

**HIV TRANSMISSION RISK PERCEPTIONS AND FACTORS ASSOCIATED WITH
TRADITIONAL CHILD CARE PRACTICES AMONG HIV+VE MOTHERS
ATTENDING JARAMOGI OGINGA ODINGA TEACHING AND REFERRAL
HOSPITAL, KENYA**

**BY
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**A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF MASTER OF PUBLIC HEALTH IN HEALTH
PROMOTION AND INTERNATIONAL HEALTH**

SCHOOL OF PUBLIC HEALTH & COMMUNITY DEVELOPMENT

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DECLARATION

I, John Oduor Okanda, do hereby declare that this is my original work and has not been submitted for the award of a degree or diploma in any other university or college.

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ACKNOWLEDGEMENT

This thesis is credited to all whose contributions have enabled me to successfully complete this work. It is difficult to individually thank all of them, but in particular I want to mention my supervisors of Maseno University, School of Public Health and Community Development, Dr. Florence Habwe and Dr. Patrick Onyango for guiding me throughout the study. Similarly, I thank all the respondents who agreed to be interviewed and the research assistance who helped with the data collection. Finally, I appreciate the support and cooperation of the Matrons at the JOOTRH CCC and MCH and the JOOTRH leadership for allowing me to conduct my research at the facility.

DEDICATION

I dedicate this study to God for the gift of life and good health throughout this study period; and to my wife Jaqueline and children Blessing and Phelsia for their moral, financial, and physical support during the study.

ABSTRACT

Traditional child care practices of pre-mastication, uvulectomy and false teeth extraction are widespread in Africa including Kenya, but are not well documented in Kisumu County. Despite these practices being potential routes of HIV transmission, it is not known whether HIV-infected mothers consider them risky practices in the context of HIV transmission, especially in areas like Kisumu County that has the second highest HIV prevalence in Kenya at 17.4%. The study sort to investigate HIV transmission risk perceptions and factors associated with traditional child care practices among HIV-infected mothers attending Jaramogi Oginga Odinga Teaching and Referral Hospital (JOTRH), Kenya. Specific objectives were to determine prevalence of the practices, identify cultural and socio-demographic factors associated with the practices and to determine association between the practices and perception of risk of HIV transmission to the children. A mixed method cross-sectional study was done between July 2021 and January 2022. A consecutive sample of 216 mothers out of 245 were enrolled for quantitative interviews and 3 Focus Group Discussions (FGDs) of 7, 8 and 7 participants for qualitative interviews. A questionnaire was used to collect quantitative data and interviewer guide for qualitative data from FGDs. False teeth extraction was most prevalent practice at 21.8%, uvulectomy at 14.9%, and pre-mastication at 8.8%. Participants aged 24-28yrs were 59% less likely to practices the methods compared to those aged 19-23 years (OR=0.41, $P=0.022$). Mothers with post-secondary education were 61% less likely to practice these methods compared to those reporting primary level of education (OR= 0.39, $P=0.049$). Widowed or separated mothers had nearly 3-fold risk of practicing these methods compared to singles (OR=2.96, $P = 0.049$); whereas participants reporting being afraid of missing next meal were 2.4 times likely to practice these methods compared to those not afraid of missing next meal (OR= 2.41, $P <0.001$). Majority (71.3%) of participants were aware about risk of transmitting HIV through these practices. Paradoxically, proportion of mothers engaging in the practices was lower among those who said the risk of HIV-transmission through traditional practices was low compared to those who said the risk was high (PR=0.93, $P=0.033$). Proportion of mothers who engage in traditional practices was more than 4-fold among those who don't know if afraid of their babies getting HIV infection through traditional practices compared to those were afraid (PR=4.27, $P<0.001$). Results show that HIV-infected mothers are engaging in risky traditional practices. Continuous sensitization on these risky practices is necessary among HIV-infected mothers to discourage the practices.

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LIST OF ABBREVIATIONS/ACRONYMS

AIDS	:	Acquired Immunodeficiency Syndrome
ART	:	Antiretroviral Therapy
CD4	:	Cluster of Differentiation 4
HIV	:	Human Immunodeficiency Virus
HIV+VE	:	HIV Infected
JOOTRH	:	Jaramogi Oginga Odinga Teaching and Referral Hospital
MCH	:	Maternal and Child Health Clinic
MTCT	:	Mother-to-Child Transmission of HIV-1
N	:	Total population size
n	:	Sample size (a subset of the population)
PMTCT	:	Prevent Mother-to-Child Transmission of HIV-1
RNA	:	RiboNucleic Acid
STI	:	Sexually Transmitted Infection
UNAIDS	:	The Joint United Nations Programme on HIV/AIDS
WHO	:	World Health Organisation

OPERATIONAL DEFINITION OF TERMS

Culture: It is the way of life of the people at a particular time that comprises the shared values, behavior and habits, customs, religion, laws, understandings, assumptions, and practices that are learned from earlier generations, imposed by present members of society, and passed on to succeeding generations, that in our case inform the childcare practices.

Caregiver: A person responsible for caring for a child on a daily basis. In our case biological mothers were the main care givers for their children.

Diversity: In focus group discussions, it refers to the range of different perspectives, backgrounds, and characteristics among the participants e.g. experience or demographics

Exclusive breastfeeding: Feeding on breast milk without additional food or drink.

Explanatory Sequential Method: This is the mixed-methods research approach that was used in this study. The study collected and analyzed quantitative data first, followed by collection and analysis of qualitative data to help explain on the quantitative results

False teeth extraction: Procedure in which the unerupted canine follicles (‘plastic teeth/gum’) are removed using sharp instrument like hot needle, knife, or even fingernails by a traditional healer.

Household: A group of two or more people living together who make common provision for food or other essentials for living.

Mixed-feeding: Feeding a child on liquid and/or food in addition to breast milk.

Premastication feeding: Involves pre-chewing food or another item such as herb or traditional medicine by a mother/caregiver and then feeding it to a child.

Reliability: This is when a data collection instrument collects data that produces consistent results over time and across different interviews. This study used a statistical measure, Cohen’s Kappa test, to quantify the level of agreement of responses between two respondents.

Risk perception: In this case refers to how HIV infected mothers interpret the likelihood or danger of transmitting HIV to their children through traditional child care practices

Thematic saturation: This means a point where no new information is being generated from further discussions, indicating sufficient data collection in a focus group discussion.

Traditional child care practices: In our case, we looked at weaning practices and folk medicine practices of premastication feeding, uvulectomy and false teeth extraction.

Uvulectomy: This is intra-oral mutilation in which uvula is cut by a traditional healer using scissors, a string or with a special knife.

Validity: The extent to which a data collection instrument accurately captures what it is intended to capture. For this reason, we pre-tested our data collection instrument for completeness and clarity to the respondents, by using a panel of persons who used their judgement to establish how well the measuring instrument met the standards.

Vertical transmission: Transmission of HIV from mother to child.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

HIV transmission risk perceptions among HIV-infected mothers refers to how mothers who are living with HIV understand and evaluate the possibility of transmitting the HIV virus to their children. According to Ferrer and Klein (2015), in health decision-making, individuals are expected to navigate choices involving weighing risk for consequences with benefits of action. Behaviors contributing to disease initiation and progression are often pleasurable. Motivation to forgo such pleasurable behaviors, or engage in inconvenient preventive behaviors, is believed to be driven to some extent by beliefs about the probability that a health consequence will occur (Ferrer and Klein, 2015) It has been reported that Mother-to-child transmission of HIV can occur at any point during the second and third trimesters of pregnancy, during delivery or during breastfeeding and some of the risk factors are high maternal viral load in plasma and breast milk, HIV related maternal immune status near the time of delivery, vaginal delivery, duration of rupture of membranes, breastfeeding and oral ulcers in breastfeeding infants (WHO/UNICEF, 2016).

The guideline used in PMTCT clinics contain information to mothers that HIV can be transmitted to their babies during pregnancy, childbirth, or breastfeeding (EGPAF, 2019). The information on possible risk of HIV transmission through traditional child care practices is not included in the guidelines and therefore may not be part of the information given to mothers, yet some of the mothers engaged in risky traditional child care practices (Graham et al., 2000) This study focused on understanding whether the mothers understood the possibility of transmission of HIV through such practices and how they perceived the risk of transmitting the HIV virus to their children through traditional child care practices.

Traditional child care practices vary widely across cultures and encompass a range of behaviors and beliefs regarding child care, feeding practices, and health management. These practices are often deeply rooted in cultural norms and may not always align with medical recommendations for preventing HIV transmission. Understanding the perceptions of HIV transmission risk among HIV-infected mothers and identifying factors associated with traditional child care practices are crucial for designing culturally sensitive and effective prevention programs.

Various strategies are being evaluated to prevent transmission of HIV-1 to children in resource-limited settings. However, traditional child care practices of pre-chewing foods (Gaur et al., 2009; Ivy et al., 2012; Labraña et al., 2013; Maritz et al., 2011; Pelto et al., 2010) and oral operations, including uvulectomy (removal of uvula) and extraction of ‘false’ teeth (natal or neonatal) (Barzangi et al., 2014; Garve et al., 2016; Graham et al., 2000; Johnston & Riordan, 2005; Mutai et al., 2010; Nuwaha et al., 2007) are practiced by some mothers and are possible risk for child HIV transmission (Gaur et al., 2009; Maritz et al., 2011).

Premastication which is pre-chewing, involves an adult chewing food or other items such as herb or traditional medicine and then feeding it to a child, mostly during weaning (DiNubile, 2010; Gaur et al., 2009; Pelto et al., 2010). Premastication feeding may expose a child to blood from the oral cavity of a person infected with a viral disease, and has been associated with horizontal pathogen transmission, including hepatitis B and HIV (Butler et al., 2010; DiNubile, 2010; Gaur et al., 2009; Pelto et al., 2010).

1.1.1 Mechanism of HIV transmission through premastication

Studies have demonstrated that HIV viral load in breast milk rises at the time of weaning or other disruptions in continuous breastfeeding (Levison et al., 2014). In mothers with periodontitis and generally poor dental hygiene, premastication would likely results in mixing of bacteria, blood, and saliva with the chewed food and the transfer of infectious particles coated by a food bolus into the immature gut of the child or open wounds in the mouth or throat, which has been linked to transmission of human herpesvirus 8 and HIV from infected caregivers to their children (Gaur et al., 2009; Baggaley et al., 2008; Gonzalez et al., 2009)

The following case studies illustrate the premastication cases are reported for a study conducted in the US by Gaur et al.(2009) and a study conducted in Chile by Labrana et al.(2013)

1.1.1.1 America Case study 1

A child, born to a mother living with HIV, was followed up at a Pediatric HIV clinic until he was aged 20 months. The child was never breastfed. The clinic performed HIV tests on the child at ages 20 and 21 months, which were negative. At 39 months of age, the child was seen by a pediatrician presenting with anemia and recurrent submandibular lymphadenitis with abscess caused by *Mycobacterium fortuitum*. The mother’s history of AIDS combined with the child’s clinical presentation, prompted the pediatrician to order for HIV-1 testing for the child and the results were positive. The mother reported feeding the child on

pre-masticated family food but could not recall the child's age or her own oral health during the time she pre-chewed food for the child. Phylogenetic analysis of the mother's and the child's HIV-1 sequences supported the epidemiologic conclusion that the mother was the source of the child's HIV-1 infection.

1.1.1.2 America Case study 2

This was a 9-month-old girl who presented at an emergency department with fever, jaundice, nosebleed, oral thrush, and failure to thrive. She was diagnosed with HIV-1 infection. Given the history of the mother's chronic HIV infection, the child had previously been screened for perinatal HIV infection. Three HIV tests were performed at 41, 60, and 118 days of life and results of all the 3 tests were negative. At about 8 months of age, the child presented with low-grade fever and was diagnosed with oral candidiasis and a nonspecific viral infection. Another clinician who routinely queried caregivers about infant feeding practices, including pre-mastication, determined that the mother had intermittently offered the child pre-chewed food from about 120 days of age until the child's current illness. The child was never breastfed. The mother reported that during the period that she pre-chewed food for the child, she had intermittently bleeding gums and mouth sores. During the same period, her adherence to ARV therapy was poor, her HIV viral load was very high and her CD4 count was very low. Phylogenetic analysis of the mother's and the child's HIV-1 sequences supported the epidemiologic conclusion that the mother was the source of HIV-1 infection to the child.

1.1.1.3 America Case study 3

A previously healthy 15-month old child presented to a pediatrician with recurrent diarrhea and otitis media. The doctor performed HIV-1 test on the child at 15, 16, and 19 months of age and the results were positive. The doctor tested the child's mother as well for HIV at the same time points and the results were negative. The mother reported to have lived with a maternal great-aunt when the child was aged 9 to 14 months. The great aunt helped care for the child and fed him food that she pre-masticated. The mother reported seeing, more than once, the great-aunt's gingiva bleeding when she pre-masticated food for the child's, and she saw blood mixed with the pre-chewed food. However, she was unaware of the great-aunt's HIV status at the time. The great-aunt later died of HIV related complication when the child was 14 months of age (1 month before the child's first HIV positive test results). The great-aunt had been in a 12-year sexual relationship with a male intravenous drug user who was HIV infected. Thorough investigations were conducted that ruled out alternative modes of

transmission, leaving pre-mastication as the only possible mode of transmission. The history of pre-mastication in the absence of known risk factors for HIV transmission suggested that the great-aunt was the possible source of the child's HIV infection.

Additional follow-up interviews with caregivers and physical examinations of the children in the 3 cases did not reveal other modes of potential HIV transmission from persons infected with HIV in the household, such as percutaneous injuries, transfusion or receipt of transplanted tissues, other parenteral exposures or other high-risk contacts (including sexual abuse)

1.1.2 Chile Case Study

A known HIV infected mother, who was on ART intervention, delivered a healthy baby who tested HIV negative at birth, 3, and 18 months of age according to the PMTCT guidelines of the country. At 2 years the child presented with fever, intermittent diarrhea, and general malaise. Physical examination revealed extensive oral thrush and retroauricular lymphadenopathy. Due to the mother's history of living with HIV infection, an HIV serology test was requested for the child which came back positive. Investigations of possible transmission mechanisms was initiated. The child had no history of blood transfusions and was never breastfed. Two pediatric gynecologists also evaluated the child and ruled out signs of sexual abuse. Further interrogation of the mother confirmed that she had repeatedly practiced pre-mastication of food to her baby. These reported cases provide compelling evidence linking pre-mastication to HIV infection, a route of transmission not previously reported that has important global implications including being a possible explanation for some of the reported cases of "late" HIV transmission in children, that for a long time were attributed to breastfeeding.

Uvulectomy, which is the cutting of the uvula, is widespread in Africa and has been reported in Chad, Niger, Nigeria, Morocco, Tanzania, Kenya, Mali, Ethiopia and Sudan and in the Arabian Peninsula (Johnston & Riordan, 2005). It is performed in the first weeks of life or when the baby has respiratory tract infection. It is done by traditional healers mostly to prevent or stop vomiting, cough, throat pain and to prevent suffocation during pharyngitis. Tools used were reeds, strings, wires, sickle knives and spoons or spatulas. A wooden spatula is inserted into the child's mouth to depress the tongue and support the uvula. Then a broad-handled metal rod with a flattened end, which is sharpened and curved into a hook, is used to

cut and amputate the uvula. The two instruments are used together to sandwich the uvula and remove it (Hodes, 1997; Johnston & Riordan, 2005). This practice has been associated with risks of meningitis, sepsis (Hodes, 1997), bone infections (otitis and osteomyelitis), HIV transmission (Johnston & Riordan, 2005), hepatitis (Telatela et al., 2007) and tetanus (Hodes, 1997; Johnston & Riordan, 2005). The literature shows that Uvulectomy is widely practiced in Africa, including Kenya. A traditional practitioner uses unsterile equipment to mutilate the gum of the child, causing open wounds that are left exposed to possible HIV virus transmission from breast milk and unsterile shared equipment which are possible mechanisms for the horizontal spread of the virus (Graham EA. et al., 2000)

False teeth extraction (natal or neonatal) is a procedure in which the unerupted canine follicles are excised using sharp instruments without anesthesia. The procedure is done in the first year of life (Barzangi et al., 2014; Johnston & Riordan, 2005). It is performed by traditional healers to prevent or treat persistent high fever, vomiting, prolonged or excessive diarrhea, itching gum, crying with unknown cause, and failure to suckle (Barzangi et al., 2014; Garve et al., 2016; Graham et al., 2000; Hodes, 1997; Johnston & Riordan, 2005; Mutai et al., 2010). The prevalence of this practice varies among countries and is mainly practiced in East Africa (Kenya, Uganda, Tanzania, South Sudan, Ethiopia, Somali, Brundi, Rwanda), Central Africa (DRC and Chad), West Africa (Congo, Cameroon) and neighboring Arabian countries flowing into Egypt (Barzangi et al., 2014; Garve et al., 2016; Graham et al., 2000; Hodes, 1997; Johnston & Riordan, 2005; Mutai et al., 2010). The practice has been linked to risk of blood borne infections such as HIV (Barzangi et al., 2014; Garve et al., 2016; Graham et al., 2000; Nuwaha et al., 2007). The false teeth are removed by a traditional practitioner using unsterile knives, wires, sharpened bicycle spokes, finger nails and blades which predisposes the infants to serious complications such as profuse bleeding, HIV infections, swelling and sepsis of the gum wounds that may lead to death (Graham E.A. et al., 2000)

1.1.3 Mechanism of HIV transmission through uvulectomy and false teeth extraction

A practitioner performs the procedure (Uvulectomy or false teeth extraction) on several successive children in a short period of time using the same unsterile instruments. These practices are common in areas of Kenya, like Kisumu County, where nearly a third of pregnant mothers are documented to be HIV infected, suggesting a possible mechanism for horizontal spread of the virus as reported by Juliana Otieno, MD, International Fellow, New

Nyanza Provincial Hospital, Kenya; oral communication; April 1999 (Graham et al., 2000). These practices of uvulectomy and false teeth extraction leave open wounds in the child's mouth that are exposed to HIV viruses from the shared unsterile equipment and infected maternal breastmilk or transfer of infectious particles coated by a food bolus from pre-masticated food.

Although previous studies have demonstrated the possible association between the foregoing traditional child care practices with HIV transmission, their prevalence, predictors in mothers living with HIV and their perceived risk in HIV transmission remains unknown in Kenya. Ultimately, their perceived association with HIV pediatric infection in populations such as Kisumu County, Kenya, that bear substantial burden of HIV is not known. This study sought information on prevalence of traditional child care practices of pre-mastication, uvulectomy and false teeth extraction and risk perception of HIV transmission through the traditional child care practices among HIV infected mothers attending Jaramogi Oginga Odinga teaching and referral hospital, Kenya.

1.2 Statement of the Problem

Although there is compelling evidence linking pre-mastication, uvulectomy and false teeth extraction practices to both bacterial and viral infections including HIV infection, the prevalence and predictors of these traditional child care practices in high HIV burden regions such as Kisumu, Kenya are not known. In addition, whether HIV infected mothers perceive these practices as potential routes for HIV transmission is not known. However, these practices exist in areas like Kisumu County, where nearly a third of pregnant mothers are documented to be HIV infected, suggesting a possible mechanism for horizontal transmission of the virus (Graham et al., 2000). The main purpose of this study was to investigate HIV transmission risk perceptions and factors associated with traditional child care practices of pre-mastication, uvulectomy and false teeth extraction among HIV infected mothers attending Jaramogi Oginga Odinga Teaching and Referral Hospital, Kenya.

Although there is substantial research on the effectiveness of medical interventions for preventing HIV transmission to children, less attention has been given to the role of traditional child care practices and the perceptions of HIV infected mothers regarding transmission risks. This gap in research may lead to suboptimal health outcomes if traditional practices are not adequately addressed in prevention strategies. A study by Thomas T.K. et al. (2012) at Jaramogi Oginga Odinga Teaching and Referral Hospital reported that 2% of HIV

infection to children occurred between the ages of 6 to 24 months. These reported cases of “late” HIV transmission in children, that for a long time were attributed to breastfeeding, could possibly have been due to traditional child care practices among HIV infected mothers. This thesis investigates the following key issues: How do HIV infected mothers perceive the risk of HIV transmission to their infants through premastication, uvulectomy and false teeth extraction? What is the prevalence of premastication, uvulectomy and false teeth extraction practices among these mothers, and what are the socio-demographic factors associated with these practices?

1.3 Main Objective

To assess the perceptions of risk of HIV transmission and factors associated with traditional child care practices among HIV infected mothers attending JOOTRH, Kenya.

1.3.1 Specific Objectives

- i. To determine prevalence of traditional child care practices among HIV infected mothers attending JOOTRH, Kenya
- ii. To identify socio-demographic and cultural factors associated with the traditional child care practices among HIV infected mothers attending JOOTRH, Kenya
- iii. To determine association between the traditional child care practices and perception of risk of HIV transmission to the children among HIV infected mothers attending JOOTRH, Kenya

1.4 Research Questions

- i. What is the prevalence of the traditional child care practices among HIV infected mothers attending JOOTRH, Kenya ?
- ii. What socio-demographic factors influence the traditional child care practices among HIV infected mothers attending JOOTRH, Kenya ?
- iii. What traditional child care practices are associated with higher or lower perceived risks of HIV transmission among HIV infected mothers attending JOOTRH, Kenya?

1.5 Significance of the Study

The results of this study have shown that HIV infected mothers are engaging in traditional child care practices that expose their children to HIV, putting them at increased risk of infection with HIV hence a potential mechanism to reduce the gains from various interventions to end transmission of HIV to children. With this information, the healthcare

workers at PMTCT and HIV care clinics would be aware of these practices among their clients and the risk of possible transmission of HIV and educate them against the practices or how to practice them safely.

Understanding the intersection between traditional child care practices and HIV transmission risk perceptions is vital for improving HIV prevention efforts and health outcomes for both mothers and their infants. By highlighting the gaps between traditional practices and medical recommendations, this study aimed to provide insights that can inform the development of culturally sensitive educational programs and interventions. The findings will contribute to the body of knowledge on HIV prevention and help tailor public health strategies to better address the needs and practices of HIV infected caregivers. Information from this study would also be used to sensitize the community health workers who interact directly with HIV infected mothers on the risk of HIV transmission through unsafe traditional child care practices to give the mothers proper advice about seeking safe medical care. Healthcare workers would also use this information to sensitize traditional healers on how to offer safe traditional child care services to avoid exposing children to HIV.

1.6 Challenges

The major challenge encountered was on the duration of study. Most mothers had relocated to their rural homes because of the effects of covid-19. To mitigate this, we collected data for a longer period, 7 months instead of 2 months, to ensure we reached our target sample size.

CHAPTER TWO

LITERATURE REVIEW

2.1 Summary

This chapter describes what had been published about HIV transmission from mother to child at the time of design of this study in 2013 and the study's three secondary objectives.

2.2 HIV Transmission from Mother to Child

Globally, the number of children aged 0-14 years who are newly infected with HIV annually has declined by 56% since 2010 (WHO/UNICEF, 2016). This is largely due to provision of antiretroviral medicine to HIV infected mothers and their children. However, despite the significant progress, the number of children becoming newly infected with HIV has remained unacceptably high as noted in 2015 when the WHO estimated about 150,000 new infant infections globally each year. Over 95 percent of new infections were in resource-limited settings and occurred mostly due to MTCT (WHO/UNICEF, 2016). Breastfeeding is responsible for majority of MTCTs and the WHO therefore recommends formula feeding where it is a viable option and exclusive breastfeeding when on ART in cases where formula feeding is not a viable option (WHO/UNICEF, 2016). Non-conventional routes of HIV transmission such as pre-mastication feeding, uvulectomy and false teeth extraction have not been considered in policy and interventions.

Despite some gains in prevention of HIV transmission to Children in sub-Saharan Africa (SSA), rates of prevention of HIV transmission to Children are still high and SSA account for 90% of the world's paediatric HIV infections (du Plessis et al., 2014). In Zimbabwe, cumulative transmission rate of 17.2% at 9 months, with most transmissions occurring at 6 weeks (6.1%) and at 4 months (6.8%), have been reported (Gumbo et al., 2010). A study in Nigeria showed that if both mother and child received ARVs, the MTCT of HIV rate was 1.3% (Chukwuemeka et al., 2014). South Africa has seen new infections among children aged 0-14 years decline from 25,000 in 2010 to 12,000 in 2016. The MTCT rate was 1.3% in 2017, down from 3.6% in 2011, a reduction that put South Africa on track for eliminating MTCT (South African National AIDS Council, 2017). Transmissions from mother to child, occurring around the weaning period as a result of traditional child care practices have not been accounted for in the incidence of HIV in children in sub-Saharan Africa. Provision of triple antiretroviral therapy (ART) through pregnancy and breastfeeding period has been shown to reduce transmission rate in Rwanda to 1.8% at 6 weeks of birth, from 3.3% when single dose ART was in use (Abimpaye et al., 2018). Uganda has achieved 86% reduction in

HIV infection among children 0-14 years of age since 2009 and MTCT rate of 2.9% in 2015, meeting the global plan milestone of reducing MTCT of HIV to below 5% among breastfeeding mothers. The country recorded 3,500 new infections among children in 2015 (Uganda AIDS Commission, 2016). However, the gains in reduction of HIV transmission rates resulting from ART interventions could be potentially reduced or slowed by infections resulting from traditional child care practices that have no specific consideration in the current guidelines on HIV care and prevention.

In the period 2010-2015 the Kenya national MTCT rate declined by half from 17% to 8%. However, Kenya remains one of the four HIV 'high burden' countries in Africa (NASCO, 2016). About 6,613 new HIV infections among children aged below 15 years occurred in 2015. Kisumu County contributed to 13.7% of these infections and was second to Homa Bay County (NASCO, 2016). In 2013, the HIV transmission rates per 100,000 live births in Nyanza region was 447, while for Kisumu County was 670 transmissions per 100,000 live births, a clear indication that a child born in Kisumu County was at higher risk of HIV infection than in the rest of Nyanza region. The overall MTCT rate was 7.2% in Nyanza in 2013 (Waruru *et al.*, 2018). A study by Timothy *et al.* (2011) in Kisumu using triple ART for PMTCT reported transmission rate of 2.5% at delivery and 1.7% at 6 months. The study also reported late HIV transmissions rate of 2% between 6 and 24 months (Thomas *et al.*, 2011). The current national MTCT rate is 11.5% and that of Kisumu is 8.7% (NASCO, 2018). Since a child born in Kisumu County is at higher risk of HIV infection than the rest of the country, any possible route of infection must be well understood in order to design appropriate interventions to prevent infections. It is therefore imperative to investigate if other non-conventional routes of infection, that have been linked to HIV infections elsewhere, such as premastication feeding, uvulectomy and false teeth extraction are being practiced by HIV infected caregivers in this region and their perception on possible HIV transmissions through these routes. The findings of this study will inform appropriate interventions to revise the current PMTCT practices.

2.3 Prevalence of Premastication, Uvulectomy and False Teeth Extraction

The practice of premasticating food for children, usually during the weaning period, has been described in various parts of the world, including the United States. A study by Aditya in Latin America found that premastication feeding increased with advanced HIV disease stage and lower education level (Gaur *et al.*, 2011). According to another study in the US, 90% and

65% of black caregivers in Omaha reported knowledge about the practice and practicing it (Walburn *et al.*, 1988). The overall prevalence among a nationally distributed sample in the US was 14% (Fein *et al.*, 2008). The practice was also reported in rural Northern Thailand, Lao people's Democratic republic, Cambodia, Vietnam, Vanuatu, the Solomon Island, New Guinea, Zambia among the Bemba tribe and in Lagos Nigeria (Pelto *et al.*, 2010). In China, 63% of Chinese reported having been fed pre-masticated food. Reports also exist of the practice in Peru, Argentina and Brazil (Gaur *et al.*, 2011). In KwaZulu-Natal Province, South Africa, it was found to be practiced by 67% of mothers and 44% of fathers in both urban and rural settings (Butler *et al.*, 2010). In East Africa, it has been reported in Tanzania among the Hadza, in Uganda among the Buganda and in Kenya among the Kikuyu (Pelto *et al.*, 2010). In my personal observation, some parents in Kisumu engage in this practice during weaning to help their children with foods that are considered hard to chew for the children's developing teeth. However, there is limited publication on the proportion of those engaging in this practice in Kisumu, where HIV prevalence is high and therefore more HIV exposed children. This study has reported the prevalence of pre-mastication feeding among the participants and the possible reasons for the practice as reported in the results section.

According to a report by Johnston (2005), uvulectomy is widespread in Africa and occurs in Chad, Niger, Nigeria, Morocco, Tanzania, Kenya, Mali, Ethiopia and Sudan as well as in the Arabian Peninsula. Its prevalence varies from place to place, with 19.5% in Niger, 35% in South West Ethiopia, 78% in Northern Cameroon, between 86-90% in Ethiopia and 90% in Egypt (Johnston & Riordan, 2005). For example, it was reported in Ethiopia's Gonda province where 86% of children underwent uvulectomy by a traditional healer in the first weeks of life or when they had a respiratory tract infection (Hodes, 1997). A study at Muhimbili National Hospital in Tanzania reported that 28.7% of HIV infected children attending the paediatric HIV care and treatment center had a history of uvulectomy (Telatela *et al.*, 2007). The practice is common in Kisumu County, as reported by Juliana Otieno, MD, International Fellow, New Nyanza Provincial Hospital, Kenya; oral communication; April 1999 (Graham *et al.*, 2000). However, publications on the prevalence of uvulectomy practice in the region is limited. This study provides results on the prevalence of the practice among HIV infected mothers attending JOOTRH PMTCT clinic.

The practice of false teeth extraction has been reported in many countries. It has been reported in studies among mothers in Gonda, Ethiopia where 84.5% of them believed in extraction of milk teeth as the best way of treating diarrheal diseases; about 70% of their

children underwent the procedure from 6-10 months of age (Hodes, 1997). The practice has also been reported in Tanzania 60%, Uganda 16% and Sudan 22%. In Southern Sudan 100% of infants aged less than 18 months who were admitted to a hospital had undergone the practice (Graham *et al.*, 2000). The practice has also been reported in the Democratic Republic of Congo, Chad and Rwanda. This happened mostly during the first year of life and occasionally in children as young as 16 days old (Barzangi *et al.*, 2014). A study by Garve, (2016) reported the practice in Rwanda, Burundi and Burkina Faso among other African countries. He reported a prevalence of 5.2% in Tanzania, 70% in Juba South Sudan, 45% among the Nilotics and 22% among the Bantu of Uganda (Garve *et al.*, 2016). A study by Nuwaha 2007 reported 35% prevalence of false teeth extraction in Southwest Uganda. Sixty-seven percent of respondents performed it on their children because of prolonged or excessive diarrhea and 11% did it because of persistent high fever (Nuwaha *et al.*, 2007). In Kenya it has been reported among 87% of the Maasai who performed the practice between 4 – 18 months of age, mainly to prevent diarrhea, persistent fever and gastroenteritis (Garve *et al.*, 2016; Graham *et al.*, 2000). The Maasai community in Kenya are said to have been practicing it since 1960's on children aged 0 to 2 years (Mutai *et al.*, 2010). This practice was reported to be common in Kisumu County, by Juliana Otieno, MD, International Fellow, New Nyanza Provincial Hospital, Kenya; oral communication; April 1999 (Graham *et al.*, 2000).

2.4 Factors Associated with Premastication, Uvulectomy and False Teeth Extraction

Starting with premastication feeding, several factors have been reported to influence the practice in many countries. In the US, education level was found to be associated with premastication practice in which mothers with a high school education or less reported the practice more compared to college graduates (Fein *et al.*, 2008; Peltó *et al.*, 2010). This was because the little knowledge made them ignorant of the risk of infections that they exposed their children to through this practice. Other factors influencing premastication are; a caregiver who is the child's biological mothers, who would readily premasticate food for their children especially during the weaning period; black caregivers also more frequently reported ever premasticating food for children to help them swallow easily, while the practice decreased with increasing caregiver age at interview. Previous family history of premastication was also associated with current reasons for the practice (CDC, 2011; Ivy *et al.*, 2012). Among the Lao People's Democratic Republic, it was a traditional rural Lao practice to feed infants a wad of smoked pre-masticated glutinous rice (Peltó *et al.*, 2010). A

study in Cape Town, South Africa, 78% of caregivers interviewed reported that they gave babies pre-masticated food after they were advised by their mother, 40% reported practicing it as part of their culture, 20% as a habit and 41% as a safety measure (Maritz *et al.*, 2011) while in the same country in KwaZulu-Natal Province, residing in rural community or being female, specifically mothers and grandmothers, were reported to be highly associated with the practice (Butler *et al.*, 2010). Correlates of this practice are not well documented in Kenya, which makes it difficult to implement any interventions to control the practice for public health purposes. This study helped bridge this gap and therefore inform interventions for health promotion on this practice. The second traditional practice is uvulectomy. This practice has been associated with influence of grandparents, religious beliefs and failure of modern medicine to treat some chronic diseases or the cost of treatment using modern medicine that is seen to be unaffordable by many caregivers hence resorting to traditional healers (Johnston & Riordan, 2005). In Ethiopia, belief that uvula was the cause of oropharyngeal blockage informed the practice of uvulectomy especially among the Ethiopians of Gonda area who resorted to traditional healers to perform the cutting to correct the blockage (Hodes, 1997). Factors associated with this practice in Kisumu are not well documented. This study established the correlates of this practice among HIV infected mothers attending JOOTRH in Kisumu as shown in the results section.

The third traditional practice in this study is extraction of false teeth. Some of the factors that have been reported to influence this practice are education level of the head of household and his or her economic status. The higher the level of education, the lower the likelihood of this practice (Nuwaha *et al.*, 2007). With higher education, one becomes more knowledgeable to discern myths from facts and therefore cannot be influenced to destroy a child's gum in pretext of false teeth removal. Economic status played a role in terms of affordability of modern health care services. Those who were not able to afford modern health care services resorted to traditional healers who offered the services of false teeth extraction at minimal cost. A study by Nuwaha (2007) reported that better economic status was associated with less false teeth extraction, but did not influence the families choice on using either traditional or modern treatment for a sick member (Nuwaha *et al.*, 2007). Barzangi (2014) reported that the practice of false teeth extraction was common in rural communities and areas with political instability, conflicts, lack of social security, insufficient health care systems and decreased health education. The author adds that strong sociocultural cohesion and deep-rooted faith in traditional treatments are some of the factors associated with false teeth extraction. He

concludes by reporting that the practice is less common in communities with high literacy (Barzangi *et al.*, 2014). Among the Maasai of Kenya, Hassanali *et al.* (1995) reported that it was cultural practice to control infections and was done to children at the age of 6 months to 2 years. Those who engaged in this practice in Kisumu, did so because of the belief that it controlled (Graham *et al.*, 2000). This study established the factors associated with false teeth extraction practices among HIV infected mothers to inform health promotional messages to prevent future occurrence of the practice.

2.5 Risk of HIV transmission Associated with Premastication, Uvulectomy and False Teeth Extraction

The first practice, premastication feeding, has been linked and, in some cases, hypothesized as a potential route for vertical transmission of bacterial and viral infections. Studies by Gaur *et al.* (2009) and Labraña *et al.* (2013), linked the feeding practice to three cases of infant HIV-infection in the US and one case in Chile respectively. In China, two cases of infantile syphilis transmitted by mouth-to-mouth feeding from actively infected relatives provided compelling evidence linking the practice to nonvenereal transmission of syphilis in infancy (Zhou *et al.*, 2009). Premastication feeding has also been linked with potential risk of horizontal transmission of human herpes virus (HHV)-8 in South Africa (Dedicoat *et al.*, 2004), group A streptococci in the US (Steinkuller *et al.*, 1992), Hepatitis B Virus in China (Huang, 1990), and *Helicobacter pylori* in the US (D. N. Taylor & Blaser, 1991). In East Africa, this route of potential infection has been hypothesized for Epstein-Barr virus in Uganda and Human Herpes Virus 8 in Tanzania (Mbulaiteye *et al.*, 2003, 2006). Case studies and mechanism of transmission through this route have been discussed at the background section of this thesis. However, case studies for our region are not documented. This study has provided information on participants perception of risk of HIV transmission to their children through premastication.

The second traditional practice, uvulectomy has been reported as potential route for tetanus, meningitis and sepsis infections (Hodes, 1997). The practice has also been associated with risk of bone infection (otitis, and osteomyelitis), tetanus and is potential for HIV transmission (Johnston & Riordan, 2005). The mechanism of HIV transmission through uvulectomy has been discussed on the background section of this thesis. There is limited information on uvulectomy and HIV infection in Kenya. This study has provided information

on HIV infected mothers perception of risk of HIV transmission to their children through uvulectomy.

The third traditional child care practice, false teeth extraction has been linked to risk of blood borne infections such as HIV, tetanus, meningitis, hepatitis B, osteomyelitis, otitis and septicaemia (Barzangi *et al.*, 2014; Garve *et al.*, 2016; Graham *et al.*, 2000; Nuwaha *et al.*, 2007). The mechanism of HIV transmission through false teeth extraction has been discussed at the background section of this thesis. This is a common practice in Kisumu, but there is limited on studies on studies linking it to HIV transmission. This study has reported on HIV infected mothers perception of risk of HIV transmission to their babies. These traditional practices of uvulectomy and false teeth extraction leads to oral mutilation on the children involved. The bleeding and open wounds in the child's mouth provides a conducive environment for HIV transmission in case of exposure to the virus through breast milk or prechewed food by a caregiver who has high viral load, low immunity and oral infections.

2.6 Theoretical Framework

Theoretical framework is adapted from Health Belief Model (HBM) by Janz and Becker (1984). The Health Belief Model is a widely used theoretical framework for understanding health behavior. The HBM postulates that people will take action to prevent illness if they regard themselves as susceptible to a threat (perceived susceptibility) and believe it would have serious consequences (perceived severity). People would therefore adopt a health protective behavior because of the perceived risk of the disease. Several factors have been found to influence one's perception of risk, these include; social, cultural, economic, psychological, ethnicity, gender, partner characteristics (Ferrer & Klein, 2015). The current study adopted the HBM as a theoretical basis to understand how HIV-infected mothers perceive their risk of transmitting HIV to their infants through traditional child care practices.

In this study, Predisposing or independent variables were assessed as modifying factors (variables that influence an individual's perceptions of health risks and the subsequent health behaviors they adopt) and they comprised of cultural factors (religious beliefs, family practices, cultural norms), socio-demographic factors (maternal age, education, income, tribe, marital status, household size, child's age at exposure, number of children) and cues to action (advice or hearing from others). Exposure or underlying variables were assessed as individual perception and comprised of Risk perceptions (Possibility of infection, Risk level and Fear of infection). Outcome variables were assessed as likelihood of action (the probability that a

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Summary

This section describes the research design, the study area, study population, sample size and sampling procedures, data collection techniques and analysis, and ethical considerations.

3.2 Research Design

This was a cross-sectional study design using mixed methods approach of data collection (Explanatory sequential). Quantitative data was collected and analyzed first, followed by collection and analysis of qualitative data to help support existence of the traditional child care practices.

3.3 Study Area

This study was conducted at Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH), located at Latitude -0.08864° or $0^{\circ} 5' 19''$ South and Longitude 34.7714° or $34^{\circ} 46' 17''$ East in Kisumu Central sub-County, Kisumu County. The study was conducted from June 2021 to January 2022. The JOOTRH is the regional teaching and referral hospital, with one of the largest number of PMTCT clinic attendance in Kisumu, Kenya. The facility was purposively selected because its chief executive officer at the time, Dr Juliana Otieno, had reported that there were mothers in the area who were engaging in traditional child care practices and therefore possibly exposing their infant to HIV (Graham et al., 2000). The health facility also provided an ideal setting for the study because it provided a target population of HIV infected mothers enrolled in a program aimed at preventing HIV transmission to children, so this study would raise no HIV related stigma as would happen in the community. However, the prevalence, HIV transmission risk perceptions and correlates of these practices were not well documented. This study was therefore designed to investigate and document the extent of the practices, correlates and whether those engaged in the practices understood the potential risk of HIV transmission through the practices. Therefore, the facility provided the best site to conduct this study in Kisumu because of the population. Kisumu County was also the second largest contributor, after Homa Bay County, to the national prevalence of children with HIV, HIV incidence, orphans and deaths related to HIV (NASCO, 2018). The county had about 9,439 children living with HIV, 616 new infections and 369 AIDS related deaths in 2017 (NASCO, 2018). At 16.3% HIV prevalence, Kisumu was 3.4 fold higher than the national prevalence. The MTCT rate in Kisumu was 8.7% (NASCO, 2018). The information on the HIV burden in the region meant many children

were exposed to HIV and the traditional child care practices in the area suggested a possible mechanism for the horizontal spread of the virus.

3.4 Study Population

The study participants comprised of HIV-infected mothers of children aged between 12 to 18 months (age when children have already been introduced to foods other than breast milk), attending PMTCT clinic at JOOTRH. At the time of the study, an average of 100 mother-child pairs attended JOOTRH PMTCT clinic every week from Kisumu County. This comes to about 400 mother-child pairs from Kisumu County attending the PMTCT clinic per month. About 15% of them had children aged between 12-18 months, giving about 60 mother-child pairs per month who were potential for consideration. The study enrolled 216 participants out of 245 that were approached for the quantitative interviews and 22 participants for qualitative interviews.

3.4.1 Inclusion Criteria

Human immunodeficiency virus (HIV) infected mothers of children aged 12-18 months who had attended the PMCH clinic at JOOTRH at least 3 times, and were residing in Kisumu County and consented to the study, were enrolled.

3.4.2 Exclusion Criteria

Any mother who was sick or had a sick baby and therefore not able to sit through the interviews was excluded.

3.5 Sample Size Determination

3.5.1 Quantitative Sample

Sample size was calculated using the formula for sample size calculation for cross-sectional studies. This was done using the formula below (Charan & Biswas, 2013);

$$N = \frac{Z^2 P (1-P)}{e^2}$$

Where.

N- The required sample size of participants.

Z²- Confidence interval 95% (the standardized z-score or multiplier)

P- Expected proportion in population

e²- Margin of error 5%

$$N = \frac{1.96^2 \times 0.15 (1- 0.15)}{0.05^2}$$

0.05²

N = 196 (plus 10% non-respondent rate) = **216** HIV infected mother for quantitative interviews.

3.5.2 Qualitative Sample

The study planned to conduct at least 4 FGDs with about 12 participants each to provide enough data to answer the research questions. Data collection was to stop or continue depending on where thematic saturation and diversity would be reached. This would make a sample size of about 48 participants for qualitative interviews. However, data collection was stopped when thematic saturation and diversity was reached at the 3rd FGD. The FGDs had 7, 8 and 7 (a total of 22) participants. Participants were not allowed to take part in both qualitative and quantitative interviews.

3.6 Sampling Procedure

3.6.1 Quantitative Sample

Few mothers turned up for their clinic visits as most of them had relocated to their village homes due to the COVID-19 pandemic. The study consecutively approached all the mothers who turned up for their clinic visits and met inclusion criteria and asked them if they would consider participating in the study. Out of 245 mothers that were approached and asked to participate in the study, 238 accepted to participate. Of the 238 potential volunteers, 216 participated in the quantitative interviews.

3.6.2 Qualitative Sample

Out of the 238 potential volunteers who accepted to participate in the study, the last 22 participated in focus group discussions (FGDs). For the qualitative interviews, 3 audio-taped FGDs comprising 7, 8 and 7 mothers were conducted. The interviews stopped at the third FGD when information saturation occurred.

3.7 Recruitment of Study Participants

The nurses at the clinic introduced study interviewers to potential participants as they walked into the clinic. The interviewers then informed them about the study and asked of their willingness to participate. Those volunteering to be in the study were assessed to determine if they met the eligibility criteria. Volunteers who met these criteria received detailed information about the study and informed consent for participation in the study was sought.

Following the study's data collection approach of explanatory sequential, quantitative interviews were conducted first, followed by qualitative interviews.

3.8 Data Collection Instruments

Quantitative data was collected using questionnaires with semi-structured questions (Appendix IV), while qualitative data was collected through FDGs using interviewer guide (Appendix II) and audio recorder tapes.

3.9 Data Collection procedure

Two research-trained assistants were employed to collect quantitative data. They were all trained to administer the instruments verbally, in a manner that was nonjudgmental and non-suggestive for a particular response. The study was conducted between June 2021 and January 2022 at JOOTRH hospital among the enrolled mothers. After obtaining informed consent, the mothers were interviewed using the study questionnaire (Appendix IV).

Two community interviewers with experience in qualitative data collection were employed and trained to help with qualitative data collection. The two interviewers moderated the FGD discussion using an interviewer guide (Appendix II). Qualitative data was collected via 3 FGD interviews comprising 7, 8 and 7 HIV infected mothers. A theoretical saturation approach (i.e., information redundancy) necessitated that the FGDs stop because information saturation occurred. After obtaining consent, the moderator gave reasons for audio taping, how the information would be used and explained FGD ground rules. In addition to tape recording all FGDs, discussion notes were taken by trained note takers. No names or contact information was collected from participants as they only participated in one interview. A brief demographic questionnaire was administered to the participants prior to the data collection (Appendix III). Each study participant was assigned a unique study ID which was used to link information from the demographic questionnaire to the FGD interview. Data were collected via audio taped interviews. Verbatim transcription and verbatim field notes were prepared from the interviews.

3.10 Data Validity and Reliability

3.10.1 Quantitative data

The study data collection instrument was pre-tested for completeness and clarity to the respondents, by using a panel of persons who used their judgement to establish how well the measuring instrument met the accuracy and appropriateness expected. Reliability for this

study was determined using Cohen’s Kappa. Cohen’s Kappa (K) statistics is a chance-corrected method for assessing agreement (rather than association) among raters. It is defined as: -

$$K = (f_o - f_E) / (N - f_E)$$

Where f_o is the number of observed agreement raters, f_E is the number of agreements expected by chance, and N is the total number of observations. In essence, Kappa answers the following question: What proportion of values not expected to be agreements (by chance) are agreements? In our case, we sampled 26 mothers for test and retest, and we found an agreement > 90% for all the questions. (Results are shown in the tables 3.1 to 3.4 below).

Test-retest on Marital status report

Kappa statistics on marital status of the mothers if each participant had made her determination randomly (but with probabilities equal to the overall proportions), we would expect pre & post to agree on 79.7% of the marital status. In fact, they agreed on 92.3% of the marital status, or 63.9% of the way between random agreement and perfect agreement. The amount of agreement indicates that we can reject the hypothesis that they are making their determinations randomly ($p = 0.007$) (Table 3.1)

Table 3.1: 26 mothers tested & retested – Reporting Marital status

Agreement	Expected Agreement	Kappa	Std. Err.	Z	Prob>Z
92.31%	78.70%	0.6389	0.1997	3.2	0.0007

Test-retest on child's date of birth report

If each participant had made her determination randomly (but with probabilities equal to the overall proportions), we would expect pre-& post to agree on 7.8% of the date of child birth. In fact, they agreed on 100% of the date of child birth. The amount of agreement indicates that we can reject the hypothesis that they are making their determinations randomly ($p\text{-value} < 0.001$) (Table 3.2).

Table 3.2: 26 mothers tested & retested - Reporting of child's date of birth

Agreement	Expected Agreement	Kappa	Std. Err.	Z	Prob>Z
100.00%	7.69%	1.0000	0.0801	12.49	0.000

Test-retest on cutting of uvula report

If each participant had made her determination randomly (but with probabilities equal to the overall proportions), we would expect pre & post to agree on 72.2% of the cutting of uvula. In fact, they agreed on 100% of the cutting of the uvula. The amount of agreement indicates that we can reject the hypothesis that they are making their determinations randomly (p-value=0.003) (Table 3.3)

Table 3.3: 26 mothers tested & retested - Reporting cutting of uvula

	Expected				
Agreement	Agreement	Kappa	Std. Err.	Z	Prob>Z
100.00%	72.22%	1.0000	0.2887	3.46	0.0003

Test-retest on ever extracted false teeth report

If each participant had made her determination randomly (but with probabilities equal to the overall proportions), we would expect pre-& post to agree on 66.6% of the extraction of false teeth. In fact, they agreed on 91.6% of the extraction of false teeth. The amount of agreement indicates that we can reject the hypothesis that they are making their determinations randomly (p-value=0.004). (Table 3.4)

Table 3.4: 26 mothers tested & retested - Reporting Ever extracted false teeth

	Expected				
Agreement	Agreement	Kappa	Std. Err.	Z	Prob>Z
91.67%	66.67%	0.75	0.2795	2.68	0.0036

3.10.2 Qualitative data

Reliability and validity of the data collection tools was done prior to the data collection though piloting of the tools and checking the data consistency with the study objectives. The piloting of the tools was done through simulation of roles by the research assistants. Quality check was done on the transcribed data through reviewing the transcript verses the audio files before data analysis.

3.11 Measurement of Variables

3.11.1 Dependent Variables

Dependent variables were assessed as likelihood of action (the probability that a mother will engage in a specific traditional child care practice) and comprised of pre-mastication, uvulectomy and false teeth extraction. The variables were measured as Yes/No responses and used to calculate frequencies and proportions.

3.11.2 Exposure or Underlying variables.

Exposure or underlying variables were assessed as individual perception of risk and were measure as deferent levels of risk as shown in the table 3.5 below.

Table 3.5: Risk perception of HIV transmission through traditional practices

Risk Perception question	Responses
Do you think a child can get HIV infections through traditional child care practices)?	Yes
	No
	Don't know
If yes, what do you think is the risk level of HIV infection through the traditional practices?	High
	Low
	Don't know
Are you afraid about your baby/child getting HIV infected through these traditional practices?	Yes
	No
	Don't know

3.11.3 Independent Variables

Predisposing or independent variables were assessed as modifying factors (variables that influence an individual's perceptions of risks and the subsequent traditional child care practices they adopt). I this study they were categorized into three groups cultural factors (religious beliefs, family practices, cultural norms), socio-demographic factors (maternal age, education, income, tribe, marital status, household size, child's age, number of children) and cues to action (advice or hearing from others). The socio-demographic variables were measured as shown on the table 3.6 below. Cultural factors and Cues to action were measured using a 4 point Likert scales rating as shown in table 3.7 below.

Table 3.6: Socio-demographic variables

Variable	Measure
Age group in years	19-23
	24-28
	29-33
	34-38
	38+
Highest level of education attained	None/primary
	Secondary
	Post-secondary
Marital status	Single
	Married
	Once married (divorced/separated/widowed)
Child's age group in years	<1.5months
	≥ 1.5 months
Tribal affiliation	Luo
	Others
Household size	2-4
	5-7
	8-10
How many people in your household work for income	1 person
	2 +
Household monthly income	< Ksh 5000
	Ksh 5000 to 14999
	Ksh 15000 to 29999
	Ksh 30000 plus
Number of children who are alive	1-2
	3-4
	5 +

Table 3.7: Cultural factors and Cues to action for Uvulectomy, premastication and false teeth extraction

Reason	Strongly disagree 1	Disagree 2	Agree 3	Strongly Agree 4
It is done in my family				
It is a normal practice in our culture				
I was advised by a relative				
I heard about it from my friends				
To prevent or treat infection				
It is our Religious belief				
It is my habit				

3.12 Data Analysis

3.12.1 Quantitative data

Analysis was done using STATA version 16.1 (STATA Corporation, College Station, Texas, USA). The demographic characteristics of the study population was done using frequencies and proportions for categorical variables. We computed the prevalence of premastication, uvulectomy and false teeth removal.

Bivariable and multivariable logistic regression was used to analyze demographic factors associated with traditional practices (pre-mastication, uvulectomy and false teeth).

All variables significant at ≤ 0.2 or hypothesized *a priori* level in univariable analysis underwent further examination using multivariable regression model. The potential confounding effect of each covariate and two-way interactions was examined and final variable selection was obtained by applying backward elimination and retaining predictors significant at 0.05 level. Odds Ratio, P-values and 95% confidence intervals were reported. Within the generalized linear regression framework, we used a log binomial regression with a log link to estimate univariable prevalence ratios (PRs) of risk perception of transmission of HIV to children through traditional practices (prevalent cases >10%).

3.12.2 Qualitative Data

Focus Group Discussions were audio recorded with backup handwritten notes. The audio data was transcribed verbatim. The textual data was analyzed in the qualitative data analysis software Nvivo version 12. A detailed codebook was developed using a framework thematic approach (Appendix VI). Thereafter, queries were run to explore the data and generate reports. Common and recurring themes were noted.

3.13 Ethical Considerations

Initial consent to conduct the study was sought from the School of Postgraduate Studies of Maseno University (Appendix V.1) and the National Commission for Science, Technology, and Innovation (Appendix V.2) Approval of the ethical review committee of JOOTRH (Appendix V.3) was also obtained. Mothers were asked to provide consent to be interviewed (Appendix I). Research assistants were recruited from nurses and clinical officers who had completed college and were awaiting posting. They were trained on good clinical practices (obtaining consent before conducting any study procedure, participants right to withdraw from study at any point or to refuse to answer some questions) consenting process and how to

collect data using this study tools. All mothers who participated in the study were above 18 years.

3.14 Informed Consent

Participation in the study was voluntary and written informed consent was obtained from potential participants. Illiterate mothers had witnesses of their choice and they put their thumb prints as a sign of consent. The consent form described the purpose of the study, what the study involved, and the benefits and possible risks of participation and the ability to skip any question they were not comfortable answering. A copy of the consent form was given to the potential participant if she was willing to receive it.

A research assistant read the consent forms to the prospective participant during the consenting process. The prospective participant had the opportunity to ask questions and receive clarification on anything that she did not understand.

3.15 Confidentiality

Informed consent documents and data collection forms did not have participants' names but unique identifiers. Research assistants were trained on the importance of and how to maintain confidentiality. This was monitored and reinforced throughout the study by the investigator. Data were collected, cleaned, stored and analyzed by the investigator and a data analyst. The data was secured with password protected access and access was limited. Audiotapes were labelled with the FGD identification code and date of interview. No other personal identifying or demographic information was included on tape labels. Participants were identified by investigator assigned code numbers.

CHAPTER FOUR

RESULTS

4.1 Summary

This section shows the findings of the study after data analysis. It starts with the results from quantitative data that are presented in tables and figures representing the characteristics of study participants, prevalence of traditional child care practices, cultural and socio-demographic factors associated with the three traditional child care practices and risk perception of transmission of HIV to children through the three traditional care practices. The results are followed by qualitative data findings that help explain the quantitative findings.

4.2 Qualitative data results

4.2.1 Socio-Demographic Characteristics of Study Participants

The study sought to understand the distribution of different socio-demographic characteristics and divided the numbers based on whether they engaged in any of the traditional child care practice. Out of the 216 study participants recruited in the quantitative study, 65.7% (N=142) did not engage in any of the traditional child care practices while 34.3% (N=74) reported to have engaged in the practices (Table 4.1). Many participants 33.3% (N=72) fall within the 29-33 year-age bracket. Participants whose age is 38 years and above have the biggest percentage of individuals who have engaged in traditional child care practices 46.2% (N=12).

Majority of study participants are married, 85% (N=184), most of them have never engaged in traditional child care practices 64.7% (N=119). Most of the mothers have children younger than 1.5 year 93.1% (N=201) and many of the mothers have never engaged in any of the traditional child care practices 66.2% (N=133) (Table 4.1). Majority of those interviewed were from the Luo tribe 86.6% (N=187). Many of the households have between 5-7 members 52.3% (N=113). Most participants reported that only one person in their households work for an income, while the rest have two or more people working for an income 56.5% versus 43.5% (N=122 versus N=94) (Table 4.1). When asked about monthly income, majority reported that they either earn between KES 5,000 to 14,999 (37%, N=80), or between KES 15,000 to 29,999 (35.6%, N=77). Most participants have 3-4 children 52.3% (N=113) followed by 1-2 children 38.4% (N=83). More mothers who have ever engaged in traditional child care practices have between 3-4 children, 33.6% (N=38) or never went beyond primary level of education. 50.6% (N=40). The participants were also asked whether

they were afraid of missing the next meal, and majority responded that they were not 87.4% (N=188), as summarized in Table 4.1.

Table 4.1: Socio-Demographic Characteristics of the Study Population (N=216)

Variables	Practised any of the Traditional Care Practice?			P-value
	Total N (%)	No n (%)	Yes n (%)	
Total participants	216 (100)	142(65.7)	74(34.3)	
Age group in years				0.321
19-23	18(8.3)	11(61.1)	7(38.9)	
24-28	51(23.6)	39(76.5)	12(23.5)	
29-33	72(33.3)	47(65.3)	25(34.7)	
34-38	49(22.7)	31(63.3)	18(36.7)	
38+	26(12.0)	14(53.8)	12(46.2)	
Highest level of education attained				<0.001
None/primary	79(36.6)	39(49.4)	40(50.6)	
Secondary	93(43.1)	67(72.0)	26(28.0)	
Post-secondary	44(20.4)	36(81.8)	8(18.2)	
Marital status				0.149
Single	22(10.2)	18(81.8)	4(18.2)	
Married	184(85.2)	119(64.7)	65(35.3)	
Once married (divorced/separated /widowed)	10(4.6)	5(50.0)	5(50.0)	
Child's age group in years				0.410
<1.5months	201(93.1)	133(66.2)	68(33.8)	
≥ 1.5 months	15(6.9)	9(60.0)	6(40.0)	
Tribal affiliation				0.072
Luo	187(86.6)	119(63.6)	68(36.4)	
Others	29(13.4)	23(79.3)	6(20.7)	
Household size				0.175
2-4	85(39.4)	62(72.9)	23(27.1)	
5-7	113(52.3)	68(60.2)	45(39.8)	
8-10	18(8.3)	12(66.7)	6(33.3)	
How many people in your household work for income				0.354
1 person	122(56.5)	77(63.1)	45(36.9)	
2 +	94(43.5)	65(69.1)	29(30.9)	
Household monthly income				0.075
< Ksh 5000	33(15.3)	17(51.5)	16(48.5)	
Ksh 5000 to 14999	80(37.0)	52(65.0)	28(35.0)	
Ksh 15000 to 29999	77(35.6)	58(75.3)	19(24.7)	
Ksh 30000 plus	26(12.0)	15(57.7)	11(42.3)	
Number of children who are alive				0.002
1-2	83(38.4)	62(74.7)	21(25.3)	
3-4	113(52.3)	75(66.4)	38(33.6)	
5 +	20(9.3)	5(25.0)	15(75.0)	
Are afraid that you will miss next meal				<0.001
No	188(87.4)	133(70.7)	55(29.3)	
Yes	27(12.6)	8(29.6)	20(70.4)	

Table 4.1 Showing summary distribution of socio-demographic characteristics based on ever or never engaged in traditional child care practices. Table shows total population size (N),

sample size (n), and percentages (%). Bold *P*-values represent statistical significance, considered at $P < 0.05$. *P*-value in this table is used to show association, but not the direction of the association.

4.2.2 Prevalence of Traditional Child Care Practices

The study's first objective was to find out the prevalence of traditional child care practices amongst HIV-infected mothers attending JOOTRH. Of the three practices, pre-mastication, uvulectomy, and false teeth extraction, the latter is the most prevalent 21.8% (N=47). Out of 204 participants who responded to pre-mastication question, 8.8% (N=18) reported practice it. Of the 215 participants who gave a response for uvulectomy, 14.9% (N=32) have practiced uvulectomy. Finally, of the 216 participants who responded to extraction of false teeth, 21.8% (N=47) practice it (Table 4.2). None of the traditional child care practices show association with marital status.

Table 4.2: Prevalence of Premastication, Uvulectomy and False Teeth Extraction Practices by Marital Status*

	Total(N)	Single n(%)	Married n(%)	Once married n(%)	<i>p</i>-value
Premastication					0.8
No	186(91.2)	18(94.7)	161(91.0)	7(87.5)	
Yes	18(8.8)	1(5.3)	16(9.0)	1(12.5)	
Uvulectomy					0.111
No	183(85.1)	22(100.0)	153(83.6)	8(80.0)	
Yes	32(14.9)	0(0.0)	30(16.4)	2(20.0)	
Extract false teeth					0.062
No	169(78.2)	19(86.4)	145(78.8)	5(50.0)	
Yes	47(21.8)	3(13.6)	39(21.2)	5(50.0)	

Table 4.2 showing total population size (N), sample size(n), and percentage of participants practicing different traditional child care methods. The table also shows a summary of this distribution within different marital status, and the association (*P*-value) of these practices. *P*-value used to show association, but not direction of association

*Data from those who responded to questions on specific traditional practices only.

4.2.3 Socio-Demographic Factors Associated with Traditional Child Care Practices

Multivariate regression analysis was used to determine the association between different socio-demographic characteristics and traditional child care practices. Results show that with 19-23 age-group participants as the reference population, the overall odds of traditional child care practices increased with age (Table 4.3), however it only remained significant among

mothers aged 24-28-years age-group (OR=0.41, $P=0.022$) who were less likely to engage in the traditional practices. Education level also shows an association with traditional child care practices. Using none or primary education level as a reference, probability of engaging in the traditional child care practices decreased with higher level of education. Post-secondary education level was significantly associated with less likelihood of the practices (OR=0.39, $P=0.049$). Results also show that participants who had been married before (Divorced, separated or widowed) were almost three times more likely to practice pre-mastication, uvulectomy or false teeth extraction compared to single participants (OR=2.96, $P=0.049$). Another notable result is that individuals with more than five children were three times more likely to engage in the traditional child care practices compared to those with between 1 to 2 children (RR=2.96, $P<0.001$). Additionally, participants who were afraid of missing the next meal were also significantly, 2.41 times, more likely to engage in the traditional practices compared to those who were not afraid of missing the next meal (OR=2.41, $P<0.001$). These results are summarized in Table 4.3 below.

Table 4.3: Socio-Demographic Factors Associated with Premastication, Uvulectomy and False Teeth Extraction Practices

Variable/Factor	Total (n%) No	Total (n%) Yes	OR 95% CI	P-value	OR (95% CI)	P-value
Mothers' Age group in years						
19-23	11(61.1)	7(9.5)				
24-28	39(76.5)	12(16.2)	0.61 (0.28 - 1.30)	0.197	0.41 (0.19 - 0.88)	0.022
29-33	47(65.3)	25(33.8)	0.89 (0.46 - 1.73)	0.737	0.55 (0.27 - 1.11)	0.094
34-38	31(63.3)	18(24.3)	0.94 (0.48 - 1.88)	0.871	0.54 (0.27 - 1.11)	0.098
38+	14(53.8)	12(16.2)	1.34 (0.39 - 4.57)	0.633	0.82 (0.40 - 1.68)	0.599
Highest level of education attained						
None/primary	39(49.4)	40(54.1)				
Secondary	67(72.0)	26(35.1)	0.55 (0.37 - 0.82)	0.003	0.71 (0.47 - 1.06)	0.138
Post-secondary	36(81.8)	8(10.8)	0.36 (0.18 - 0.70)	0.003	0.39 (0.19 - 0.77)	0.049
Marital status						
Single	18(81.8)	4(5.4)				
Married	119(64.7)	65(87.8)	1.94 (0.78 - 4.83)	0.152	2.02 (0.79 - 5.12)	0.138
Once married (divorced /separated /widowed)	5(50.0)	5(6.8)	2.75 (0.93 - 8.13)	0.067	2.96 (1.01 - 8.74)	0.049
Child Age group in years						
<1.5months	133(66.2)	68(91.9)				
≥ 1.5 months	9(60.0)	6(8.1)	1.18 (0.62 - 2.27)	0.614		
Tribal affiliation						
Luo	119(63.6)	68(91.9)				
Others	23(79.3)	6(8.1)	0.57 (0.27 - 1.19)	0.135		
Household size						
2-4	62(72.9)	23(31.1)				
5-7	68(60.2)	45(60.8)	1.47 (0.97 - 2.23)	0.069		
8-10	12(66.7)	6(8.1)	1.23 (0.59 - 2.59)	0.582		
How many people in your household work for income						
1 person	77(63.1)	45(60.8)				
2 +	65(69.1)	29(39.2)	0.84 (0.57 - 1.23)	0.360		
Household monthly income						
< Ksh 5000	17(51.5)	16(21.6)				
Ksh 5000 to 14999	52(65.0)	28(37.8)	0.72 (0.45 - 1.15)	0.167		
Ksh 15000 to 29999	58(75.3)	19(25.7)	0.51 (0.30 - 0.86)	0.212		
Ksh 30000 plus	15(57.7)	11(14.9)	0.87 (0.49 - 1.55)	0.640		
Number of children who are alive						
1-2	62(74.7)	21(28.4)				
3-4	75(66.4)	38(51.4)	1.33 (0.85 - 2.09)	0.218		
5 +	5(25.0)	15(20.3)	2.96 (1.89 - 4.64)	<0.001		
Are you afraid that you will miss next meal						
No	133(70.7)	55(74.3)				
Yes	8(29.6)	20(25.7)	2.41 (1.73 - 3.35)	<0.001	2.41 (1.47 - 3.96)	<0.001

Table 4.3 showing the Odd Ratio (OR), 95% Confidence Interval (CI) and *P*-value for association between the demographic characteristics of participants and use of traditional child care practices. Significance considered at *P*<0.05. The first category in each demographic characteristic is used as the reference category in the analyses.

4.2.4 Cultural and Cues to Action Factors Associated with Traditional Child Care Practices

Cultural and cues to action factors associated with the traditional child care practices are discussed in tables 4.4 to 4.6 below. The data is only for those who reported to have ever engaged in the specific traditional practices. Since the numbers were low and some levels did not have responses, the responses were merged into two point Likert scale levels, agreed and disagreed and the results are shown in Figure 4.1.

Table 4.4: Cultural and Cues to Action Factors Associated with the Practice of Premastication*

	Strongly disagree	Disagree	Agree	Strongly Agree
Pre-chewing is done in my family	4(1.9)	12(5.6)	0(0)	2(0.9)
Pre-chewing is a normal practice in our culture	3(1.4)	10(4.6)	2(0.9)	3(1.4)
I was advised to pre-chew by a relative	4(1.9)	11(5.1)	1(0.5)	2(0.9)
I heard about cutting of uvula from my friends	0(0)	12(66.7)	1(5.6)	5(27.8)
To prevent or treat infection	1(0.5)	8(3.7)	1(0.5)	8(3.7)
It is our religious belief	6(2.8)	12(5.6)	0(0)	0(0)
Pre-chewing is my habit	4(1.9)	5(2.3)	7(3.2)	2(0.9)

*Note: Table 4.4 data from 18 participants who ever practiced premastication

Table 4.5: Cultural and Cues to Action Factors Associated with the Practice of Cutting of Uvula*

	Strongly disagree	Disagree	Agree	Strongly Agree
Cutting of uvula is done in my family	5(2.3)	18(8.3)	4(1.9)	5(2.3)
Cutting of uvula is normal practice in our culture	6(18.8)	18 (56.3)	4(12.5)	4 (12.5)
I heard about cutting of the uvula from a friend	1(3.1)	7(21.9)	13(40.6)	11(34.4)
I was advised to cut the uvula by a relative	5(15.6)	18(56.3)	4(12.5)	5(15.6)
Cutting of uvula helps prevent or treat infection	0(0)	1(0.5)	17(7.9)	14(6.5)
It is our religious belief	12(5.6)	19(8.8)	1(0.5)	0(0)
Cutting uvula is my habit	3(1.4)	20(9.3)	8(3.7)	1(0.5)

*Note: Table 4.5 data from 32 participants who ever practiced uvulectomy

Table 4.6: Cultural and Cues to Action Factors Associated with the Practice of Removal of False Teeth*

	Strongly disagree	Disagree	Agree	Strongly Agree
Removal of false teeth is done in my family	6(2.8)	20(9.3)	11(5.1)	10(4.6)
Removal of false teeth is a normal practice in our culture	1(0.5)	27(12.5)	7(3.2)	12(5.6)
I heard about removal of false teeth from my friends	2(0.9)	15(6.9)	16(7.4)	14(6.5)
I was advised to remove false teeth by a relative	10(4.6)	20(9.3)	6(2.8)	11(5.1)
Removal of false teeth helps prevent/treat diseases	2(0.9)	4(1.9)	22(10.2)	19(8.8)
Removal of false teeth is our religious belief	16(7.4)	29(13.4)	2(0.9)	0(0)
Removal of false teeth is my habit	11(5.1)	24(11.1)	7(3.2)	5(2.3)

*Note: Table 4.6 data from 47 participants who ever practiced extraction of false teeth

The cultural and cues to action reasons behind the participants’ engaging in traditional child care practices are varied. Figure 4.1 below summarizes data from tables 4.4 to 4.6 since the numbers were low and some levels had no responses. Majority (81%) of the respondents stated that the practices helped to prevent their children from getting diseases (Figure 4.1). Fifty-seven percent said they engaged in the practice because they heard about them from their friends. Between 30% to 32% said they were practiced in their families, or the practices were normal in their culture, or they were advised by a relative, or it was their habit (Figure 4.1).

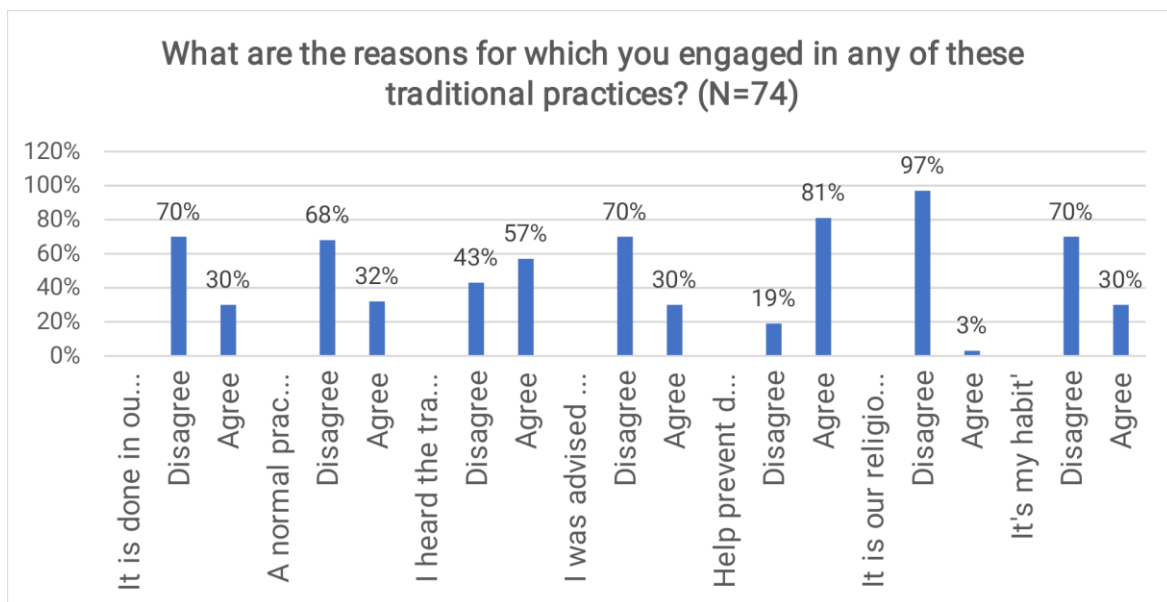


Figure 4.1: Figure showing percentage of participants who agree or disagree with different reasons for engaging in traditional child care practices.

*Data from 74 participants who ever engaged in the 3 traditional child care practices

4.2.5 Risk Perceptions of Transmission of HIV to Children Through Traditional Child Care Practices

The study also sought to understand the risk perceptions of HIV-infected mothers pertaining to the transmission of HIV to their children through traditional child care practices. When asked whether they thought a child could contract HIV through the traditional practices, majority, 71.3% (N=154), responded “Yes”, 23.1% (N=50) responded “I don’t know”, and the least, 5.6% (N=12) responded “No”. Those who responded “Yes” to the possibility of transmission were asked whether they thought the risk level of infection through the traditional practices was high or low. Majority, 89.6% (N=138) of participants stated that the risk was high, 7.1% (N=11) said that it was low, while 3.7% (N=3) said they did not know. Finally, they were asked whether they were afraid about their child contract HIV through the traditional child care practices. Majority, 70.1% (N=108) responded “Yes”, 25.9% (N=40) responded “I don’t know”, while 3.9% (N=6) responded “No” (Table 4.7). Of the mentioned perceptions, paradoxically, proportion of participants engaging in traditional practices was lower among those reporting low risk of HIV infection through traditional practices compared to those who said the risk was high (PR=0.93, $P=0.03$) (Table 4.7). Proportion of mothers who engaged in traditional child care practices was more than 4-fold greater among those who do not know whether they are afraid about a child getting infected with HIV through the traditional child care practices compared to those who said they are afraid of a child getting infected through the traditional child care practices (PR=4.27, $P<0.001$) (Table 4.7).

Table 4.7: Risk perceptions of transmission of HIV to children associated with pre-mastication, Uvulectomy and false teeth extraction practices.

Risk Perception	N (%)	PR	95% CI	P-value
Do you think a child can get HIV infections through these three traditional practice?				
Yes	154(71.3)			
No	12(5.6)	0.66	(0.24 - 1.81)	0.423
Don't know	50(23.1)	0.69	(0.41 - 1.15)	0.155
If yes, what do you think is the risk level of HIV infection through traditional practices				
High	138(89.6)			
Low	11(7.1)	0.93	(0.87 - 0.99)	0.033
Don't know	5(3.3)			
Are you afraid about a baby/child getting HIV infected through traditional practices				
Yes	108(70.1)			
No	6(3.9)	1.74	(0.35 - 8.64)	0.493
Don't know	40(25.9)	4.27	(2.45 - 7.45)	<0.001

Table 4.7 showing the distribution of participants in numbers (N) and percentage (%) based on different risk perceptions of transmission of HIV to children through of traditional child care practice. Table also shows association of these perceptions with engagement in traditional practices, displaying the Prevalence Ratio (PR), 95% confidence Interval (C.I.) and *P*-value for significance. Significance considered at $P < 0.05$.

4.3 Qualitative results

4.3.1 Introduction

Qualitative data collection was performed after completion of quantitative data collection. Three Focus Group Discussion (FGDs) were held with mothers seeking services at Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH) Prevention of Mother-to-Child Transmission of HIV (PMTCT) clinic. Identification and initial contact of the respondents was done by the hospital nurse in charge of the PMTCT clinic, who then introduced the study team to the potential participants.

Written consent was obtained from the respondents before data collection. The focus group discussions were held in January 2022 in a conducive private room within the clinic. The

demographic characteristics of the respondents were taken in terms of age, education background, religion, occupation and marital status and recorded in a demographic questionnaire (Appendix III). The youngest respondents were 21 Years old with the oldest at 44 Years old. Majority were between the ages of 22 years and 32 years. Majority of the respondents had post-secondary education.

Two trained qualitative research assistants facilitated the three focus group discussion using the interviewer's guide (Appendix II). The Focus Group Discussions were audio recorded with backup hand written notes. The language used during the discussion was a mixture of English, Swahili and Luo. The audio data was transcribed in a verbatim form. Nvivo Version 12 was used to interpret the data through developing Thematic framework using the content in line with the study objectives. The thematic framework was used to create a code book (Appendix VI) in Nvivo 12. Coding was done on the three FGD transcripts, then queries were run to explore the data. The following is the report on the findings:

4.3.1.1 Premastication

Knowledge on premastication. Majority of the respondents shared that they were aware of the premastication practice and did not like it as it had some chances of infecting the child with HIV. However, there were few other respondents who shared that they had prechewed food for their children when they were initiating mixed feeding as they felt the baby couldn't chew the food. Premastication was done when the mother felt the baby couldn't digest the food well.

"I have done that for my baby. Because if you start doing mixed feeding, that is at 6 months, you find that maybe the baby cannot chew that food. So you chew that food first then you give the baby." FGD_001_R2_31 Years

The premastication was practiced for both gender, girls and boys even though some respondents shared that the girls' child were loved more than the boys, meaning it was a way of showing affection. This also varied with the gender of older siblings.

"Mostly I see that it is girls. You know girls are loved more than boys. So for me I have seen mostly baby girls being given that" FGD_001_R4_35 Years

Majority of the respondents shared that the mothers sometimes started premastication from the age of three months onwards with cases of premastication to up to 4 year olds. What determine this was the development of the child, there were some children who grew very

fast and at seven months they already had developed some teeth. Whereas there were some children who had complication that were related to development or they were sick thus the parents chewed food on their behalf.

“For me I have seen a child who was 4-year-old still being pre chewed for food. I mostly saw the father doing that. If he comes with sugarcane, he feels that her (child’s) teeth cannot chew the sugarcane. So, he cuts it and chews a little then gives the child. The girl was 4 years old. So, I cannot know at what age it ends. It depends on how the child is raised”
FGD_001_R4_35 Years

Premastication was done for cultural reasons when the child was being given herbal medication that s/he couldn’t be able to chew

“And then there are some drugs like the traditional herbs that they wanted the baby to take the sap. So, you would find that she chews then she gives the baby that sap that she has mixed with her saliva.” FGD_003_R2_29 Years

The types of foods that were being chewed included hard foods like groundnuts, githeri, sugarcane,

“Githeri [mixed maize and beans that are cooked together]. You find that the githeri is hard to chew for the baby, so she chews and then gives it to the baby.” FGD_002_R1_41 Years

Other reasons for premastication included making the food soft for the child so that they just swallow, when the child had not developed his/her teeth and digestive tract, when the baby wanted something to sooth the gums, when the parents wanted the child to finish his/her food faster, and the desire for the child to eat the same meal.

“Let’s say that a baby doesn’t have teeth yet, the easiest way of feeding her is the parent chewing the food and then giving the baby” FGD-002_R3_24 Years

4.3.1.2 HIV Infection and Premastication

The respondents shared that premastication could result to infecting the baby with HIV or even other gum related diseases. When the mother’s viral load was high, then she happened to have a wound in the mouth, during premastication the virus could be transmitted from the wound caused by opportunistic infection like oral thrush: to the chewed food, thus infect the baby. “It can infect the baby because let’s say for example that the parent has bleeding gums; so, that time when she’s chewing the food there will be blood that will be mixing with that food. So, when you give the child that food, you’ll have given the baby food that is mixed

with your blood. It can lead to infection.” FGD_002_R3_24 Years

In addition, some respondents felt that premastication was unhygienic.

“I feel that if you start giving the child food, s/he should chew on his/her own; at six mouths. And it is also not hygienically on the child.” FGD-001_R1_36 Years

However, there were different opinion on the risk level of HIV Infection. There were some respondents who shared that the chances of the child getting the virus through the saliva was very low, the infection was only possible when the mother had wounds in the mouth coupled with high viral load. The risk was also determined by the adherence to ARVs which results to the amount of virus in the fluid.

“According to me, transmission of HIV to the baby...I don’t think the saliva can have the virus, in my opinion. I don’t think...maybe when the mother has wounds in the mouth and is bleeding and the baby also has an opening. But for saliva, no.” FGD_001_R2_31 Years

“It is true that mothers sometimes prechew food and give to the baby. But that can be a risk and also not so much a risk.” FGD_003_R1_41 Years

Other respondents noted that it was hard to give examples of HIV infection through premastication because majority of mothers tend to keep their HIV status secret. Other respondents did not have any idea that premastication could result to HIV transmission to the child. For the respondents who had experienced cases of HIV infection through premastication, they shared that the transmission could have occurred through the open wounds in the mothers’ mouth coupled with high viral load.

“So, I have witnessed it but I didn’t know that it would have an effect in terms of HIV.” FGD_003_R2_31 Years

“I have equally never heard of such instance.” FGD_003_R1_41 Years

4.3.1.3 Perception on premastication

The respondents noted that premastication was not a good practice as it exposed the child to HIV infection. They also termed it unhygienic. However, few respondents initially felt there was nothing wrong with premastication and it was just the normal way of feeding a child.

“As I shared, me I did that. But I did not have that fear that I could infect him. I saw it as a normal thing. As something that could not infect him” FGD_001_R2_31 Years

Premastication was necessary in cases where the child was not able to feed on their own. Otherwise the practice was discouraged and majority of the respondents wanted it to come to an end.

“This practice should end because we are now an advanced population as compared to before, you find that as of now there are several options that you can use to blend food for the baby. There are several teachings that we get with regards to feeding and taking care of a baby.” FGD_003_R7_39 Years

4.3.2 Uvulectomy

4.3.2.1 Knowledge on Uvulectomy

Most of the respondents were aware of the cutting of uvula as some shared that they underwent the procedure during their childhood and got HIV infection as narrated by their parents. The main reason for cutting the uvula was when the child was having persistent cough and the respondents shared that in most cases the cough ended after the procedure.

“Mostly they take them after a child has coughed for some time. They take them for the extraction of uvula so that the cough ends” FGD_001_R1_41 Years

“It is something that is happening, I have actually taken someone to go and have it cut.” FGD_003_R5_30 Years

The cutting of the uvula was carried out when the child was aged one months onwards. However, there are some cases when the procedure was done in older children and even in adults when they exhibit longer uvula and unending cough.

“Ages are mixed there. You find adults, youths and children. For those who haven’t gone to the hospital, before they find out what has brought that cough, the first thing is you are told to go and cut the uvula. So you find that you go there to cut the uvula only to realize that later it is a TB cough. But ages are mixed; youths, adults and children.” FGD_001_R4_35 Years

Some mothers believed that the cutting of the uvula was a tradition, the moment the child begins to cough that was the only remedy they thought about.

“I have come across many that say that is the only option. They say to them it is something like a tradition, it must happen the moment the baby begins to cough. “ FGD_001_R2_31 Years

Other traditional beliefs about the uvula was that if it was not cut, it would grow very long then one might swallow it and die. When the uvula grows longer than expected the

respondents shared that it brings unending cough, which will only stop after the cutting of the uvula. Other myths include high consumption of sugar leading to the growth of the uvula,

“I stay with my grandmother and she told us that when it is not cut and it grows long; somehow, it might detach and be swallowed and when you swallow it, you might die”
FGD_002_R6_22 Years

“There are instances that I have seen that the uvula has grown quite long to the extent the baby can’t breathe well and the he/she is coughing a lot.” FGD_003_R5_30 Years

Few respondents hadn’t experienced the cutting of the uvula, but they were aware of the practice.

“I wanted to comment on the reasons for having the uvula cut; I’ve not had mine cut and I haven’t witnessed that coughing that was mentioned as a reason. So, I think it’s there but as for me I usually don’t experience it. Although it’s there.” FGD_002_R6_21 Years

The cost of cutting the ovula ranges between 150/= and 200/=. Lack of education and awareness was mentioned to be the greatest facilitator to the cutting of the uvula practice. It was noted that the current generation had access to modern health facilities services unlike the older generations that were relying on herbs. However, few respondents felt that the current challenges at the modern health facilities such as long queues can make one to resort to the traditional way of healthcare.

“So, most people stop going to the hospitals because of the queues or some other things. A long time at the queues can make someone to be discouraged from going.” FGD_002_R2_31 Years

4.3.2.2 HIV Infection and uvula cutting

Most of the tools used during the cutting of the uvula were not sterilized properly thus they could transmit the HIV virus

The respondents were aware of children who had gotten HIV infection through uvula cutting

“My son who is now 13 years old was cut here. Right now, he is positive and is taking drugs”
FGD_001_R3_44 Years

The respondents noted that the risk of getting HIV infection through the cutting of the uvula was very high especially in cases where the person conducting the procedure was not adhering to the safety measures. Some of the respondents shared that there were cases where the person conducting the procedure was drunk

“They use spirit (methylated) by the way. Cotton wool, they deep in spirit and wipe the metal and cut the next person. Let’s say he is in a hurry and forgets to take that cotton wool and the way that blood is fresh...because they tell you, ‘Open your mouth! Make it quick’ And they cut and they cut the next one. They cut mine and I’m positive, then next they cut this child’s, will s/he get or won’t she get? S/he will get. There is high risk on the uvula cutting.” FGD_001_R4_35 Years

Most of the decision on taking the child for uvula cutting was made by the grandmothers and the mother in laws. Very few instances where the parents of the child made the decision by themselves. Majority of the respondents were against the idea of uvula cutting as one ways in which the HIV virus spread was through sharing unsterilized sharp objects. In addition, apart from sterilization, the cutting of the uvula would create a wound on the child’s throat and during breastfeeding, in case the mother’s viral load was high, the breastmilk may contain the virus and the child may get infected.

“Yes. She has talked about sterilization; I don’t want to refer. Let’s say a baby has been cut for the uvula and she has not contracted HIV from that point, maybe that person has sterilized the object used. The mother is HIV positive and she has a high viral load which she hasn’t suppressed. And the virus is in the milk, the moment she is breastfeeding. there is that stubborn virus that will pass through. The virus survives in fresh blood, it cannot survive outside the body. So, this child after some months will be HIV positive.” FGD-002_R1_41 Years

“I’ve ever heard of such an instance. The case is from the area in which I live. The person is ever regretting till date. The mother, since the child is positive and yet the mother is not positive. So, from her own assessment she figures that it was from the point of having the uvula cut since there’s nowhere else that she’s messed up. The father is equally okay, but the child is positive. So, the confusion is the child had the uvula cut.” FGD_003_R3_43 Years

4.3.2.3 Perception in cutting of the uvula

According to majority of the respondents, the cutting of the uvula was a practice that should be stopped immediately as it exposed the child to HIV infection. A lot of sensitization should be done to the community members in order to discourage the practice.

“It should be stopped with immediate effect. It should be stopped with immediate effect because most of these innocent children are going through a lot of pain. You find that it’s not by their liking that they are positive, you find that their mothers are the ones who made them become positive.” FGD_001_R1_36 Years

The respondent noted that the cutting of the uvula was not necessary. There were other safe options that were available at the health facilities like the medications that could make the uvula to shrink. The health facilities could also remove the uvula safely, and the mothers

were encouraged to seek help from medical professionals if they ever wanted to cut the uvula of their children.

“I just wanted to support number 3, because there are situations that will need you have it cut. So, in a case like that, it will require you to go to a qualified person that you know will help accordingly. There is no one that you will find in the village and say that this person is qualified; it’s only in the hospital that you will find someone qualified”. FGD_003_R2_29 Years

However, few respondents felt that the cutting of the uvula was a good practice as it was one of the ways of stopping unending cough for the child

“I feel that it’s a good thing. Because at times the baby might be coughing and you don’t have the money to bring the baby to the hospital.” FGD_002_R8_30 Years

4.3.3 False teeth removal

4.3.3.1 Knowledge on false teeth removal

Majority of the respondents shared that they were aware of false teeth removal. Some of the mothers were said to be opening the child mouth in order to identify the false teeth.

The false teeth were associated with poor growth of the child in addition to the child becoming sick continuously. There were some mothers who also believed that the false teeth made the child not to breastfeed properly or even while breastfeeding the child could be producing some sound, causing fever and the child cries continuously.

“I don’t even know how to look for those things but it’s my mom that told me the baby had teeth that’s why he was not suckling. That’s why he was breathing weirdly. So we should be told what happens that makes babies sometimes not suckle. You wake up one day and the baby is not breastfeeding and is breathing that way. Because if we go to the parents, the elders, the only thing they will tell you is, ‘Go and extract the teeth, he has teeth.’ FGD_001_R4_35 Years

“There is a sister of mine whose baby had the problem of plastic teeth. The child used to cry at night and had a fever. As in he just cries. So the next day, the neighbor told her that maybe the child had a plastic tooth. And the baby was two months old. So when she took him there, it was extracted. And the baby became okay. So she believes that thing. “FGD_001_R6_29 Years

However, there was a belief that if you do not open the child’s mouth to see if there are false teeth or not, they just happen to disappear by themselves. The trick therefore the respondent felt that the mothers shouldn’t open the child’s mouth to check on the false teeth. With time the false teeth would disappear and a small hole will be left on the gums.

“I wanted to comment about ‘if you don’t check it will disappear’. My mother-in-law told me about the same that once you check the baby’s mouth and notice them, that is when the condition becomes even worse. [Laughter] she is the one who checked. That night I didn’t even sleep well because of the baby. When it got to the next day, I had to take her to have them removed. I heard that when you ignore them and do not check, they just disappear.” FGD_003_R4_28 Years

The false teeth removal was done to both genders, the girls and the boys. The age for the false teeth removal varied from children who were less than one month old to those who were about six months old.

“I have heard of a case of a baby as old as three days. You find that you will be told that the baby has false teeth and you must remove them reason being so that the baby can suckle. And the other reason is the baby has fevers, so it’s a must for them to be removed.” FGD_002_R3_24 Years

There were traditional ways of removing the false teeth. This involved mixing of herbs then dropping the sap on the identified false teeth. Some practices also involved mixing of some traditional vegetables with baking ash, and using a soft piece of cloth to rub the mixture on the identified false teeth.

“I have heard about the traditional myths. Where we are staying, when my baby had plastic teeth, one of the neighbors told me to go and get mrenda [traditional vegetable] and then I mix with baking soda, put on a clean cloth and rub it on the plastic teeth.” FGD_003_R6_27 Years

4.3.3.2 HIV Infection and false teeth removal

The removal of false teeth had very high risk of HIV infection. The respondents shared that some of the children who tested HIV negative at six weeks turned positive when tested at six months. They associated the transmission to the removal of false teeth.

“It is very high. Most of the mothers, they come to the facility and you hear, ‘My son has been tested six weeks negative.’ Six months, she took the child during that stage and has turned positive. It is very high. And it should stop.” FGD_001_R2_31 Years

Some of the respondents shared cases where they suspected that their children got HIV infection through removal of false teeth

“I have such instances with my children. That process of having them removed for the false teeth is what affected them all.” FGD_003_R7_39 Years

The HIV transmission happened mostly when the viral load of the mother was high, the virus through the breastmilk, and the child could get infected through the fresh wound caused by the false teeth removal.

“It’s true that a baby can be infected if she’s had her false teeth removed. It leaves a wound at the point of extraction and it will depend on the viral load of the mother. If she has a high viral load; there’s a high risk of her infecting the baby.” FGD_003_R1_32 Years

Some respondents related rate of the HIV infection through the removal of false teeth to be as high as the rate of HIV infection through the cutting of the uvula.

“I think a baby can be infected because the way that it’s done is the same way that cutting of the uvula is done.” FGD_002_R6_21 Years

4.3.3.3 Perception on false teeth removal

Most of the respondents were against the idea of false teeth removal, as it exposed the children to HIV. Alternative solutions that were suggested included visiting the health facilities for medical advice.

“On my side I really do fear that thing. Even if mine had it, I was just quiet with it. Somebody told me to go and I told them, ‘No, I know that if I take them there, I will infect them.’ So I really didn’t want that. So the only thing is that I came to the facility and took him to dental and they told me those things would just disappear.” FGD_001_R2_31 Years

Few respondents were keen to note that the false teeth existed, and that was the reason the medical interventions such as the teeth gel and Ashton powder were recommended. In addition, the respondents shared that the idea of false teeth removal was good, so long as the procedure was safe and the child didn’t get any infection.

“I have a question in my answer. I feel like this: it is really easy for the teeth to be there. Why do I say that? Because if you go to the pharmacy, you will find that tooth gel. Why is it there? Doctors knew that those teeth would come out. Or that Ashton powder. So even if we are stopping it because it has harmful effects, when mothers go to the hospital they should be given that Ashton powder and that tooth gel.” FGD_001_R4_35 Years

There was a myth that if the false teeth weren’t removed they would bring a negative effect on the child and in some cases the child may die. The reason why majority of the mothers preferred the non-medical way of removing the false teeth was because unlike the health facilities, the places for false teeth removal had no queue and long processes to be taken before one sees the health provider in addition to cheaper cost of services. Some respondents

said that some dentist turn the mothers away once they (Mothers) reported the identification of the false teeth.

“I would also want to agree with her, it is cheap; you end up using 100 shillings or 200 shillings. [Laughter] At the hospital, you find that you need 50 shillings at one point and 300 shillings at another.” FGD_002_R1_41 Years

“She will leave there complaining that the doctor has resolved that there are no false teeth even without checking the baby’s mouth. We believe out there that the doctors believe that the false teeth are not there yet we actually see them. They apply knowledge from the books while in real life the false teeth are there.” FGD_002_R7_28 Years

4.3.4 Summary

Participants were unanimous that premastication exists and many people engage in the practice. It is done during introduction of mixed feeding to ease digestion and when giving herbal medications. Some participants reported reported knowledge of risk of HIV transmission through the practice, largely due to oral infections and exposure to infected breast milk

HIV Infection through the cutting of the uvula is associated with improper sterilization and during breastfeeding because of the open wounds. The procedure was said to cut across all ages and is believed to be a cure of constant coughs. Removal of false teeth was said to be done under the influence of other family members especially the mother in laws and could also lead to HIV infection through unsterilized objects and during breast-feeding if the mother had a high viral load. Majority of the respondents believed the false teeth exists and that’s the reason there is modern remedies for them like using Ash powder.

CHAPTER FIVE

DISCUSSION

5.1 Summary

Traditional child care practices such as premastication, uvulectomy and false teeth extraction are still being practiced to date as clearly demonstrated in this study by HIV infected mothers hence possibly slowing the gains made in interventions to prevent HIV transmission especially from mother to child. This section discusses the results from the study findings as compared to other publications and reports on the same practices.

5.2 Prevalence of Traditional Child Care Practices of Premastication, Uvulectomy and False Teeth Extraction

This study shows that false teeth extraction was the most prevalent traditional child care practice among the study population, HIV infected mothers attending JOOTRH PMCT clinic. This was followed by uvulectomy and premastication in that order. The largest proportion of participants who reported to have ever engaged in any of the traditional practices had the lowest level of education or were once married or had at least 5 live children or were afraid of missing the next meal. This signified ignorance, influence by family members and friends and poverty among those who engaged in the traditional child care practices.

Findings on prevalence of the traditional child care practices of premastication, uvulectomy and false teeth extraction are like those in many other studies. The practice of false teeth extraction has been reported in Uganda, The Democratic Republic of Congo, Chad, Rwanda, Burundi and Burkina Faso (Barzangi *et al.*, 2014; Garve *et al.*, 2016). In Uganda, the practice was most prevalent among Nilotic tribes and the Bantu (Tirwomwe *et al.*, 2013). In Kenya it has been reported among the Maasai mainly to prevent diarrhea, persistent fever and gastroenteritis (Garve *et al.*, 2016; Graham *et al.*, 2000). This practice was mainly informed by ignorance due to limited education and influence by relatives and friends who would possibly advise the mothers on the traditional child care practice. The practice has been believed to treat early signs of diseases such as swollen and irritable gums in a newborn child, fever, diarrhea, and malnutrition. The practice is carried out by traditional healers, who are usually the first line of consultation for most mothers in rural areas and use unsterile cutting tools such as fingernails, broken glass, scissors, bicycle spokes, or knitting needles.

The second most prevalent traditional child care practice in the current study is uvulectomy. This practice, like false teeth extraction, was also possibly informed by ignorance due to limited education and influence by relatives and friends who advise the mothers on cutting of uvula as a child care practice. A study by Johnston, (2005) reported that the practice was widespread in several African countries including Nigeria, Ethiopia, Sudan, Mali, Chad, Niger, Morocco, Tanzania, and Kenya for children under 5 years (Johnston & Riordan, 2005). Uvulectomy is practiced for treatment of consistent respiratory tract infections, growth retardation, diarrhea, vomiting, fever and coughing. It was performed by traditional healers who are the first line of consultation for most mothers in areas where this practice is common. They use unsterile cutting tools that expose their clients to infections and possibly even HIV.

Premastication is the least prevalent of the three traditional child care practices assessed in this study. This is largely practiced because of ignorance and poverty. Those with little education were not informed of the health implications of feeding a child pre-masticated foods, so they practiced it thinking that they were helping to make the food soft for their children to just swallow. Poverty also plays a role in this practice as most of the mother who engaged in it stated that they cannot afford to blend or mash the foods because the equipment required are unaffordable.

The practice has had global distribution in past years including the U.S., Latin America, Asia and Africa. In the U.S. the practice was common among black caregivers in Omaha. The people were relatively poor, had little education and practiced pre-mastication as part of their culture (Walburn et al., 1988). Interestingly, a South African study found that mothers and fathers in both urban and rural settings carried out pre-mastication for their children (Butler *et al.*, 2010). In 2010, a study reported the practice among the Baganda of Uganda and the Kikuyu of Kenya (Pelto *et al.*, 2010). The practice was influenced by family members, parents and parents-in-law, poverty and less than secondary level of education as the major reasons that pre-mastication feeding was practiced in these regions.

5.3 Cultural and Socio-Demographic Factors Associated with Traditional Child Care Practices of pre-mastication, uvulectomy and false teeth extraction

In the current study, age and level of education were protective of the traditional child care practices with ages between 24-28 years having the lowest odds of engaging in the traditional

child care practices compared to other age groups and post-secondary education having the lowest odds of engaging in the practices compared to primary level or no education. The age group of 24-28 years are largely of fresh college graduates who are well informed and unlikely to be influenced by unhealthy cultural beliefs and practices. This age group is also just starting families or are single and expected to mostly have between 1 and 2 children if any, that are easy to manage in terms of feeding and care, so they would most likely use the modern child care practices. In terms of education, post-secondary education means the participants were more knowledgeable and informed on good child care practices and therefore made informed choices with less influence from culture.

A study done in the United States showed that increase in mother's age reduced the likelihood to practice pre-mastication of food for their infants (Fein *et al.*, 2008). This was contrary to our finding where age was not significantly associated with the traditional child care practices, save for ages 24-28 that were found to have lower odds of engaging in the practices. However, a similar finding to our results on age was reported in a South African study where pre-mastication feeding was considered old fashioned, therefore, less popular among younger mothers (Pelto *et al.*, 2010). This could be because as time advances, traditional practices have become less popular and younger mothers believe in hospital-based care rather than traditional care.

Education is another significant predictor of traditional care practices where less education increased the likelihood of engaging in the traditional practices. This result is in line with results from other studies that have shown that higher education level for the caregiver or head of the household is related to less engagement in traditional child care practices. For instance, in the U.S., mothers who had attained college education were less likely to pre-masticate food for their children compared to those who attained high school education (Fein *et al.*, 2008). Another study showed that the higher the level of education of the head of the household, the lower the likelihood of false teeth extraction (Nuwaha *et al.*, 2007). Taylor (2008) also showed that increased education of the mothers reduced the probability of practicing uvulectomy in children (F. Taylor, 2008). A different study found that, increased literacy reduced the likelihood of traditional care practices (Barzangi *et al.*, 2014).

On the other hand, marital status and fear of missing the next meal were significantly associated with engagement in traditional child care practices, where those who were once married had more than two-fold likelihood of engaging in the practices compared to those

who were single. Those who were afraid of missing the next meal were also more than two-fold likely to engage in the practices compared to those who were not afraid of missing the next meal.

Marital status was also significantly associated with engaging in traditional child care practices. Married or once married mothers were more likely to participate in the practices than single mothers. These results tally with those of a recent study in Tanzania that showed that mothers who had ever been married had higher likelihood to extract false teeth than single mothers (Owibingire *et al.*, 2018). This can be explained by the influence of mothers-in-law, aunties, and grandmothers on these practices. It could also be influenced by the culture and traditions of the husband's family, which influence the mother to undertake these practices on their children (Butler *et al.*, 2010; Maritz *et al.*, 2011).

Mothers who report to be afraid that they would miss the next meal were more than twice likely to engage in the traditional child care practices compared to those who were not afraid that they would miss the next meal. This measure of fear that they would miss the next meal was an indicator of poverty. Mothers who feared that they would miss the next meal were considered living in poverty. These findings concur with other studies that have found that socioeconomic status of a household influences the engagement in traditional practices, this is because those who are poor may not be able to afford alternative services to traditional child care practices. An Ethiopian study proved that high socioeconomic standards increased literacy and reduced engagement in traditional care practices (Berhan & Berhan, 2014). Nuhawa (2007) reported that better socioeconomic status of households was related with less practice of false tooth extraction (Nuwaha *et al.*, 2007). Another study showed that poverty in rural communities due to political instability, conflicts, lack of social security, insufficient care systems and decreased health education increased the practice of false teeth extraction (Barzangi *et al.*, 2014).

Cultural beliefs play a role in influencing maternal choices of child care practices. Majority of the respondents believed that the traditional child care practices of extraction of false teeth, uvulectomy and premastication of food helped to prevent their children from getting diseases. They believed that false teeth were associated with poor child growth in addition to the child becoming sick continuously and, in some cases, made children not to breastfeed properly, it is also believed to cause fever, diarrhea and make a child to cry continuously. The extraction of false teeth was done to prevent or treat such condition. Similar findings have been reported

in other areas, in South West Uganda it was performed on children because of prolonged or excessive diarrhea and persistent high fever (Nuwaha *et al.*, 2007). In Kenya it has been reported among the Maasai who performed the practice mainly to prevent diarrhea, persistent fever and gastroenteritis (Garve *et al.*, 2016; Graham *et al.*, 2000).

Uvulectomy is mainly carried out when a child was having persistent cough as a means of treatment. Some mothers believe that the cutting of uvula is a tradition and that the moment a child began to cough, that is the only remedy. Similar findings were reported in Ethiopia where belief that uvula is the cause of oropharyngeal blockage informed the practice of uvulectomy especially among the Ethiopians of Gonda area to treat such conditions (Hodes, 1997). The least practiced child care practice, premastication, is done to children to make the food soft for them to just swallow. Premastication is also practiced as a means of administering herbal medicines to the children. We find similar report among the Lao People's Democratic Republic, where it is a traditional rural practice to feed infants a wad of smoked pre-masticated glutinous rice (Pelto *et al.*, 2010). Like in our finding, this is done to make the food soft for the children to swallow.

These results are evident that Kenyan care systems need to consider demographics of the community while deciding on policy. These traditional child care practices have shown to increase the risk of mother-to-child HIV transmission. Therefore, thorough education interventions should be deployed while considering these populations that significantly influence the use of traditional care methods. For instance, in the case of JOOTRH HIV+ mothers with secondary education and lower level, married and those in poverty are more susceptible to the use of traditional care methods. Caregiver education should be beefed up for these populations to create a proper understanding of the risks of these practices, especially in transmission of HIV to their children. Additionally, incentives, such as free child care for these populations can be implemented to avoid their reliance on traditional healers who use dangerous methods to implement traditional care practices. Child protection laws should also be enforced in these populations and institutions to ensure the health of infants and toddlers is safeguarded.

5.4 Risk perceptions of Transmission of HIV to Children Associated with Traditional Child Care Practices of Premastication, Uvulectomy and False Teeth Extraction

For the final objective to understand the risk perceptions of HIV transmission, the study found that majority of participants are aware of the risk of transmission of HIV to their

children through these traditional practices, perceived the risk to be high and were afraid that a child would contract the virus through these practices. The results have also shown that proportion of mothers who engage in traditional child care practices is more than 4-fold greater among those who don't know whether they were afraid about a child getting infected with HIV through the traditional child care practices compared to those who perceive the practices as risky. This study has demonstrated that participants perceive the traditional child care practices of pre-mastication, uvulectomy and false teeth extraction as risky possible routes of transmission of HIV to their children. However, this finding is surprising because information on risky traditional care practices is not part of the PMTCT counseling guideline and we don't expect the participants to have this knowledge.

In a Kenyan urban informal settlement, Kibera slums, PMTCT services offered by the Médecins Sans Frontières mentioned the use of highly active antiretroviral therapy (HAART), short-course dual therapy, safe delivery, infant prophylaxis, replacement feeding, and exclusive breastfeeding for six months (Thomson *et al.*, 2018). Another study based in rural Kenya, in Siaya County, which is geographically close to Kisumu County, has no mention of traditional child care practices as a consideration for PMTCT. The study mentioned antenatal clinic attendance, adherence to maternal and infant prophylaxis, uptake of appropriate feeding option and reduced number of missed appointments as recommended by PMTCT methods that mothers be encouraged to adhere to (Nyandat & Van Rensburg, 2017).

This concern is evidenced by several studies that have sought to evaluate the level of understanding of HIV infected mothers about how to prevent mother-to-child transmission. In many African-based research, these traditional child care practices are not mentioned as one of the methods evaluated for knowledge level in HIV+ mothers. For example, a study in Nigeria assessed socioeconomic factors that influenced uptake of PMTCT methods. Methods highlighted included voluntary counseling and testing for pregnant mothers, early HIV diagnosis for exposed infants, access to efficacious ARVs for pregnant mothers and exposed infants, and infant feeding counseling. Feeding here was focused on avoiding breastfeeding to avoid risk of infection (Iwelunmor *et al.*, 2014). Another study carried out in Cameroon mentioned five methods of PMTCT: ARVs for the mother, delivery by caesarean section, ARVs for the newborn, avoiding breastfeeding, and avoiding mixed feeding. Yet again, no mention of avoidance of traditional child care practices (Sama *et al.*, 2017).

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusions

The findings of this study show that the traditional practices of false teeth removal, uvulectomy and premastication are still being practiced by mothers attending JOOTRH, Kisumu, Kenya. The results show that out of the three practices, the most prevalent is false teeth extraction at 21.8%, followed by uvulectomy at 14.9% then premastication at 8.8%. From the FGD participants participants reported to be aware of relatives or friends who engage in the the traditional practices or have themselves engaged in the practice. False teeth extraction was associated with poor growth, made the child not to breastfeed properly, the child produced some sound causing fever and child cried continuously. Uvulectomy was also thought to treat throat infections and coughs. Premastication was practiced to help children who could not chew food on their own. These practices have been described as potential routes for HIV transmission, however, mothers are still engaging in the practices and exposing their children. These unconventional routes of exposure, possibly slows the many interventions to prevent HIV transmission.

The study also found that the mother's age, education level, marital status, number of children alive, cultural practices, poverty, and fear of missing the next meal were factors that influence the traditional child care practices. Older age, lower education level, once married, more than 4 children, and living in poverty increased the chances of engaging in traditional child care practices. These factors are either tied to cultural practices or socio-demographic status, which have shown to be the biggest predictors of the traditional care practices.

Lastly, the study found that majority of the mothers were aware of the risk of HIV infection that traditional child care practices present. However, the proportion of mothers engaging in the traditional practices were more than 4-fold higher among those who do not know whether they are afraid of their children getting HIV infection through the traditional practices compared to those who know of the risk.

Many mothers were aware of the risk that the practices present in transmitting HIV to their children. However, it was paradoxical that a larger proportion of mothers who knew that the risk level of HIV transmission through the practices was high and were afraid of their children getting HIV infected through traditional child care practices actually engaged in the traditional practices compared to those who thought the risk was low. These findings suggest

that there is need for continuous sensitization on these practices for HIV-infected mothers to discourage engagement in tradition child care practices as a HIV prevention strategy.

6. 2 Recommendations

6.2. 1 Recommendations from The Current Study

- There is need for continuous sensitization on HIV prevention strategies including discouraging risky traditional child care practices especially among HIV infected mothers.
- Health care facilities should improve on efficiency of services to reduce on long ques and long waiting periods as this was mentioned as the motivation to seek alternative health care services.
- Community health workers should be sensitized, during their meetings or training, by health care workers at the facilities they are attached, on the risk of HIV transmission through unsafe traditional child care practices, to inform HIV infected mothers on the risks and need to seeking safe medical care.

6.2. 2 Recommendations for future studies

- There is need for a longitudinal study to ascertain transmission of HIV due to engagement in traditional child care practices.
- There is need to study the impact of health care education on reducing engagement in traditional child care practices
- There is need for similar studies in regions surrounding Kisumu so that health care policies are adjusted according to data from the whole region.

REFERENCES

- Abimpaye, M., Kirk, C. M., Iyer, H. S., Gupta, N., Remera, E., Mugwaneza, P., & Law, M. R. (2018).** The impact of “Option B” on HIV transmission from mother to child in Rwanda: An interrupted time series analysis. *PLOS ONE*, *13*(2), e0192910. <https://doi.org/10.1371/journal.pone.0192910>
- Ajibade, B. L. (2013).** Harmful Cultural Practices: Parents Perceived Effects of Traditional Uvulectomy On The under-five-children In Jigawa State, Nigeria. *IOSR Journal of Dental and Medical Sciences*, *9*(5), 08–13. <https://doi.org/10.9790/0853-0950813>
- Baggaley, R. F., White, R. G., & Boily, M. C. (2008).** Systematic review of orogenital HIV-1 transmission probabilities. *International Journal of Epidemiology*; *37*:1255–1265
- Barzangi, J., Unell, L., Söderfeldt, B., & Arnrup, K. (2014).** Infant dental enucleation: A literature review on a traditional remedial practice in East Africa. *Acta Odontologica Scandinavica*, *72*(3), 168–178. <https://doi.org/10.3109/00016357.2013.817603>
- Berhan, Y., & Berhan, A. (2014).** Reasons for persistently high maternal and perinatal mortalities in Ethiopia: Part II-Socio-economic and cultural factors. *Ethiopian Journal of Health Sciences*, *24*, 119–136. <https://doi.org/10.4314/ejhs.v24i0.11S>
- Butler, L. M., Neilands, T. B., Mosam, A., Mzolo, S., & Martin, J. N. (2010).** A population-based study of how children are exposed to saliva in KwaZulu-Natal Province, South Africa: implications for the spread of saliva-borne pathogens to children. *Tropical Medicine & International Health*, *15*(4), 442–453. <https://doi.org/https://doi.org/10.1111/j.1365-3156.2010.02474.x>
- CDC. (2011).** Premastication of food by caregivers of HIV-exposed children--nine U.S. sites, 2009-2010. *Morbidity and Mortality Weekly Report*, *60*(9), 273–275.
- Charan, J., & Biswas, T. (2013).** How to calculate sample size for different study designs in medical research? *Indian Journal of Psychological Medicine*, *35*(2), 121–126. <https://doi.org/10.4103/0253-7176.116232>
- Chukwuemeka, I. K., Fatima, M. I., Ovavi, Z. K., & Olukayode, O. (2014).** The impact of a HIV prevention of mother to child transmission program in a Nigerian early infant diagnosis centre. *Nigerian Medical Journal*, *55*(3), 204–208.
- Dedicoat, M., Newton, R., Alkharsah, K. R., Sheldon, J., Szabados, I., Ndlovu, B., Page, T., Casabonne, D., Gilks, C. F., Cassol, S. A., Whitby, D., & Schulz, T. F. (2004).** Mother-to-Child Transmission of Human Herpesvirus-8 in South Africa. *The Journal of Infectious Diseases*, *190*(6), 1068–1075. <https://doi.org/10.1086/423326>

- DiNubile, M. J. (2010).** Premastication: A Possible Missing Link? *Clinical Infectious Diseases*, 51(2), 252–253. <https://doi.org/10.1086/653681>
- du Plessis, E., Shaw, S. Y., Gichuhi, M., Gelmon, L., Estambale, B. B., Lester, R., Kimani, J., & Avery, L. S. (2014).** Prevention of mother-to-child transmission of HIV in Kenya: challenges to implementation. *BMC Health Services Research*, 14(1), S10. <https://doi.org/10.1186/1472-6963-14-S1-S10>
- Elizabeth Glaser Pediatric AIDS Foundation. (2019).** *Innovations and Impact Toward the Elimination of Mother-to-Child Transmission in Kenya*. www.pedaids.org
- Fein, S. B., Labiner-Wolfe, J., Scanlon, K. S., & Grummer-Strawn, L. M. (2008).** Selected Complementary Feeding Practices and Their Association With Maternal Education. *Pediatrics*, 122(Supplement_2), S91–S97. <https://doi.org/10.1542/peds.2008-13151>
- Ferrer, R. A., & Klein, W. M. P. (2015).** Risk perceptions and health behavior. *Current Opinion in Psychology*, 5, 85–89. <https://doi.org/https://doi.org/10.1016/j.copsyc.2015.03.012>
- Garve, R., Garve, M., Link, K., Türp, J. C., & Meyer, C. G. (2016).** Infant oral mutilation in East Africa – therapeutic and ritual grounds. *Tropical Medicine and International Health*, 21(9), 1099–1105. <https://doi.org/10.1111/tmi.12740>
- Gaur, A. H., Dominguez, K. L., Kalish, M. L., Rivera-Hernandez, D., & Donohoe, M. (2009).** Practice of Feeding Premasticated Food to Infants: A Potential Risk Factor for HIV Transmission. *Pediatrics*, 124(2), 658–666. <https://publications.aap.org/pediatrics/article-abstract/124/2/658/72384/Practice-of-Feeding-Premasticated-Food-to-Infants>
- Gaur, A. H., Freimanis-Hance, L., Dominguez, K., Mitchell, C., Menezes, J., Mussi-Pinhata, M. M., Peixoto, M. F., Alarcon, J., Coelho, D. F., & Read, J. S. (2011).** Knowledge and Practice of Prechewing/Prewarming Food by HIV-Infected Mothers. *Pediatrics*, 127(5), e1206–e1211. <https://doi.org/10.1542/peds.2010-1902>
- Gonzalez, O. A., Ebersole, J. L., & Huang, C. B. (2009).** Oral infectious diseases: A potential risk factor for HIV virus recrudescence? *Oral Diseases*; 15:313–327.
- Graham, E. A., Domoto, P. K., Lynch, H., & Egbert, M. A. (2000).** Dental injuries due to African traditional therapies for diarrhea. *Western Journal of Medicine*, 173(2), 135–137.
- Gumbo, F. Z., Kurewa, N. E., & Kandawasvika, G. Q. (2010).** Rising mother-to-child

- HIV transmission in a resource-limited breastfeeding population. *Tropical Doctor*, 40(2), 70–73.
- Hodes, R. M. (1997).** Cross-cultural medicine and diverse health beliefs: Ethiopians abroad. *Western Journal of Medicine*, 166(1), 29–36.
- Huang, M. J. (1990).** [An epidemiological study on prevalence and risk factors of hepatitis B virus (HBV) infection in preschool children]. *Zhonghua liu xing bing xue za zhi = Zhonghua liuxingbingxue zazhi*, 11(3), 129–132. <http://europepmc.org/abstract/MED/2390775>
- Husain, A., Douglas Baker, M., Bisanzo, M. C., & Stevens, M. W. (2017).** The mortality of ill infants with false tooth extraction in a rural Ugandan emergency department. *Journal of Public Health in Africa*, 8(1), 74–77. <https://doi.org/10.4081/jphia.2017.582>
- Isa, A., Omotara, B. A., Sandabe, M. B., & Garandawa, H. I. (2011).** Parental reasons and perception of traditional uvulectomy in children. *Sahel Medical Journal*, 14(4), 210–216.
- Ivy, W. I. I. I., Dominguez, K. L., Rakhmanina, N. Y., Iuliano, A. D., Danner, S. P., Borkowf, C. B., Denson, A. P., Gaur, A. H., Mitchell, C. D., Henderson, S. L., Paul, M. E., Barton, T., Herbert-Grant, M., Hader, S. L., Pérez García, E., Malachowski, J. L., & Nesheim, S. R. (2012).** Premastication as a Route of Pediatric HIV Transmission: Case–Control and Cross-Sectional Investigations. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, 59(2).
- Iwelunmor, J., Ezeanolue, E. E., Airhihenbuwa, C. O., Obiefune, M. C., Ezeanolue, C. O., & Ogedegbe, G. G. (2014).** Socio-cultural factors influencing the prevention of mother-to-child transmission of HIV in Nigeria: a synthesis of the literature. *BMC Public Health*, 14(1), 771. <https://doi.org/10.1186/1471-2458-14-771>
- Jamieson, L. M. (2006).** Using qualitative methodology to elucidate themes for a traditional tooth gauging education tool for use in a remote Ugandan community. *Health Education Research*, 21(4), 477–487. <https://doi.org/10.1093/her/cyh073>
- Janz, N. K., & Becker, M. H. (1984).** The health belief model: A decade later. *Health Education Quarterly*. Spring;11(1):1-47. doi: 10.1177/109019818401100101. PMID: 6392204.
- Johnston, N. L., & Riordan, P. J. (2005).** Tooth follicle extirpation and uvulectomy. *Australian Dental Journal*, 50(4), 267–272. <https://doi.org/10.1111/j.1834-7819.2005.tb00372.x>

- Judy, L., Shannon, W., & Deborah, C. (2014).** Breastfeeding and HIV-Infected Mothers in the United States: Harm Reduction Counselling Strategies. *Clinical Infectious Diseases* 2014;59(2):304–9
- Labraña, Y., Alvarez, A. M., Villarroel, J., & Wu, E. (2013).** [Premastication: a new way of transmitting HIV. First pediatric case reported in Chile]. *Revista chilena de infectologia : organo oficial de la Sociedad Chilena de Infectologia*, 30(2), 221–222. <https://doi.org/10.4067/s0716-10182013000200014>
- Maritz, E. R., Kidd, M., & Cotton, M. F. (2011).** Premasticating Food for Weaning African Infants: A Possible Vehicle for Transmission of HIV. *Pediatrics*, 128(3), e579–e590. <https://doi.org/10.1542/peds.2010-3109>
- Mbulaiteye, S. M., Pfeiffer, R. M., Whitby, D., Brubaker, G. R., Shao, J., & Biggar, R. J. (2003).** Human Herpesvirus 8 Infection within Families in Rural Tanzania. *The Journal of Infectious Diseases*, 187(11), 1780–1785. <https://doi.org/10.1086/374973>
- Mbulaiteye, S. M., Walters, M., Engels, E. A., Bakaki, P. M., Ndugwa, C. M., Owor, A. M., Goedert, J. J., Whitby, D., & Biggar, R. J. (2006).** High Levels of Epstein-Barr Virus DNA in Saliva and Peripheral Blood from Ugandan Mother-Child Pairs. *The Journal of Infectious Diseases*, 193(3), 422–426. <https://doi.org/10.1086/499277>
- Mitke, Y. B. (2010).** Bloody Traditional Procedures Performed During Infancy in the Oropharyngeal Area Among HIV+ Children: Implication from the Perspective of Mother-to-Child Transmission of HIV. *AIDS and Behavior*, 14(6), 1428–1436. <https://doi.org/10.1007/s10461-010-9681-4>
- Mutai, J., Muniu, E., Sawe, J., Hassanali, J., Kibet, P., & Wanzala, P. (2010).** Socio-cultural practices of deciduous canine tooth bud removal among Maasai children. *International Dental Journal*, 60(2), 94–98. https://doi.org/https://doi.org/10.1922/IDJ_2281Mutai05
- NASCOP. (2016).** Kenya HIV estimates 2015. In *National AIDS and STI Control Programme. Ministry of Health, Nairobi.*
- NASCOP. (2018).** *Kenya HIV Estimates Report.* National AIDS and STI Control Programme. Ministry of Health, Nairobi.
- Noman, A. V., Wong, F., & Pawar, R. R. (2015).** Canine Gouging: A Taboo Resurfacing in Migrant Urban Population. *Case Reports in Dentistry*, 2015, 727286. <https://doi.org/10.1155/2015/727286>
- Nuwaha, F., Okware, J., Hannington, T., & Charles, M. (2007).** False teeth “ebiino” and millet disease “oburo” in Bushenyi district of Uganda. *African Health Sciences*, 7(1),

- Nyandat, J., & Van Rensburg, G. (2017).** Non-disclosure of HIV-positive status to a partner and mother-to-child transmission of HIV: Evidence from a case-control study conducted in a rural county in Kenya. *Southern African Journal of HIV Medicine*, 18(1), 1–10. <https://doi.org/10.4102/sajhivmed.v18i1.691>
- Owibingire, S. S., Kanya, E. R., & Sohal, K. S. (2018).** Beliefs about Traditional Uvulectomy and Teething: Awareness and Perception among Adults in Tanzanian Rural Setting. *Annals of International Medical and Dental Research*, 4(2). <https://doi.org/10.21276/aimdr.2018.4.2.de6>
- Pan American Health Organization. (2017).** *Elimination of mother-to-child transmission of HIV and syphilis in the Americas. Update 2016.* Pan American Health Organization, Washington, D.C.
- Pelto, G. H., Zhang, Y., & Habicht, J.-P. (2010).** Premastication: the second arm of infant and young child feeding for health and survival? *Maternal & Child Nutrition*, 6(1), 4–18. <https://doi.org/https://doi.org/10.1111/j.1740-8709.2009.00200.x>
- Pruhal, A., Gamatie, Y., Djakounda, M., & Huguet, D. (1994).** Traditional uvulectomy in Niger: A public health problem? *Social Science & Medicine*, 39(8), 1077–1082. [https://doi.org/https://doi.org/10.1016/0277-9536\(94\)90379-4](https://doi.org/https://doi.org/10.1016/0277-9536(94)90379-4)
- Sama, C. B., Feteh, V. F., Tindong, M., Tanyi, J. T., Bihle, N. M., & Angwafo, F. F. (2017).** Prevalence of maternal HIV infection and knowledge on mother-to-child transmission of HIV and its prevention among antenatal care attendees in a rural area in northwest Cameroon. *PLoS ONE*, 12(2), 1–13. <https://doi.org/10.1371/journal.pone.0172102>
- Sawe, H. R., Mfinanga, J. A., Ringo, F. H., Mwafongo, V., Reynolds, T. A., & Runyon, M. S. (2015).** Morbidity and Mortality following Traditional Uvulectomy among Children Presenting to the Muhimbili National Hospital Emergency Department in Dar es Salaam, Tanzania. *Emergency Medicine International*, 2015, 108247. <https://doi.org/10.1155/2015/108247>
- South African National AIDS Council. (2017).** *South Africa's National Strategic Plan for HIV, TB and STIs 2017-2022.*
- Steinkuller, J. S., Chan, K., & Rinehouse, S. E. (1992).** Prechewing of food by adults and streptococcal pharyngitis in infants. *The Journal of Pediatrics*, 120(4 Pt 1), 563–564. [https://doi.org/10.1016/s0022-3476\(05\)82483-7](https://doi.org/10.1016/s0022-3476(05)82483-7)
- Taylor, D. N., & Blaser, M. J. (1991).** The epidemiology of *Helicobacter pylori* infection.

Epidemiological Review, 13, 42–59.

- Taylor, F. (2008).** The practice of uvulectomy and related complications among children aged below 6 years in Ilemela district, Mwanza, Tanzania. *Tanzania Dental Journal*, 15(1), 10–14.
- Telatela, S. P., Matee, M. I., & Munubhi, E. K. (2007).** Seroprevalence of hepatitis B and C viral co-infections among children infected with human immunodeficiency virus attending the paediatric HIV care and treatment center at Muhimbili National Hospital in Dar-es-Salaam, Tanzania. *BMC Public Health*, 7(1), 338. <https://doi.org/10.1186/1471-2458-7-338>
- Thomas, T. K., Masaba, R., Borkowf, C. B., Ndivo, R., Zeh, C., Misore, A., Otieno, J., Jamieson, D., Thigpen, M. C., Bulterys, M., Slutsker, L., De Cock, K. M., Amornkul, P. N., Greenberg, A. E., Fowler, M. G., & Team, for the K. S. (2011).** Triple-Antiretroviral Prophylaxis to Prevent Mother-To-Child HIV Transmission through Breastfeeding—The Kisumu Breastfeeding Study, Kenya: A Clinical Trial. *PLOS Medicine*, 8(3), e1001015. <https://doi.org/10.1371/journal.pmed.1001015>
- Thomson, K. A., Telfer, B., Awiti, P. O., Munge, J., Ngunga, M., & Reid, A. (2018).** Navigating the risks of prevention of mother to child transmission (PMTCT) of HIV services in Kibera, Kenya: Barriers to engaging and remaining in care. *PLoS ONE*, 13(1), 1–20. <https://doi.org/10.1371/journal.pone.0191463>
- Tirwomwe, J. F., Agwu, E., & Ssamula, M. (2013).** The magnitude of tooth bud extraction in Uganda. *International Journal of Medicine and Medical Sciences*, 5(October), 450–455. <https://doi.org/10.5897/IJMMS09.043>
- Tungotyo, M. (2017).** Noma as a complication of false teeth (Ebiino) extraction: a case report. *Journal of Medical Case Reports*, 11(1), 112. <https://doi.org/10.1186/s13256-017-1276-5>
- Uganda AIDS Commission. (2016).** *The Uganda HIV and AIDS country progress report July 2015-June 2016*. Kampala: Ministry of Health.
- UNAIDS. (2011).** *Global plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers*. Geneva: Joint United Nations Programme on HIV/AIDS.
- UNICEF. (2017).** *Children and Aids: Statistical Update*. <https://data.unicef.org/wp-content/uploads/2017/11/HIVAIDS-Statistical-Update-2017.pdf>
- Walburn, J. N., Pergam, J. M., Perry, S. H., & Jensen, J. (1988).** Black Child Care

Practices in the Midwest. *Pediatrics*, 82(5), 789–790.
<https://doi.org/10.1542/peds.82.5.789>

Waruru, A., Achia, T. N. O., Muttai, H., Ng'ang'a, L., Zielinski-Gutierrez, E., Ochanda, B., Katana, A., Young, P. W., Tobias, J. L., Juma, P., De Cock, K. M., & Tylleskär, T. (2018). Spatial-temporal trend for mother-to-child transmission of HIV up to infancy and during pre-Option B+ in western Kenya, 2007-13. *PeerJ*, 2018(3).
<https://doi.org/10.7717/peerj.4427>

WHO/UNICEF. (2016). *Guideline Updates on HIV and Infant Feeding*.
<https://apps.who.int/iris/bitstream/handle/10665/246260/9789241549707-eng.pdf>

Zhou, P., Qian, Y., Lu, H., & Guan, Z. (2009). Nonvenereal Transmission of Syphilis in Infancy by Mouth-to-Mouth Transfer of Prechewed Food. *Sexually Transmitted Diseases*, 36(4).

https://journals.lww.com/stdjournal/Fulltext/2009/04000/Nonvenereal_Transmission_of_Syphilis_in_Infancy_by.5.aspx

APPENDICES

APPENDIX I: INFORMED CONSENT FORMS

APPENDIX I- A: ENGLISH INFORMED CONSENT FORM

TITLE OF THE STUDY:

HIV Transmission Risk Perceptions and Factors Associated with Traditional Child Care Practices among HIV+ve Mothers Attending Jaramogi Oginga Odinga Teaching and Referral Hospital, Kenya

Introduction

You are being asked to participate in a research study on **HIV Transmission risk perceptions and factors associated with traditional child care practices among HIV infected mothers** attending Jaramogi Oginga Odinga Teaching and Referral Hospital, Kenya. The purpose of this consent form is to give you information that might help you to decide whether to participate in the study or not. The study will take about three months. You are allowed to ask questions related to the study and implications on your part.

Purpose of the study

The main objective of the study is to investigate **HIV transmission risk perceptions and factors associated with traditional child care practices of pre-mastication, uvulectomy and false teeth extraction** (pre-chewing of food before feeding to the baby, which is also known as pre-mastication feeding, uvulectomy, which is cutting of uvula/kilimi and false teeth extraction, which is removal of a child's plastic teeth) **among HIV infected mothers** attending Jaramogi Oginga Odinga teaching and referral hospital, Kenya.

There is no documentation whether pre-mastication, uvulectomy and false teeth extraction are being practiced in Kenya among mothers living with HIV and their perception of risk of HIV infections to their children through these practices is not known. We would like you to help us know more about these practices in Kenya.

Risk, Stress or Discomfort

The risks of being in this study are low. Some of the questions we ask you during the interview may make you feel uncomfortable. We can skip any questions that you do not want to answer. All the information obtained will be kept private. We will not disclose your status or any information to others not involved in this study.

Benefits

You may not have a direct benefit as an individual, however your participation would benefit society by helping in providing vital information that would enhance preventive rather than treatment measures in infections transmitted through this route and inform interventions

Assurance of Confidentiality

We will keep all your information private. During the interview we will not use your name. We will assign you a study identification number. All of your records will be kept in a safe place. Only people working directly on the study will be able to look at these records. Any

reports that come out of this study will not have your name or anything that could identify you. You will receive a copy of the consent form.

Storage of data

The data will be stored in secure place and computer with password/s and will only be accessible to the investigator and supervisors. Immediately after completion of the study, the data will then be destroyed.

Voluntary Participation

Being in this study is voluntary. You do not have to answer any question that you do not want to. You are free to stop taking part in this study at any time

Costs

There is no cost to participate in this research study. It will take about 40 minutes of your time to complete the interview.

Who can participate in the study

Mothers living with HIV and their children attending postnatal clinic at JOOTRH.

Use of tape recorder (for FGDs only)

The interviewer will ask you if s/he can record the interview. You can either agree or disagree. If you agree, the interview will be tape-recorded. If you don't agree, then the interviewer will not record the interview.

Statement of Consent

I acknowledge that this consent form has been fully explained to me in a language that I understand and had the opportunity to ask questions which have been answered to my satisfaction.

I agree voluntarily to participate in this study and understand that I have the right to withdraw at any time without penalty. Participant's initials _____

OR

I do not agree to participate in this study. Participant's initials _____

Participant's name: _____

Participant's signature _____ Date: _____

Name of witness: _____

Signature of witness: _____ Date: _____

(Applies for illiterate participants only)

I have explained the purpose of this study to the volunteer, including the purpose, procedures, risks and benefits of this study. I have answered any questions she had.

Name of interviewer: _____

Interviewer's signature: _____ Date: _____

Contact: If you have questions in future, please contact study researcher John Okanda at 0722402614 or email at john_okanda@yahoo.com or Maseno University Ethics

APPENDIX I- B: SWAHILI INFORMED CONSENT FORM

TITLE OF THE STUDY:

HIV Transmission Risk Perceptions and Factors Associated with Traditional Child Care Practices among HIV+ve Mothers Attending Jaramogi Oginga Odinga Teaching and Referral Hospital, Kenya

Utangulizi

Unaulizwa kushiriki kwenye utafiti kuhusu maoni ya hatari ya uambukizi wa virusi vya ukimwi na sababu zinazohusiana na mazoea ya kitamaduni ya utunzaji wa afya ya watoto kati ya wamama walio na virusi vya ukimwi wanao hudhuria hospitali ya ualimu na rufaa ya Jaramogi Oginga Odinga, Kenya.

Kusudi ya fomu hii ya idhini ni kukupa habari ambayo inaweza kukusaidia kuamua ikiwa utashiriki katika utafiti au la. Utafiti utachukua kama miezi mitatu. Unaruhusiwa kuuliza maswali yanayohusiana na utafiti na athari kwa maisha yako.

Sababu ya Utafiti

Lengo kuu la utafiti ni kuchunguza maoni ya hatari ya uambukizi wa virusi vya ukimwi na sababu zinazohusiana na mazoea ya kitamaduni ya utunzaji wa afya ya watoto kama vile kutafuna chakula kabla ya kumlisha mtoto, kukata kilimi na kungoa meno bandia kati ya wamama walio na virusi vya ukimwi wanao hudhuria hospitali ya ualimu na rufaa ya Jaramogi Oginga Odinga, Kenya.

Hakuna chapisho kuonyesha kutafuna chakula kabla ya kumlisha mtoto, kukata kilimi na kungoa meno bandia zinafanywa nchini Kenya kati ya wamama walio na virusi vya ukimwi na maoni yao ya hatari ya uambukizi wa virusi vya ukimwi kwa watoto wao kupitia vitendo haya haijulikani. Tungependa utusaidie kujua zaidi juu ya vitendo haya nchini Kenya

Hatari, Dhiki au Usumbufu

Hatari za kuwa katika utafiti huu ni ndogo. Baadhi ya maswali tunayokuuliza wakati wa mahojiano yanaweza kufanya usisikie raha. Tunaweza kuruka maswali yoyote ambayo hutaki kujibu. Habari yote iliyopatikana itahifadhiwa kwa siri. Hatutaweka wazi hali yako au habari yoyote kwa wengine wasiohusika katika utafiti huu.

Faida

Huenda usiwe na faida ya moja kwa moja kwako binafsi, hata hivyo kushiriki kwako utafaidi jamii kwa kusaidia katika kutoa habari muhimu ambayo itaongeza kinga badala ya hatua za matibabu katika maambukizo yanayo sambazwa kupitia njia hii na kufahamisha hatua za usoni

Uhakikisho wa Usiri

Tutaweka habari yako yote kwa siri. Wakati wa mahojiano hatutatumia jina lako. Tutakupa nambari ya kitambulisho cha utafiti. Recodi zako zote zitahifadhiwa mahali salama. Watu ambao wanafanya kazi moja kwa moja kwa utafiti ndiyo wataweza kuangalia rekodi hizi. Ripoti yoyote itakoyo tokana na utafiti huu haitakuwa na jina lako au chochote kitakacho weza kuku tambulisha. Utapokea nakala ya fomu ya idhini.

Uhifadhi wa data

Data zitahifadhiwa mahali salama na kompyuta yenye nenosiri na itapatikana tu kwa mpelelezi na wasimamizi. Mara tu baada ya kumaliza utafiti, data hizo zitaharibiwa.

Ushiriki wa Hiari

Kushiriki kwa utafiti huu ni kwa hiari. Sio lazima ujibu swali lolote ambalo hutaki. Uko huru kuacha kushiriki katika utafiti huu wakati wowote.

Gharama

Hakuna gharama kushiriki katika utafiti huu. Itachukua karibu dakikazako 40 kumaliza mahojiano.

Nani anaweza kushiriki katika utafiti

Wamama wanao ishi na virusi vya ukimwi na watoto wao wanao hudhuria kliniki ya baada ya kuzaa ya JOOTRH.

Matumizi ya kinasa sauti (kwa mahojiano ya vikundi pekeyake)

Anayekuhaji atakuuliza kama anaweza kurekodi mahojiano hayo. Unaweza kukubali au kukataa. Ukikubali, mahojiano hayo yatarekodiwa kwa kinasa sauti. Usipokubali, basi anayekuhaji hatarekodi mahojiano hayo.

Taarifa ya kibali

Ninakubali kwamba fomi hii ya kibali imeelezwa kikamilifu kwangu kwa lugha ambayo ninaelewa na nikawa na nafasi ya kuuliza maswali ambayo yamejibiwa kwa kuridhika kwangu.

Ninakubali kwa hiari kushiriki katika utafiti huu na ninaelewa kwamba nina haki ya kujiondoa wakati wowote bila adhabu. Hati za kwanza za mshiriki _____

AU

Sikubali kushiriki katika utafiti huu. Hati za kwanza za mshiriki _____

Jina la mshiriki: _____

Saini ya mshiriki _____ Tarehe: _____

Jina la shahidi: _____

Saini ya shahidi: _____ Tarehe: _____

(Hutumika kwa washiriki wasiojua kusoma na kuandika tu)

Nimeelezea kusudi la utafiti huu kwa aliyejitolea, pamoja na kusudi, taratibu, hatari na faida za utafiti huu. Nimejibu maswali yoyote aliyokuwa nayo.

Jina la anayehoji: _____

Saini la anayehoji: _____ Tarehe: _____

Mawasiliano: ikiwa unamaswali baadaye, tafadhali wasiliana na mtafiti wa utafiti John Okanda kwa 0722402614 au barua pepe kwa john_okanda@yahoo.com au kamati ya mapitio ya maadili ya Chuo Kikuu cha Maseno kwa + 254 57 351 622 EXT. 3050 au +254 710187247 au barua pepe kwa muerc-secretariate@maseno.ac.ke

APPENDIX I- C: DHOLUO INFORMED CONSENT FORM

TITLE OF THE STUDY:

HIV Transmission Risk Perceptions and Factors Associated with Traditional Child Care Practices among HIV+ve Mothers Attending Jaramogi Oginga Odinga Teaching and Referral Hospital, Kenya

Weche Motelo

Ikwayi mondo idonj e nonro mar Pachi ewi nyalruok mar lando kute mag ayaki kod gigo ma otenore gi luwo yore machon mag rito ngima mar nyathi kuom mine manigi kute mag ayaki makao thieth e osiptal mar Jaramogi Oginga Odinga Teaching and Referral Hospital Mae oboke mar andike mar yie. Omiyi wach iwi nonron manyalo konyi yiero mondo idonj e nonro kata kik idonj. Nonro dhikao madirom dweche adek. In thuolo mar penjo penjo iwi nonroni kod gigo ma inyalo dwar kuomi.

Ango Momiyo Itimo Nonro

Gima duong momiyo itimo nonro en mondo onon Pachi ewi nyalruok mar lando kute mag ayaki kod gigo ma otenore gi luwo yore machon mag rito ngima mar nyathi kaka nyamo chiemo ne nyathi, ngado lim kod pudho leke mag plastic kuom mine manigi kute mag ayaki makao thieth e osiptal mar Jaramogi Oginga Odinga Teaching and Referral Hospital

Onge andike manyiso kata ka nyamo chiemo ne nyathi, ngado lim kod pudho leke mag plastic bende timore e piny Kenya kuom mine manigi kute mag ayaki kod pachgi ewi nyalruok mar lando kute mag ayaki ne nyithindgi kokalo e yore go ok ongere. Dwaher mondo ikonywa ngeyo matut iwi yore manyachon gi e Kenya.

Hinyruok, Thagruok kata Winjo matek

Hinyruok e nonroni tek. Penjo moko ma wadhopenji nyalo miyi iwinj marach. Wanyalo kalo penjo moro amora ma ok idwar dwoko. Weche duto ma wayudo ibiro kan mopondo. Ok wabi lando chalni kata wachni moro amora ne jomoko ma ok gin jotij nonroni.

Ber

Onge ber mibiro yudo mochomi. Makmana ni weche moyud e nonroni nyalo konyo jomoko kuom ngeyo weche malongo manyalo konyo e yore mag gengo maloyo thiedho e lando kute mag ayaki e yore machon mag rito ngima nyathi kendo miyo lakteche ngeyo yore manyien mag gengo landruok mag kute.

To Maling ling

Wabiro kano wecheni maopondo. Okwabi tiyo gi nyingi e sama wapenji penjo. Wabiro miyi namba ma itiyogo e nonro makar nyingi. Wecheni duto ibiro kan kama opondo. Mana jogo matiyo e nonro achiel ka achiel biro bedo gi nyalo mar nyiyo wechegi. Repot moro amora ma

owuok e nonro ni ok bi bedo gi nyingi kata gimoro amora ma nyalo fwenyi. Ibiro yudo kopi mar oboke mar ayie.

Kano wecheni

Wecheni ibiro kan e kama opondo kod komputa man gi siri ma iyawego to mana jachung maduong mar nonro kod nyapara ema dhibedo gi siri mar komputa no. Wecheni ibiro rucho mapiyo piyo bang ka nonro ose rumo.

Yiero bedo e nonro

Bedo e nonroni en yiero mari. Ok ochuno mondo iduok penjo moro amora ma ok idwar dwoko. In thuolo mar weyo nonroni sa asaya.

Chudo

Onge chudo e donjo e nonroni. Biro kawo madirom dakika 40 mar secheni mondo watiek penjo.

Nga manyalo donjo e nonroni

Mine manigi kute mag ayaki matero nyithindo e klinik ma JOOTRH.

Tiyo gi ramak weche (ne jogo mani e bad nonro mar group)

Jatij nonro ma penjo penjo biro kwayou ka unyalo yie mondo otigi gino mamako kendo kano weche. Unyalo yie kata tamore. Ka uyie, obiro mako wecheu gi ramak wecheno. Ka ok uyie, to ok obi mako wecheu gi ramak wecheno.

Wach mar ayie

Ayie ni oboke mar ayie ni oselernago matut gi dhok ma awinjo kendo ne an kod thuolo mar penjo penjo ma olerna mayiego.

Ayie ma ok ochuna mar donjo e nonroni kendo angeyo ni an gi thuolo mar wuok sa asaya maonge kum. Nukta maokwongo mag jachiwre _____

KATA

Ok ayie donjo e nonroni. Nukta maokwongo mag jachiwre _____

Nying jachiwre: _____

Seyi mar jachiwre _____ Tarik: _____

Nying ja aneno: _____

Seyi mar ja aneno: _____ Tarik: _____

(mana ne jochiwre makia somo gi ndiko)

Aselero ne jachiwre gima omiyo itimo nonroni, koriwore gi gima imanyo, chenro, hinyruok kod ber mar nonro. Aseduoko penjo moro amora ma ne engo.

Nying jatij nonro: _____

Seyi mar jatij nonro: _____ Tarik: _____

Tudruok: Ka in gi penjo bange, yie itudri gi jachung mar nonro John Okanda e namba 0722402614 kata e mbuyi john_okanda@yahoo.com kata jochung ne ratiro e

mbalariany ma Maseno e namba + 254 57 351 622 EXT. 3050 kata +254 710187247
kata e mbuyi e muerc-secretariate@maseno.ac.ke

APPENDIX II: QUALITATIVE INTERVIEW GUIDE

APPENDIX II- A: FOCUS GROUP DISCUSSION GUIDE

Traditional Child Care Practices Study

Time: From _____ To _____

Date: //

Venue: _____

Good morning/afternoon. My name is _____ and I will be leading this discussion. These two are _____ and _____, who will be helping me. I am a post graduate students undertaking masters in public health at Maseno University. This study is part of my course work. The purpose of this group interview is to hear your contribution towards what you know about traditional child care practices (pre-chewing of food before feeding to the baby, which is also known as premastication feeding, uvulectomy, which is cutting of uvula/kilimi and false teeth extraction, which is removal of a child's plastic teeth) and what you think are the cultural and demographic factors associated with the practices and what you think about the traditional child care practices and risk of HIV transmission. This is not a test, but an activity to help us understand the practices.

Everything we discuss will be kept private. What we learn from this study will be used to improve PMTCT interventions. Summary of the findings from these discussions will be shared with lecturers at Maseno University. No personal information will be shared and your name will not be included in any of these reports. You can also refuse to answer any questions that make you feel uneasy.

Because there will be a lot of information that we will not be able to remember or write down, we would like to tape record this interview. The audiotape will be typed word-for-word. Your name or any other personal information that you share with us that may identify you will not be included in the typed record of the interview. Once the typed record has been reviewed for accuracy, the audiotape will be destroyed

Before we start, we would like to establish some ground rules:

1. The questions we will ask have no right or wrong answers. We are here to learn from you.
2. It is alright to hold opinions that differ from others
3. We ask that only one person speak at a time and that no side conversations with your neighbours take place during the discussion.
4. People tell things in different ways even though they may be talking about the same thing. So, even though you may think that someone else has already said something that is in-line with your own experiences or thoughts, we would still like to hear what you have to say.
5. Please do not tell others who took part in the group, especially if you know their names.
6. Please do not share what was said in the group with people outside of the group.

The interview will take about one hour to complete. We may ask follow-up questions so that we can better understand your responses.

We really want you to speak from your own experiences. We also want you to be comfortable during the interview. If you don't understand a question, please feel free to ask us to explain. Also, if you would prefer to skip a question, please let us know. We will then move to the next question. Because your experiences and points of view are important, we ask that you wait until the end of the interview to ask for information. We want to assure you that all your responses are CONFIDENTIAL

Do we have your permission to tape record this interview?

(TURN ON TAPE RECORDER)

Instructions for interviewers administering this guide:

Asking the question in a culturally sensitive and non-judgmental fashion such that the participant does not perceive any attached blame is critical to getting valid information.

Introduction

Let's begin by talking about what you know about traditional child care practices of pre-mastication, uvulectomy and false teeth extraction on babies. (Some people around the world chew up food or herbs and then offer the chewed food to a child, which is also known as pre-mastication feeding, uvulectomy, which is cutting of uvula/kilimi is also practiced by some people and false teeth extraction, which is removal of a child's plastic teeth has been reported among some populations). We would like to know more about these practices and ask related questions in this survey.

SECTION A: QUESTIONS ON PREMASTICATION

Introduction script to be read to the FGD participants: *(Instructions: get all the responses then probe for possible cultural factors (beliefs and traditions or rules of behavior) that could influence a mother's decision to pre-chew).*

Q1. Some people around the world chew up food/herbs and then offer the chewed food/herbs to a child. We would like to know more about this practice of pre-chewing food/herbs. Would you share with us more about this practice?

Probe on

- a) Personal experience and Gender of the child and relationship with the child
- b) When does a child get introduced to pre-chewed food/herbs?
- c) When does giving a child pre-chewed food/herbs end?
- d) What are the reasons for which people may pre-chew food/herbs for a child?

Q2. In your own opinion, do you think a child can get HIV infections through pre-chewed foods/herbs? Tell me more about this?

Q3. Are you afraid about a baby/child getting HIV infected through pre-chewed foods/herbs?

Q4. What would you do or think about it?

Q5. Are there any children you know of who have been fed on pre-chewed food/herbs and have contracted HIV Infection or Hepatitis?

SECTION B: CUTTING OF UVULA QUESTIONS

Introduction script to be read to the FGD participant:

(Instructions: get all the responses then probe for possible cultural factors (beliefs and traditions or rules of behavior) that could influence a mother's decision to cut the uvula)

Q6. Some people around the world cut uvula for children. Would you tell me more about this practice of cutting of uvula?

Probe on

- a) Personal experience and Gender of the child and relationship with the child
- b) The age in which the cutting of the uvula do happen?
- c) Cutting of the uvula and breastfeeding
- d) Reasons for cutting uvula

Q7. In your own opinion, do you think a child can get HIV infection through cutting of uvula? Tell me more about it

Q8. Are you afraid about a baby/child getting HIV infected through cutting of uvula?

Q9. What would you do or think about it?

Q10. Do you know of any child who got HIV OR Hepatitis infections after cutting of uvula?

SECTION C: FALSE TEETH EXTRACTION

Introduction script to be read to the FGD participant: *(Instructions: get all the responses then probe for possible cultural factors (beliefs and traditions or rules of behavior) that could influence a mother's decision to remove false teeth)*

Q11. Some people around the world extract false teeth for a child/baby. We would like to know more about this practice of false teeth extraction.

Probe on

- a) Personal experience and Gender of the child and relationship with the child
- b) The age in which the removal of false teeth happens
- c) Removal of false teeth and breastfeeding
- d) Reasons for removal of false teeth

Q 12. In your opinion, do you think a child can get HIV infections through removal of false teeth? Tell me more?

Q13. Are you afraid about a baby/child getting HIV infected through removal of false teeth?

Q14. What would you do or think about it?

Q15. Do you know of any child whose false teeth was removed and has HIV or Hepatitis infections?

APPENDIX III:DEMOGRAPHIC QUESTIONNAIRE

APPENDIX III- A: ENGLISH VERSION OF BRIEF DEMOGRAPHIC QUESTIONNAIRE

Focus Group ID: _____

Participant ID: _____

Date: _____/_____/_____

Month Day Year

1. What is your date of birth? _____/_____/_____

Month Day Year

2. What is the highest level of education that you reached (until now)?

Never went to school

Some primary

Some secondary

Post secondary

3. What is your current marital status?

Single/Never married

Married

Separated/divorced

Widowed

4. What is the gender of your current baby?

Male

Female

Other (specify)_____

5. What is your current baby's date of birth? _____/_____/_____

Month Day Year

6. What is your tribe?

a. Luo b. Luhya c. Kisii d. Others Specify_____

7. What is your religion?

a. Catholic

b. Anglican

c. SDA

d. Protestant

e. None

Economic status questions

8. How big is your household? (*persons who live in the same dwelling and share meals*) specify number_____

9. How many people in your household work for an income and contribute to your monthly household income? Specify number _____

10. What is your total monthly household income?

1 - < Ksh 5,000

2 - Ksh5,000 to 14,999

3 - Ksh 15,000 to 29,999

4 - Ksh 30,000 to 44,999

5 - Ksh 50,000 to 64,999

6 - > Ksh 65,000

11. Who is the breadwinner in your household? Specify_____

12. How many children do you have who are alive? Specify_____

13. Are you ever afraid that you will miss your next meal? 1-Yes 2-No 3- Don't know

a. If yes, how often_____

APPENDIX IV: QUANTITATIVE QUESTIONNAIRE ON THE TRADITIONAL CHILD CARE PRACTICES

INSTRUCTIONS for interviewer administering this questionnaire:

- Administer questionnaire to the mother of the study participant
- Some people practice all or some of the following traditional child care practice: pre-chew certain food items before offering it to a child; cutting of uvula ‘kilimi’; extraction of false teeth. Asking the question in a culturally sensitive and non-judgmental fashion such that the participant does not perceive any attached blame is critical to getting valid information
- Interviewer instructions are printed in bold italics. These **should not** be read to the participant
- Questions and statements directed to the participant are printed in plain type. This makes up the script and **should be** read as written. Additional probes may be used to ensure that the survey respondent understands the question or to explore ambiguous answers
- For anything other than a “yes/no” answer, read the answer categories. The interviewer may need to assist the client in answering within the categories given. Never choose an answer category based on what you think the client means by their spoken response. If participant response is ambiguous, probe for clearer response
- Where applicable, enter the number code in the response box provided. This would be next to the survey respondent’s chosen response. For example, if the response is “Yes” and the number code next to Yes is “1”, then enter “1” in the response box
- Within each module, proceed sequentially from question to question, unless instructed either to skip to another question or go to the next page

SECTION A: GENERAL QUESTIONS ON PREVALENCE OF THE TRADITIONAL CHILD CARE PRACTICES

Let’s begin by talking about what you know about traditional child care practices of pre-mastication, uvulectomy and false teeth extraction on babies. (Some people around the world chew up food or herbs and then offer the chewed food to a child, which is also known as pre-mastication feeding, uvulectomy, which is cutting of uvula/kilimi is also practiced by some people and false teeth extraction, which is removal of a child’s plastic teeth has been reported among some populations). We would like to know more about these practices and ask related questions in this survey.

Q1. Have you ever practiced any of the following?

- a. Pre-chewed food/herbs for a baby? ___ 1-Yes, 2-No, 3- Don’t know
- b. Cut uvula for a baby? _____ 1-Yes, 2-No, 3- Don’t know
- c. Extracted false teeth for a baby? _____ 1-Yes, 2-No, 3-Don’t know

If answer to all questions 1a, b, and c was No, then skip to Q5

If answer was YES to any of the above questions then please proceed to next question

- Q2. Have you practiced any of the following to your current baby?
- Pre-chewed food/herbs? ___ 1-Yes, 2-No, 3- Don't know
 - Cut uvula? _____ 1-Yes, 2-No, 3- Don't know
 - Extracted false teeth? _____ 1-Yes, 2-No, 3-Don't know

SECTION B: QUESTIONS ON PREMASTICATION

Introduction script to be read to the survey participant:

Some people around the world chew up food/medicine and then offer the chewed food/medicine to a child. We would like to know more about this practice of pre-chewing food/medicine and ask related questions in this survey. The survey should take about 15 minutes to complete and we want to assure you that all your responses are CONFIDENTIAL.

Q1. Have you ever pre-chewed food/ herbs for your child/baby or someone else's child/baby?
1-Yes, 2-No (*If No*, then skip to Q5)

If Yes, then specify

- 1 - My current baby
- 2 - My other child
- 3 - My child and someone else's child
- 4 - Someone else's child

If 3 and or 4, then specify your relationship to the child that is not yours _____.

- 1 - Biological Grandmother
- 2 - Adoptive Mother
- 3 - Step-Mother or Father's Companion
- 4 - Foster Mother
- 5 - Other Relative, specify (include gender) _____
- 6 - Other Non-relative, specify (include gender) _____

Q2. How old was the baby when you first gave pre-chewed food/ herbs? _____ (months)

Q3 What age was the baby when you last gave pre-chewed food/ herbs? _____ (months)

Q4. Are these the reasons for which you pre-chewed food/ herbs for the baby?

Reason	Strongly disagree 1	Disagree 2	Agree 3	Strongly Agree 4
a) Pre-chewing is done in my family				
b) Pre-chewing is a normal practice in our culture				
c) I was advised to pre-chew by a relative				
d) I heard about pre-chewing from my friends				
e) To prevent or treat infection				
f) It is our Religious belief				
g) Pre-chewing is my habit				

h. ___ Other reasons; please specify _____

Q5. Do you think a child can get HIV infections through pre-chewed foods or herbs?

1-Yes, 2-No, 3-Don't know

- Q6.** If yes, what do you think is the risk level of HIV infection through pre-chewed foods or herbs? 1- High, 2-Low, 3-Don't know
- Q7.** Are you afraid about a baby/child getting HIV infected through pre-chewed foods/herbs?
1-Yes, 2-No, 3-Don't know
- Q8.** What would you do or think about pre-chewed foods/herbs? Please explain

- Q9.** Does any of the children you have pre-chewed food/ herbs for have any of the following?
 ___HIV infection 1-Yes, 2-No, 3-Don't know
 ___Hepatitis 1-Yes, 2-No, 3-Don't know

SECTION C: CUTTING OF UVULA QUESTIONS

Introduction script to be read to the survey participant:

Some people around the world cut uvula for children. We would like to know more about this practice of cutting of uvula and ask related questions in this survey. The survey should take about 10 minutes to complete and we want to assure you that all your responses are CONFIDENTIAL.

Q10. Have you ever cut uvula for your child/baby or someone else's child/baby?
 _____ (1-Yes, 2-No)

If No, then skip to Q14.

If Yes, then specify

- 1 - My current baby 2 – My other child
 3 – My child and someone else's child 4 - Someone else's child

If 3 and or 4, then specify your relationship to the child that is not yours _____.

- 1 - Biological Grandmother
 2 - Adoptive Mother
 3 - Step-Mother or Father's Companion
 4 - Foster Mother
 5 - Other Relative, specify (include gender) _____
 6 - Other Non-relative, specify (include gender)_____

Q11. How old was the baby/child when you cut the uvula? _____ (months)

Q12. Was the baby/child still breastfeeding when you cut uvula? _____ 1-Yes, 2-No, 3-Don't know

Q13. Are these the reasons for which you cut uvula for the baby/child?

Reason	Strongly disagree 1	Disagree 2	Agree 3	Strongly Agree 4
a) Cutting of uvula is done in my family				
b) Cutting of uvula is a normal practice in our culture				
c) I heard about cutting of uvula from my friends				
d) I was advised to cut uvula by a relatives				

e) Cutting of uvula helps prevent or treat infection				
f) It is our Religious belief				
g) Cutting uvula is my habit				

h. ___ Other reasons; please specify -

Q14. Do you think a child can get HIV infection through cutting of uvula?

1-Yes, 2-No, 3-Don't know

Q15. If yes, what do you think is the risk level of HIV infection through cutting of uvula?

1- High, 2-Low, 3-Don't know

Q16. Are you afraid about a baby/child getting HIV infected through cutting of uvula?

1-Yes, 2-No, 3-Don't know

Q17. What would you do or think about cutting of uvula? Please explain

Q18. Does any of the children you have cut uvula for have any of the following?

___HIV infection 1-Yes, 2-No, 3-Don't know

___Hepatitis 1-Yes, 2-No, 3-Don't know

SECTION D: FALSE TEETH EXTRACTION

Introduction script to be read to the survey participant:

Some people around the world extract false teeth for a child/baby. We would like to know more about this practice of false teeth extraction and ask related questions in this survey. The survey should take about 10 minutes to complete and we want to assure you that all your responses are CONFIDENTIAL.

Q19. Have you ever removed false teeth for your child/baby or someone else's child/baby?

_____ (1-Yes, 2-No)

If No, then skip to Q23

If Yes, then specify

1 - My current baby 2__My other child

3 - My child and someone else's child 3 - Someone else's child

If 3 and or 4, then specify your relationship to the child that is not yours _____.

1 - Biological Grandmother

2 - Adoptive Mother

3 - Step-Mother or Father's Companion

4 - Foster Mother

5 - Other Relative, specify (include gender) _____

6 - Other Non-relative, specify (include gender) _____

Q20. How old was the baby/child when you removed false teeth? _____ (months)

Q21 Was the baby/child still breastfeeding when you removed false teeth? 1-Yes, 2-No, 3-Don't know

Q22. Are these the reasons for which you removed false teeth for the baby/child?

Reason	Strongly disagree 1	Disagree 2	Agree 3	Strongly Agree 4
a) removal of false teeth is done in my family				
b) removal of false teeth is a normal practice in our culture				
c) I heard about removal of false teeth from my friends				
d) I was advised to remove false teeth by a relatives				
e) Removal of false teeth helps prevent/treat diseases				
f) Removal of false teeth is our Religious belief				
g) Removal of false teeth is my habit				

h. ___ Other reasons; please specify -

Q23. Do you think a child can get HIV infections through removal of false teeth?

1-Yes, 2-No, 3-Don't know

Q24. If yes, what do you think is the risk level of HIV infection through removal of false teeth?

1- High, 2-Low, 3-Don't know

Q25. Are you afraid about a baby/child getting HIV infected through removal of false teeth?

1-Yes, 2-No, 3-Don't know

Q26. What would you do or think about removal of false teeth? Please explain

Q27. Does any of the children you removed false teeth for have any of the following?

___ HIV infection 1-Yes, 2-No, 3-Don't know

___ Hepatitis 1-Yes, 2-No, 3-Don't know

APPENDIX V: APPROVALS

V.1 MASENO UNIVERSITY APPROVAL



MASENO UNIVERSITY
SCHOOL OF GRADUATE STUDIES

Office of the Dean

Our Ref: PG/MPH/00076/2012

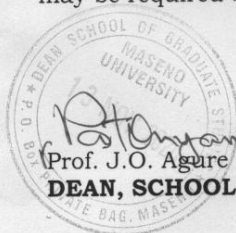
Private Bag, MASENO, KENYA
Tel:(057)351 22/351008/351011
FAX: 254-057-351153/351221
mail: sgs@maseno.ac.ke

Date: 10th November, 2020

TO WHOM IT MAY CONCERN

RE: PROPOSAL APPROVAL FOR JOHN OKANDA — PG/MPH/00076/2012

The above named is registered in the Masters of Public Health Degree Programme in the School of Public Health and Community Development, Maseno University. This is to confirm that his research proposal titled “HIV Transmission Risk Perceptions and Factors Associated with Traditional Child Healthcare Practices among HIV+ve Mothers Attending Jaramogi Oginga Odinga Teaching and Referral Hospital, Kenya.” has been approved for conduct of research subject to obtaining all other permissions/clearances that may be required beforehand.



Prof. J.O. Agure
DEAN, SCHOOL OF GRADUATE STUDIES

Maseno University

ISO 9001:2008 Certified



V.2 JOOTRH ETHICS APPROVAL



COUNTY GOVERNMENT OF KISUMU
DEPARTMENT OF HEALTH

Telephone: 057-2020801/2020803/2020321
Fax: 057-2024337
E-mail: medsupnpg@jaramogireferral.go.ke
Website: www.jaramogireferral.go.ke
When replying please quote
IERC/JOOTRH /338/20

JARAMOGI OGINGA ODINGA TEACHING &
REFERRAL HOSPITAL
P.O. BOX 849
KISUMU

Ref:

20th January, 2021
Date.....

To: John Oduor Okanda

Dear John,

RE: STUDY TITLE
HIV TRANSMISSION RISK PERCEPTIONS AND FACTORS ASSOCIATED WITH TRADITIONAL CHILD
HEALTHCARE PRACTICES AMONG HIV+VE MOTHERS ATTENDING JARAMOGI OGINGA ODINGA
TEACHING AND REFERRAL HOSPITAL, KENYA

This is to inform you that **JOOTRH IERC** has reviewed and approved your above research proposal. Your application approval number is **IERC/JOOTRH/338/20**. The approval period is **20th January, 2021 – 20th January, 2022**. This approval is subject to compliance with the following requirements:

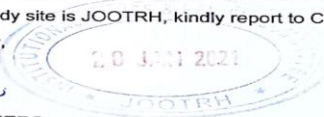
- i. Only approved documents including (informed consents, study instruments, MTA) will be used
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by **JOOTRH - IERC**.
- iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **JOOTRH - IERC** within 72 hours of notification
- iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to **JOOTRH - IERC** within 72 hours
- v. Clearance for export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days upon completion of the study to **JOOTRH - IERC**.

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and also obtain other clearances needed.

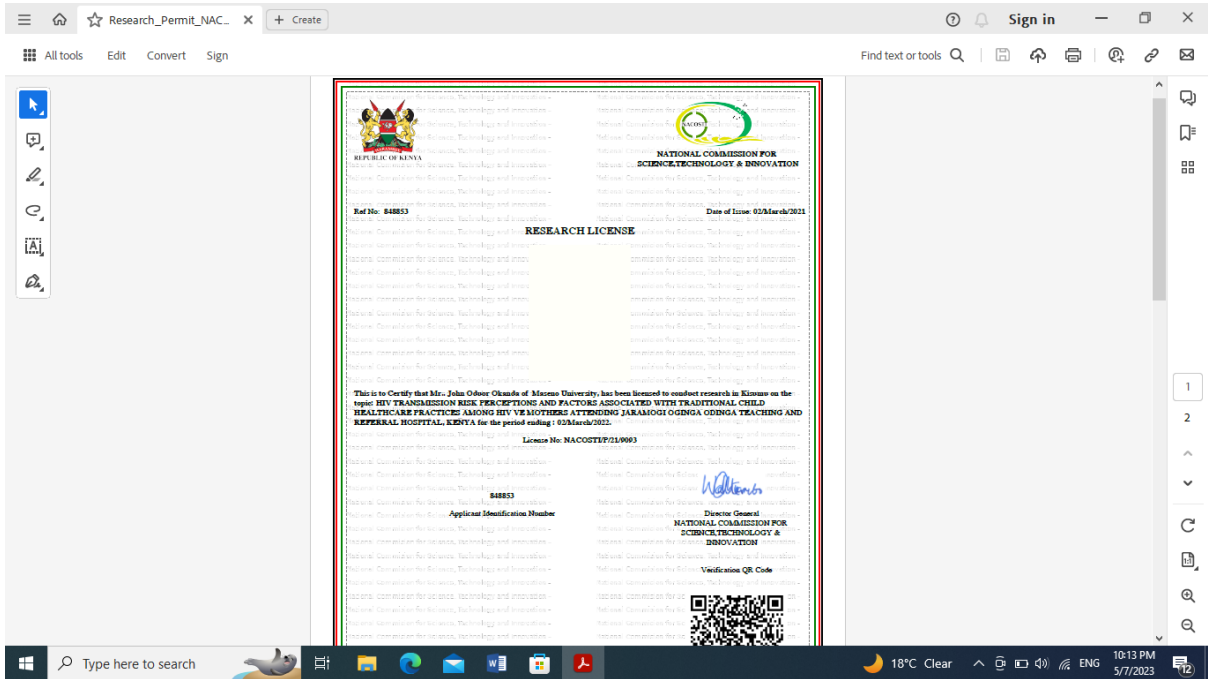
In case the study site is **JOOTRH**, kindly report to Chief Executive Officer before commencement of data collection.

Yours sincerely,


SECRETARY, IERC



V.3 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION



APPENDIX VI: CODEBOOK TRADITIONAL CHILD CARE PRACTICES

Nodes

Name	Description	Files	References
1. Premastication		3	85
a. Knowledge on premastication	know more about this practice of pre-chewing food/herbs. Share with us more about this practice	3	44
b. HIV Infection and Premastication	HIV transmission through pre-chewed foods/herbs	3	31
i. Experience with HIV and Premastication	Examples of cases of children who have been fed on pre-chewed food/herbs and have contracted HIV Infection or Hepatitis?	3	7
c. Perception on Premastication	Opinion about pre-chewed foods/herbs	2	11
2. Uvulectomy		3	70
a. Knowledge on ovula cutting	Information on the practice of cutting of uvula	3	36
b. HIV Infection and ovula cutting	HIV Transmission through cutting of uvula	3	23
i. Experiences with HIV and ovula cutting	Cases of children who got HIV or Hepatitis infections after cutting of uvula	3	8
c. Perception on Ovula Cutting	Opinion about cutting of uvula	3	10
3. False Teeth extraction		3	70
a. Knowledge on false teeth extraction	knowledge about this practice of false teeth extraction.	3	29
b. HIV Infection and false teeth extraction	HIV Infection and removal of false teeth	3	17
i. Experience with HIV and false teeth extraction	Cases of false teeth was removal and has HIV or Hepatitis infections in children	3	6
c. Perception on false teeth extraction	Opinion on false teeth removal	3	23
4. Comments		2	6