hospital, Bushenyi District.

The researcher found out that monthly income was statistically significant to determine the utilization of dental services by adult seropositive patients at KIU-TH. Therefore, monthly income was a determinant of utilization of dental services by the seropositive adult patients Community Health Aids Initiative Clinic in Kampala International University-Teaching Hospital, Bushenyi District.

The researcher found out that patients distance to the health center was statistically significant to determine the utilization of dental services by adult seropositive patients at KIU-TH. Therefore, patients distance to the health center was a determinant of utilization of dental services by the seropositive adult patients Community Health Aids Initiative Clinic in Kampala International University-Teaching Hospital, Bushenyi District.

5.5.2.2 Other factors that determine utilization of dental services by adult seropositive patients at KIU-TH

On the other determinants of utilization of dental services by the seropositive adult patients Community Health Aids Initiative Clinic in Kampala International University-Teaching Hospital, Bushenyi District;

The researcher found out that averagely the respondents agreed that it was important to know their teeth condition. This was also found out to be a determinant of utilization of dental

services by the seropositive adult patients Community Health Aids Initiative Clinic in Kampala International University-Teaching Hospital, Bushenyi District.

The study findings reveal that patients' perceptions and cultural practices frequently lead to delay in utilizing oral healthcare (Olubuloye et al., 1991). This was reinforced by their personal varying opinions on management of different dental conditions and oral health practices.

Most patients perceived oral healthcare services to be unaffordable against their meager earnings which are often irregular and unpredictable. In addition, they have competing household expenses, a common challenge among low-income earners (Mackinen et al., 2000). The mode of payment for oral healthcare services is mainly from out-of pocket (OOP) expenditure, and oftentimes, they are subjected to financial risk from health expenditure. Further, there is no evidence of robust universal health coverage to ensure quality health services without risking financial hardships from unaffordable out-of-pocket payments. These factors serve to constrain the timely and appropriate utilization of oral healthcare.

The choice of an oral health provider involves the interplay of several factors. It emerged that service location and distance covered to the health facility are the most defining factors of accessibility among the patients and, therefore, are significant determinants in selecting their health providers. The small, privately-owned dental clinics located within the vicinities of their neighborhoods were the most popular oral health facilities; in effect, the patients walk or use quick means of public transport to these facilities, and thus, they curtail transport costs and inconveniences of modes of travel.

5.3 Barriers of utilization of dental services by adult seropositive patients at KIU-TH

The study revealed that high cost of dental services was the most common barrier to utilization of dental services by adult seropositive patients at KIU-TH; the respondents further said that even when they had dental problems, they could not visit the dentists because they had no money. This was in agreement with Kiguli et al (2009) who studied factors that hinder the quality of dental service delivery in Uganda and found out the following shortage of dentists and lack of trust in them, lack of needed treatments, high costs and long distances to facilities.

The researcher found out that stigmatization of adult seropositive patients from peers, family members, and health workers was a barrier to utilization of dental services by adult seropositive patients at KIU-TH; this was because some of adult seropositive patients were isolated in their communities. This was in line with Dowshen (2009) who found out that Stigmatization from

peers, family members, and friends as well as healthcare providers have social and health implications, such as isolation and low medication adherence.

The researcher also found out that financial handicap was a barrier to the utilization of dental services. This was either attributed to unemployment or meager incomes. In this study, the respondents were on average earning less than Ugsh 50000 per month implying that they were financially struggling hence most of them could not be able to afford the dental services. This was in line with the study done by Seacat (2009) and Rwenyonyi (2011) who established that people living with HIV/AIDS do not receive adequate oral care treatment due to financial problems.

The researcher also found out that no access to dentists because they were few was one of the barriers to utilization of dental services by adult seropositive patients at KIU-TH. This was in line with carried out in Nigeria (Adedigba et al., 2016) in cross-sectional questionnaire survey of 239 PLHIV patients which found out 93% had not seen a dentist before being diagnosed HIV and among them 14.3% reported that they wanted dental service care but had no access to it.

The study revealed that long distance to the health center hindered the patients from the utilization of dental services by adult seropositive patients at KIU-TH. This was in agreement with Kiguli et al (2009) studied the factors that hinder the quality of dental service delivery in Uganda and found out the following shortage of dentists and lack of trust in them, lack of needed treatments, high costs and long distances to facilities.

It was also observed that most of the respondents (100%) paid for dental treatment with their own money and there was little or no form of healthcare financing mechanism to alleviate the burden of the cost of treatment. This alludes to the lack of a good health system in the country with little or no financial risk protection for oral health. This reinforces a previous study which observed that gross underfunding of the health sector resulting in lack of exemptions and subsidies for the poor which inadvertently increases the cost the consumers have to bear can constitute a major barrier to access and utilization of dental services World Bank (2017) and Dr Mboli (2003).

However, the study revealed that despair by seropositive patients was not a barrier to the utilization of dental services by adult seropositive patients at KIU-TH; this was most likely

attributable to the seropositive patients at KIU-TH getting effective guidance and counseling from the clinics.

In examining the factors that have a significant association with accessing and utilizing dental care, our study shows that the educational status of the respondents, belief that there are more experienced staff in a facility, cost of treatment, immense pain and perceived seriousness of an illness is associated with utilization patterns. In this light the results have highlighted the fact that so many different factors come into play in accessing oral health services and one factor alone might not be enough to constitute a barrier or an incentive to access dental care. This finding is corroborated by another study which observed that a person's use of health services usually depends in part to their socio demographic characteristics like marital status, gender, educational level, occupation, income, their health beliefs and attitudes, knowledge of the service being offered and the individuals perceived health need (Andersen, 1995).

5.4 Limitations of the study

The study was carried out in a semi-urban setting and this might account for the seemingly low access and utilization rate bearing in mind that most good dental services are found mainly in urban areas. Thus results can only be extrapolated to semi-urban settings. Further studies will need to be done to compare rural with urban findings.

5.5 Conclusion

This study shows that prevalence of utilization of dental services by seropositive adult patients was less than a half (29%) of the cohort study as supported by the findings.

The study also established that utilization of dental services by seropositive adult patients was determined by

The barrier to access is cost and most importantly utilization of the available services is hampered by dental service cost, stigmatization and insufficient capacity out of pocket self support. Likewise there is a high emphasis on curative rather than preventive approach to healthcare, and majority of respondents regardless of their socioeconomic class seek care only when symptoms of disease are present.

5.6 Recommendations

- It is expedient that the oral health policy should be revised and implemented to fast track the integration of preventive dental care into the primary health programme, and improve awareness while emphasizing the need for preventive dentistry.

- It is recommended that a comprehensive health insurance package which covers oral diseases should be put in place so as to help reduce the cost of dental treatment.
- Training of healthcare staff in interpersonal communication should also be pursued because staff attitude has been observed to be a barrier also to access and utilization.
- Researchers should collaborate with policy makers in the form of feedback workshops or policy briefs so that research evidence would play a greater role in informing the planning of subsequent oral health policies

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APPENDICES

Appendix I: Consent Form

TOPIC: Dental services utilization among adult sero-positive patients at Community Health Aids Initiative Clinic in Kampala International University Teaching Hospital, Bushenyi

INTRODUCTION

Hello. My name is **Fred N. Okach**, a final year student of Kampala International University- Western Campus from the Faculty of Clinical Medicine and Dentistry doing Bachelors of Dental Surgery currently carrying out a research study on the above topic. The aim of this study is to assess utilization of oral health services by adult patients living with HIV in CHAI Clinic at Kampala International University-Teaching Hospital, Bushenyi District. Your participation in this study is entirely voluntary. The study will not result in any loss of benefits you need from this hospital. If you accept proceed to sign the consent form. No name is required. For any information contact the principal researcher undersigned below.

.....

Okach F Nyagado

Kampala International University-Western Campus

Faculty of Clinical Medicine and Dentistry

P. O. Box 71, Bushenyi, Uganda.

Telephone: +254 722589716

INFORMED CONSENT FORM

I have been requested by the Principal researcher to participate in the above study and I have been explained the purpose of the study in the Language which I do understand, I hereby willingly accept to participate.

Signature or Thumb print: Date:

Participant

Witness: Signature:

Principal researcher

Appendix II: ENGLISH QUESTIONNAIRE FOR INTERVIEW

Please answer the questions asked and if you do not mind I will write down your responses.

You

may ask me for an explanation of any question if you need to and you may add comment where necessary. Date:.....

Serial

Number:.....

1. Are you

- Male
- Female

2. What is your marital status?

- Single
- Married
- Separated/Divorced
- Widow/er
- Living with a partner

3. Which age group do you belong to?

- 19-34 years
- 35-44 years
- 45-54 years
- 55-65 years
- Other (please specify):.....

4. What is your highest level of formal education?

- None
- Primary school
- High school
- Tertiary Education (college, technical, university, etc)

5. Where is your hometown/ city?.....

6. Have you stayed in this area for longer than 2 years?

- Yes
- No

7. How far do you live from the nearest dental clinic, dental hospital or dentist.

- Very close (less than 1km)
- Close (1-5km)

- Far (5-10km)
- Very far (more than 10km)

Utilization of Dental Services

8. Since you were diagnosed as HIV positive have you needed mouth care for the last one year?

- Yes
- No

9. If yes, did you receive help for the mouth problem?

- Yes
- No

10. Where did you receive the care?

- Private Dentist
- Dental Clinic
- Hospital Dentist
- Hospital Doctor
- Medical Doctor
- Pharmacy
- Traditional Healer
- Other (please explain):.....

Determinants of utilization

11. How long does it take you to get to the nearest dental clinic, dental hospital or dentist?

- Less than 15 minutes
- 15 minutes to 30 minutes
- 30 minutes to an hour

12. How do you get there?

- Walking
- Taxi
- Boda boda
- Private vehicle

13. In the past year were you working

- Not working at all
- Working full-time
- Working part-time (all the time/permanently)
- Working part-time (some of the time/seasonal)

14. What is your monthly income?

- Less than Ugsh 50000
- Less than Ugsh 100000
- Less than Ugsh150000
- Less than Ugsh200000
- Less than Ugsh250000
- Ugsh250000 or more

15. Do you have medical aid?

- Yes
- No

16. If yes, does your medical aid pay for all your dental visits?

- Yes
- No

17. How long have you known your HIV positive status?

Years

Months

Barriers to dental service utilization

18. Did the dental staff or health care workers where you were getting treatment know that you are HIV positive?

- No, they did not ask so I did not tell them.
- No, I did not tell them even though they asked
- Yes, they asked me and I told them
- Yes, I told them even though they did not ask
- Yes, the doctor who sent me told them.
- Yes, they found out in some other way (please explain):

.....

19. If no, why did you not tell them?

- I was afraid to tell them because of what they would think of me being HIV positive.
- I was afraid to tell them because they would tell others.
- I did not tell them because they did not ask.
- I did not think it was important to tell them that I was HIV positive.
- I did not see a reason to tell them about my HIV status because
- I was just receiving dental treatment.
- I was in so much pain that I did not consider telling them about my HIV positive condition.

I was afraid they would refuse to treat if they knew I was HIV positive

20. If your answer is yes, how did they find out?

a) I told them because they asked me about my HIV status.

I told them even though they did not ask about my HIV status.

b) I told them because I thought it was important for them to know.

I told them even though I did not think it was important for them to know.

c) My relative/s (father, mother, brother, sister, cousin) advised me to tell them so I told them told them.

My relative/s (Father, mother, brother, sister, cousin) told them.

d) My partner (wife/husband/boyfriend/girlfriend) advised me to tell them so I told them.

My partner (wife/husband/boyfriend/girlfriend) told them.

e) The doctor that sent me to them advised me to tell them so I told them.

The doctor that sent me to them told them.

21. In the case where they knew you were HIV positive what do you feel their attitude was like about the fact that you were HIV positive?

Please comment where you feel like it.

a) They made you feel unwelcome.

They made you feel welcome.

Comment:.....

.....

b) They seemed unhappy to treat you.

c) They treated you bad because of your HIV status.

They treated you well.

Comment:.....

22. What was the reason for you not receiving dental treatment since you were diagnosed as HIV

positive?

I was too ill to look for dental treatment

The service was not available in my area

I did not know where to get the service

The place where the service is offered is too far

I had no money for the transport

I had no money to pay for the service

I had to wait too long for the service

- I feared what the dentist and staff might think about me being HIV positive.
- I feared being discriminated against by the dentist and staff.
- I feared loss of confidentiality about my HIV status.
- I feared the dentist and staff might tell other people about my HIV status.
- I did not feel welcome where the service was offered.
- I did not have any problems.
- Another reason (please explain):.....

Personal influence on disease / Effectiveness of dental care: “How much do you personally agree or disagree with the following statements about dental care? Please use the following scale:”

1: strongly disagree, 2: somewhat disagree, 3: somewhat agree, 4: strongly agree 5:

Neutral

23. I think that brushing my teeth at least once a day is necessary to keep my mouth healthy

1 _____ 2 _____ 3 _____ 4 _____ 5 _____

24. I think that the condition of my teeth is an important part of my overall health

1 _____ 2 _____ 3 _____ 4 _____

25. I prefer to take an active part in decisions about my dental care

1 _____ 2 _____ 3 _____ 4 _____

26. Modern dentistry can solve most dental problems

1 _____ 2 _____ 3 _____ 4 _____

27. Regular checkups, even when nothing is wrong, will help prevent dental problems

1 _____ 2 _____ 3 _____ 4 _____

28. Dentistry can usually relieve or cure the problems that patients have

1 _____ 2 _____ 3 _____ 4 _____

29. Some dentists are more interested in making money than in making sure people get good dental care

1 _____ 2 _____ 3 _____ 4 _____

30. Dentists often recommend treatment that you don't really need

1 _____ 2 _____ 3 _____ 4 _____

31. I prefer to rely on the judgment of my dentist for decisions about my dental care

1 _____ 2 _____ 3 _____ 4 _____

32. I think I do a good job taking care of my teeth without the help of a dentist

1 _____ 2 _____ 3 _____ 4 _____

Importance of dental visits:

1: strongly disagree, 2: somewhat disagree, 3: somewhat agree, 4: strongly agree 5:

Neutral

It is important is it to you to see a dentist on a regular basis to:

33a. Prevent tooth decay

1 ____ 2 ____ 3 ____ 4 ____ 5

33b. Prevent gum disease

1 ____ 2 ____ 3 ____ 4 ____ 5

33c. Prevent tooth loss

1 ____ 2 ____ 3 ____ 4 ____ 5

.....
Thank you for your participation.

Appendix III: Observation checklist

Item of Observation	Rating
1. Ease of accessibility of HIV-care clinic	
2. Cleanliness & Maintenance	1. Very Good 2. Good 3. Average 4. Below average
3. Staff attitudes & patient interaction	1. Very Good 2. Good 3. Average 4. Below average
4. Giving oral health talks to patients	1. Always 2. Sometimes 3. Never
5. Opening hours of health facility	1. Adequate 2. Not adequate
6. Average time spent at health facility	< 1 hrs 2-3 hrs >3 hrs

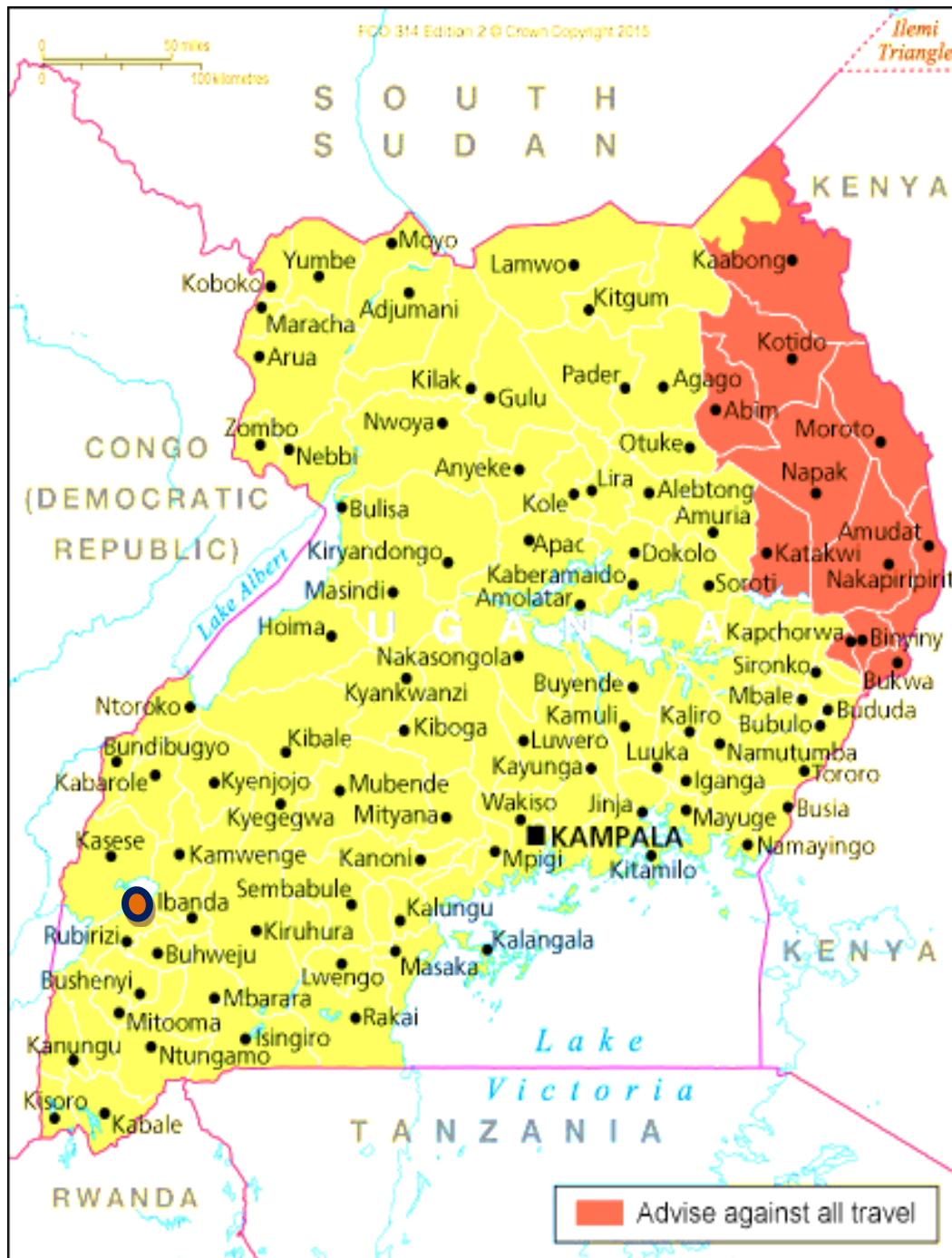
Appendix IV: Work plan

Activity	Time allocation for the activity						Concerned Person
	Nov 2017	Dec 2017	Jan 2018	Feb 2018	Mar 2018	Apr 2018	
Topics approval from Faculty of CMD							Researcher, Research committee
Research proposal writing and review							Researcher and Supervisor
Correction, approval and submission of proposal , getting introductory letter from Faculty of CMD							Researcher
Data collection, analysis and discussion							Researcher, Supervisor
Report write up							
Submission of report and dissemination							

Appendix V: Budget

Item	Unit cost (@) Ugsh	Number of units	Total amount Ugsh
Internet	200,000/=	1	200,000/=
Transport	1,000/=	35	35,000/=
Rent	150,000/=	1	150,000/=
Typing and printing proposal	15,000/=	4	60,000/=
Binding research proposal	1,500/=	4	6,000/=
Typing and printing report	20,000/=	4	80,000' =
Binding research report	1,500/=	4	6,000/=
Miscellaneous	30,000/=	1	30,000/=
Airtime	1,000/=	30	30,000
Lunch	3,000/=	14	42,000/=
Pens	500/=	2	1,000/=
Grand Total			640,000/=

Appendix VI: A map of Uganda showing location of Bushenyi District



KEY: ● Area of Bushenyi District

Appendix VII: A map of Bushenyi district showing KIU-Teaching Hospital



KEY

KIU

● Teaching Hospital

APPENDIX VIII: RECOMMENDATION LETTER



**KAMPALA INTERNATIONAL
UNIVERSITY – WESTERN CAMPUS**

P O BOX 71, ISHAKA UGANDA
Tel: +256 200923534
www.kiu.ac.ug

**OFFICE OF THE DEAN
FACULTY OF CLINICAL MEDICINE & DENTISTRY**

22/02/2017

TO WHOM IT MAY CONCERN

RE: OKACH FRED NYAGADO (BDS_c/0004/113/DF)

The above named person is a fifth year student at Kampala International University pursuing a Bachelor of Dental Surgery Programme.

He wishes to conduct his student research in your community.

Topic: Barriers to oral health care access for seropositive patients at Kampala International University –Teaching Hospital

Supervisor: Mr. Pius Theophilus

Any assistance given will be appreciated.

S-O Akib
Dr. Akib Surat O
Assoc Dean FCM&D



“Exploring the Heights”

Assoc. Prof Ssebuufu Robinson, Dean (FCM & D) 0772 507248 email: rssebuufu@gmail.com
Dr. Akib Surat Associate Dean FCM & D) email: doctorakib@yahoo.com