

ABSTRACT

Circumcision and High-risk Sexual Behavior among Luo Males in Rural, Western Kenya

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The Luo people of western Kenya have the highest HIV prevalence (20.2%) of any comparable ethnic group in eastern sub-Saharan Africa. In an effort to combat the pandemic, the Kenyan government enacted a scale-up of voluntary male medical circumcision (VMMC) in 2008, using data from three randomized control trials reporting a consistent 60% protective effect from HIV infection for circumcised men as the basis for this expansion. As it so happens, the Luo ethnic group is the only major group that does not traditionally practice circumcision, but present literature indicates that the practice has recently gained some acceptability within the Luo population, primarily in urban areas, as a means of acquiring some protective benefit against HIV infection.

This study uses a sample (n=50) of Luo men in rural Nyanza Province to assess how the introduction of VMMC influences high-risk HIV sexual behavior. The effect of VMMC on high-risk sexual behavior is measured using the outcome variables of number of sexual partners and condom usage. Results indicate no statistically significant relationship between male circumcision and condom usage ($\chi^2=0.1164$, $p=0.7330$). The sample, however, does express a dramatic trend in condom usage, revealing that roughly 2/3 of non-condom users are circumcised males. It is also found that male circumcision is a significant predictor for a relatively high number of sexual partners ($\chi^2=11.02$, $p=0.0009$). These results provide insight into just how accurately rural Luo men perceive the protective benefit of circumcision and where current issues with VMMC may need to be addressed in order to attain optimal results for combating HIV incidence.

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CIRCUMCISION AND HIGH-RISK SEXUAL BEHAVIOR AMONG LUO MALES IN
RURAL WESTERN KENYA

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“For now we see through glass, darkly; but then face to face: now I know in part;
but then shall I know even as also I am known.”

1 Corinthians 13:12



CHAPTER ONE

Introduction

Sub-Saharan Africa is home to roughly 14.5% of the world's population, and yet, the Joint United Nations Program on HIV/AIDS (UNAIDS) estimates that sub-Saharan Africa accounts for 69% of the people living with HIV worldwide. Additionally, 72% of all AIDS deaths in 2009 occurred in sub-Saharan Africa (UNAIDS, 2010). Kenya accounts for approximately 6.7% of the adult HIV prevalence as of 2010 with about 1,500,000 people living with HIV and 80,000 deaths due to AIDS in a single year (UNAIDS, 2010). In seeking to combat this disease, speculation has existed for decades on the potential for HIV risk reduction through male circumcision (MC). A population of particular concern is the Luo tribe who lives primarily in the Nyanza province and who traditionally abstains from circumcision. A subset of this group lives in a remote, rural part of this area, the Nyakach Plateau, and may be at even greater risk for HIV. The Kenya National Bureau of Statistics reported in the 2009 Kenya Demographic and Health Survey that the Luo ethnic group held 20.2 % prevalence of HIV among men and women, much higher than comparable ethnic groups such as the Kamba and Kikuyu who traditionally circumcise and express HIV prevalence rates of 4.1%.

Due to the disturbing high HIV prevalence among the Luo, the Kenyan government enacted a scale-up program that introduced several initiatives to push for voluntary male medical circumcision (VMMC) in 2008 (Westercamp et. al., 2011). VMMC is a term used to denote MC that is voluntarily undergone with the goal in mind of reducing risk of HIV infection. According to the 2010 UNAIDS Global Report, the

time period of 2009-June 2010 produced 91,300 circumcised Kenyan males with 90,000 from the Nyanza Province alone. The 2010 and 2011 Westercamp et al. studies assessed male circumcision beliefs and preferences prior to the scale-up of VMMC promotion. The findings indicate that the primary barrier to circumcision among men who do not want the procedure is that circumcision is not part of Luo heritage. Habil Ogola, a Luo pastor, former medical technician, and local leader of Bethlehem Home—an aid project for orphans and destitute elderly people on the Nyakach Plateau—also indicated in previous correspondence (Personal communication, 2012) that circumcision normally serves as a rite of passage into manhood for other tribes (e.g., the Maasai), whereas the removal of teeth has traditionally served the same ritual function for the Luo.

In spite of this cultural aspect, the conclusions of the Westercamp et al. studies demonstrate that almost 60% of men sampled prefer to be circumcised (Westercamp et al. 2011, Westercamp et al. 2010). However, these studies sampled from the general population of urban Kisumu, the largest city in the Nyanza Province, as opposed to the rural areas like the Nyakach Plateau where the influence of traditional beliefs would be expected to be stronger (resulting from geographic isolation and cultural homogeneity). The present study seeks to compare the previous findings to a sample of men from the Nyakach Plateau, which serves as the location for relatively remote rural villages more than an hour's drive (and certainly more than an hour's walk) from the bustling urban expanse of Kisumu. This study seeks to determine the association, if any, between circumcision and high-risk sexual behavior of rural Luo men within the context of HIV prevention and risk reduction. A better understanding is needed of the perceptions and behavior of rural Luo men concerning circumcision, condom usage, sexual behavior, and

HIV knowledge. Because Luos do not traditionally circumcise, information pertaining to Luo males who do choose to be circumcised could be beneficial for assessing the success of the 2008 Kenya VMMC scale-up in a rural context.

CHAPTER TWO

Review of Literature

Male Circumcision

In recent years, publications have shown male circumcision to reduce risk of HIV acquisition (i.e., confer a protective benefit) by as much 60 percent (Auvert et al., 2005; Bailey et al., 2007; Gray et al., 2007). These three randomized control trials have been instrumental in catalyzing the introduction and implementation of MC as a method for HIV control. An argument for the protective mechanism comes from biological plausibility based on the physiology of a circumcised penis and an uncircumcised one. In comparison to a dry external skin surface, the inner mucosa of foreskin expresses less keratinization (fibrous protein deposition), has higher density of HIV-infection susceptible Langerhans cells, and has higher susceptibility to HIV infection than penile tissue in laboratory studies (Patterson, 2002). The foreskin is also suggested to have greater susceptibility to traumatic epithelial tears during intercourse, providing entryways for pathogens, including HIV. Additionally, the microenvironment in the space between foreskin and the glans penis may be conducive to viral survival (Patterson, 2002). Therefore, if circumcision can reduce genital infection transmission by improved hygiene or accelerating the healing of otherwise subpreputial lesions, HIV transmission may thus be delayed via circumcision. Such speculation therefore generates enough interest to consider MC as a potential intervention.

Not surprisingly, governments of sub-Saharan Africa have capitalized on the promising conclusions made in these circumcision and HIV studies. In 2005, the results of standardized male circumcision procedures in Kisumu, Kenya were published; of the 479 circumcisions performed, 17 (3.5%) were associated with adverse events deemed possibly related to the procedure. The results indicate that these adverse events were most commonly wound infections (1.3%), bleeding (0.8%), and delayed wound healing (0.8%). However, 99% of the participants reported being very satisfied with the procedure after a month (Krieger et al., 2005). The general assumption has been that if circumcision were to be widely implemented in developing countries as a public-health measure, male circumcision services could be received satisfactorily.

Regardless of the safety of the procedure, uptake depends on attitudes and beliefs of circumcision itself. What has been observed is a growing positive trend towards VMMC and a general acceptance of MC in sub-Saharan Africa for HIV control (Westercamp et. al, 2006).

Circumcision and Condom Usage

Condoms, while originally developed for birth control, have been universally accepted as essential for aiding in STD prevention and, specifically, in HIV/AIDS transmission reduction. Studies show that condoms are 90 to 95% effective when used consistently. Consistent condom users are 10 to 20 times less likely to become infected when considering high-risk exposure environments compared to non-condom users (Pinkerton & Abramson, 1997). Therefore, it is no surprise that condom use is

experiencing heavy promotion in HIV/AIDS hotspots, especially in rural areas of sub-Saharan Africa.

However, whether this promotion reaps successful responses depends primarily on the attitudes and practices of target groups. In 2001, a study showed that only 40% of Kenyan males between the ages of 20-24 used a condom at last sex during the survey, and 35% of males 15-19 years old used it during last sex (Waithaka and Bessinger, 2001). The same study showed that condom use at last sex most frequently occurred among unmarried men (41%), whereas only 9% of married men used a condom (Waithaka and Bessinger, 2001). This difference may be because the married men are only sexually active with their wives, or it may be that married men with multiple sexual partners underestimate their risk status. Clearly they are not heavily influenced if their wives are advocating for condom usage.

Because MC has been introduced as an HIV-protective measure, research has been conducted to assess if this has subsequently affected condom usage. The 2010 Westercamp et al. study found no statistically significant difference in reported condom usage between circumcised and uncircumcised men from urban Kisumu. Again referencing the 2008 Mattson et al. study, based on an 18-variable index of sexual behaviors that includes condom usage, results showed that there was no increased risk behavior after the circumcision procedure when measured at 6 and 12-month follow-up visits.

Circumcision and Number of Sexual Partners

The scientific literature supports the notion that fewer sexual partners and a decline in casual sex behavior are contributors to reduction in HIV risk, especially in sub-Saharan Africa. The 2009 Mishra et al. study sought to provide empirical evidence for this claim and found a “dose-response” relationship between number of lifetime sexual partners and risk of HIV infection. In the Uganda sample, the adjusted odds of being HIV-infected were 1.94 (95% CI: 1.54-2.43) for two partners and 2.99 (95% CI: 2.40-3.73) for three or more partners. When stratified by gender, the adjusted odds ratio for men being HIV-infected was 5.22 (95% CI: 2.60-10.47, p value=0.0001) for three or more sexual partners. The study concludes that fewer lifetime sexual partners and faithfulness to spousal partner(s) are strongly associated with reduced risk of HIV infection.

The behavior of circumcised and uncircumcised men regarding sexual partners is also addressed in the scientific literature. It was found in a particular study that the lifetime number of sexual partners had no statistically significant difference between circumcised and uncircumcised men (Westercamp et al., 2010). Similarly, the results of the 2008 Mattson et al. study show that the differences in “total number of sex partners” between circumcised and uncircumcised men at baseline, 6-month follow-up and 12-month follow up were statistically nonsignificant.

Circumcision among Luo Men

In light of the widespread adoption of circumcision as an intervention to reduce HIV transmission, it is essential to consider particular groups with higher HIV prevalence that may have unique characteristics that will influence the adoption and consequences of circumcision. The Luo ethnic group traditionally refrains from MC, whether at birth or at an older age. The combination of cultural factors such as this custom, wife inheritance, and discouragement of condom use are all likely contributors to the high HIV prevalence among Luos. It is not clear how these factors interact to produce more or less risk behavior in a very traditional setting.

As previously mentioned, circumcision is generally viewed by Luos as an initiation rite practiced by other tribes, and the Luos prefer other customs. In spite of a generally negative view, the overwhelming push for VMMC by the Kenyan government has undoubtedly reached several Luo groups, albeit with some hesitation. MC is slow to be integrated, perhaps as a result of uncertainty concerning the procedure stemming from a lack of knowledge. In traditionally circumcising groups (e.g., Maasai), the procedure is performed without anesthetics, and the pain is considered to be an element of the rite of passage into manhood. Pain during and after the operation is considered a significant factor in the hesitation towards acceptance of MC amongst rural Luos who gain a majority of their understanding of the practice of circumcision from neighboring ethnic groups (Bailey et al., 2002). A 2006 study by Westercamp and Bailey noted that members of non-circumcising ethnic groups were aware that endurance of pain was an essential element of the rite of passage into manhood for circumcising neighboring tribes.

The analysis presented in a circumcision preference study also indicated that pain was of notable concern as a barrier to uptake in both men who prefer to be circumcised and men who prefer to not be circumcised (OR = 1.38, CI 0.8-2.3), with no statistical significance between the groups (p-value=0.22) (Westercamp et al. 2011).

Luo Sexual Socio-Culture in the Context of HIV/AIDS

In 2009, a study showed that only 20% of people living with HIV/AIDS in Kenya were aware of their HIV status, and within this 20%, 72% believed that they were at no or small risk of acquiring HIV (Anand et al., 2009). Also, a study in southern rural Kenya showed that about 80% of individuals being questioned about HIV gave “death” or “fear” as associated words with AIDS. The jarring and inverse relationship between HIV/AIDS status knowledge and HIV/AIDS fear lends to a potential conclusion that perhaps individuals are either in denial or refraining from testing because they fear the devastating consequences of HIV/AIDS. It is obvious that rural Kenyans understand the seriousness of this disease, but there is a seemingly significant disconnect regarding an initiative to know one’s own status. This is, of course, only one assumption, and other predictors must be considered (availability of testing, cost, accuracy, etc.). As another consideration, the term “HIV fatigue” (Shefer et al., 2012) refers to an attitude present among high HIV/AIDS prevalence communities. This is described as a condition in which Africans’ sensitivity and interest towards the HIV/AIDS epidemic is reduced as a result of frustration and disillusionment from constant, unrelenting messages of HIV and safer sex.

The Luo tribe of the Nyanza province has a unique socio-cultural behavior with regards to sexuality that has dire implications for HIV transmission. A 2001 report from Nyanza places great blame on socio-cultural behavior for increased HIV/AIDS prevalence amongst Luo in Nyanza (Okeyo, 2001); specifically, the culture of rural Kenya encourages sex with multiple partners.

There are many customs and beliefs that result in Luo men having multiple partners, and the Okeyo report states that this is derived from widow inheritance (levirate) - a deep-rooted custom that is argued to perpetuate a high prevalence of HIV when combined with other factors. Widow inheritance is the practice of a man inheriting the widows of deceased male relatives so that he ultimately has multiple sexual partners. Polygamy is also widely practiced in rural Luo communities. A third reason for increased sexual partners is the tradition of not marrying until the male has a job, a requirement that, in a culture of high unemployment, results in significant premarital sex. Finally, since jobs are scarce in rural areas, many married men leave for extended periods of time for work in the city, so extramarital affairs and prostitution also contribute to multiple sexual partners.

Culturally, in a traditional patriarchal setting, rural Kenyan men conduct the household and family; as such, older cultural practices before the advent of HIV/AIDS and women's rights are deeply rooted in family lifestyle generation after generation (Kimbwarata, 2010). Men set the conditions of sexual practices, and women are typically prohibited from refusing sex or insisting on safer sex. Thus, an evaluation of male beliefs regarding sexual behavior is warranted to understand how a possible future intervention

could be tailored to address pertinent attitudes that are possibly contributing to increased HIV risk.

Risk Compensation

Widespread promotion of male circumcision has raised concern that such support of the procedure and its potential benefits will induce “risk compensation” within the circumcised population. This rationale is referred to as “behavioral disinhibition”, whereby individuals will adjust their behavior in response to perceived level of risk. Literature suggests that significant risk compensation could “reduce the protective effect of circumcision and possibly result in increased rather than decreased incidence of HIV (Mattson et al. 2008).” The key to successful implementation of male circumcision to reduce HIV incidence rates, as suggested in effectiveness studies, is that the protective benefits must not be offset by increased riskier behavior in the target population.

Two initial cross-sectional studies have provided conclusions that circumcised men engage in higher risk behaviors than uncircumcised men (Bailey et al., 1999; Seed et al., 1995). However, the later 2008 Mattson et al. study suggests that those previous findings could be confounded given the “nature of the studies.” In fact, the data from that study shows that both circumcised and uncircumcised men “significantly reduced their HIV risk behavior” (Mattson et al., 2008).

It is also important to consider the local authorities’ views of VMMC when considering acceptability of MC by Luos. The success and results of VMMC weigh heavily on whether village elders, whose views are paramount to maintaining Luo

cultural identity, will allow for MC to be integrated into their communities. In 2008, a workshop was held to discuss the implementation of VMMC and was attended by Ministry of Health officials along with 30 Luo tribal elders, including the Luo Council of Elders chairman, Mr. Riaga Ogallo. Ultimately, the meeting reached a general consensus that MC could only be adopted as an intervention in controlling the spread of HIV/AIDS “after consultation with specific communities (Nduri, 2008).” It was stressed that MC would only be considered as an optional procedure upon individual consent. The importance of the Council of Elders’ role in the matter is that their decisions as an advising body highly influence the Luo community’s beliefs and practices. Elders expressed that they were “afraid...some men will think that being circumcised is an alternative to using condoms, which will put them at a higher risk of infection” (Nduri, 2008). In this case, the fear is that circumcised Luo males will express risk compensation (i.e., riskier sexual behavior) as a result of a decreased level of perceived HIV risk from exaggeration of the understood protective effect of VMMC.

Description of Study: Are rural Luo men risk-prone or protection-prone?

In light of these conflicting ideas regarding the effect of Luo men choosing circumcision, and, given the nature of a Luo tradition that encourages multiple partners, it is important to assess the relationship between VMMC and number of sexual partners in the subset of this group and examine the particular relationships among these variables in rural, traditional Luo men.

Although the Luo elders have expressed concern for risk compensation, we rationalize our hypothesis on what we call to be a “protection-prone” attitude among rural Luo men who choose to undergo circumcision. The argument is made within the context of attitudes and customs that define Luo heritage. Given that Luo culture traditionally abstains from circumcision, views condom usage negatively, and encourages multiple sexual partners, we hypothesize that the men who have gone against their culture and been circumcised did so because they were strongly inclined to protect themselves from acquiring HIV. It would follow, then, that this protection-prone attitude would also result in the adoption of other less traumatic, risk-lowering behaviors, despite what cultural norms would dictate.

This study seeks to determine the association, if any exists, between circumcision status and high-risk sexual behavior, particularly condom usage and number of sexual partners in rural Luo men. It is important to determine if attitudes post scale-up of VMMC are having any effect on behaviors that significantly mitigate the risk of contracting HIV. If condoms are one of the primary methods for HIV prevention, then why does the Luo ethnic group still exhibit high HIV prevalence rates in a setting that

already implements condoms? And if decreased number of sexual partners also decreases risk of exposure and transmission, then how do Luo customs that encourage multiple sexual partners affect men's sexual choices?

This study will measure prevalence of these behaviors in the sample and will consider the attitudes of rural Luo men towards condom usage and its purpose as well as their attitudes and behaviors regarding multiple sexual partners. We will test the hypothesis against previous evidence of no relationship between circumcision status and other high-risk behaviors and also against the claims made by the elders that risk compensation is highly probable if VMMC services were implemented. It is believed that traditional Luo men who go against cultural norms to be circumcised will be consistent with protection-prone choices in other behaviors. Based on that assumption, this study hypothesizes that the men will also display other protection-prone behaviors, including increased condom use and fewer sexual partners.

The results of this study, using recent data from 2012, are intended to provide conclusions as a follow-up to the discussion from the Mattson et al. study, which rightly advises that continued monitoring and evaluation of risk compensation associated with male circumcision is needed as VMMC continues to be widely promoted. Furthermore, we stress that this study is motivated by an argument that our sample of Luo males would deviate from findings in present scientific literature as a result of living in different environmental contexts (rural vs. urban). As such, we are hoping to obtain community-based information specific to our locale of interest – rural communities within close

proximity that generally do not have convenient or affordable access to resources as do urban dwellers like those in the nearest city of Kisumu.

In the tradition of community-based research, a particular goal of this study is to make a difference in a specific community of interest. It is important to determine present community attitudes towards MC amongst rural Luos after having been influenced by the VMMC scale-up of the last few years. Further understanding of the nuances of high-risk sexual behavior and circumcision attitudes, beliefs, and behaviors of a specific community can then be used to design further interventions among Luo men on the Nyakach Plateau.

CHAPTER THREE

Hypothesis

Primary Research Question

What is the relationship between male circumcision status and condom usage in a traditional, rural Luo community?

Hypothesis: Rural Luo men who are circumcised use condoms more than those who are uncircumcised.

Null Hypothesis: There is no difference in prevalence of condom usage between circumcised and uncircumcised rural Luo men.

Context: Luo culture traditionally expresses negative views towards condom usage and circumcision. Circumcised Luo men who have overcome that traditional barrier to undergo a procedure promoted for reduced HIV risk suggests that they are protection-prone. This implies an attentiveness towards HIV protective measures, which, in this study, includes increased condom usage.

Secondary Research Question

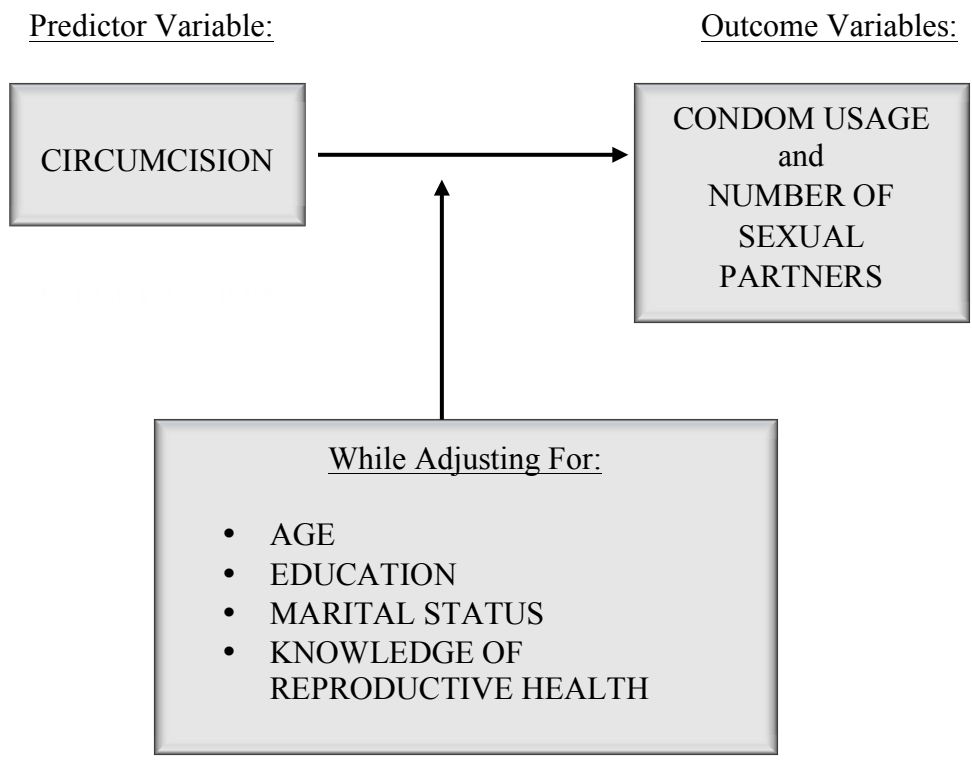
Among traditional, rural Luo men, how does the number of sexual partners differ between circumcised and uncircumcised men?

Hypothesis: Rural Luo men who are circumcised have fewer sexual partners than those who are uncircumcised.

Null Hypothesis: There is no difference in number of sexual partners between circumcised and uncircumcised rural Luo men.

Context: Based on the rationale from the primary hypothesis, circumcised men would extend this protection-prone behavior to reducing the number of sexual partners, thereby reducing their risk of contracting HIV.

Schematic Representation



CHAPTER FOUR

Methods

Study Area and Population

The subject population is composed of Luo males 15-57 years old who live on the Nyakach Plateau within the Nyanza Province of rural western Kenya.

Design and Data Collection

This research is a cross-sectional study of the specified subject group with data gathered by means of a structured interview using a questions designed specifically for this study during a 7-day period from May 17 to May 25, 2012. The study team – consisting of two co-investigators and one native translator - presented the questionnaire through private interviews during at-home visits. Meticulous consideration was given towards an undisturbed interview setting, ensuring the privacy of the subjects and their responses from disclosure.

A closed and open-ended group of questions was compiled from two sources: 1) a medical progress note used for men who presented as patients at the annual temporary clinic held by the non-profit group called Straw to Bread during May of 2012, and 2) an open-ended male health questionnaire formulated for this specific study (see Appendix). Descriptive data was recorded on progress notes modeled after the clinical SOAP note, altered and specified to the needs of a rural Western Kenya population. Dr. Lisa Baker, M.D., Ph.D., formulated this progress note. The questions regarding circumcision, sexual behavior and attitudes, and reproductive health knowledge were administered after men

gave informed consent following their clinic visits. After collecting data at the clinic, the researchers also recruited men in the community as they were encountered in daily interaction. Interviews were facilitated through the use of a male, native Luo interpreter. The questionnaire is designed to collect information regarding circumcision status, condom usage, attitudes towards sexual behavior, and knowledge of reproductive health, with emphasis on HIV transmission.

Circumcision status and number of sexual partners were all measured by self-report. Variables used for statistical measurements are the following: circumcision status, number of sexual partners by category (0, 1, 2-5, 6-9, 10-20, too many to count), education, age, marital status, knowledge of reproductive health, HIV/AIDS knowledge, and condom usage (use vs. don't use, reasons for use).

Knowledge of Reproductive Health

Eight of the questions were modeled after knowledge questions posed to Luo women in related research to obtain a quantitative measurement of reproductive health knowledge among the men. For every question, correct answers were determined after all responses were collected. Answering a question correctly was worth 1 point for a potential maximum of 8 points among each respondent.

Data Entry and Statistical Analyses

Responses were recorded directly on to the questionnaire by the investigators. The Captricity, Inc. data management company performed data entry for the male health questionnaire component of the survey. The progress note data was double-entered into

Microsoft Excel by the two investigators independently, with an error rate of less than 1%. Data management, descriptive analyses, and statistical testing were performed in SAS Version 9.3 (SAS Institute Inc., Cary, North Carolina, USA).

The independent variable of interest was circumcision (circumcised vs. uncircumcised). The two outcome variables were number of sexual partners and condom usage. Potential confounders were age, education, marital status, general reproductive health knowledge, and knowledge about HIV.

Univariate analysis of all variables consisted of frequencies and measures of central tendency (mean, median, and dispersion (standard deviation)). Bivariate analysis included chi-square testing for associations between discrete variables and t-tests for normally distributed continuous variables., Multivariate analysis included logistic regression analysis, multiple regression, and analysis of variance.

Alpha (α) was set at 0.05.

IRB

The proposal for this study was reviewed and accepted by the Baylor University Institutional Review Board.

CHAPTER FIVE

Results

The study sample was comprised of 50 men, and though they were not selected on the basis of whether or not they were circumcised, about half fell into each group (42% uncircumcised and 58% circumcised; see Figure 1). In-depth interviews made it impractical to have a large sample for this study, so statistical power is low. Where meaningful trends are seen in the data, they will be noted, and we expect that some of these findings would emerge as statistically significant with a larger sample. Hopefully, future research will clarify whether the trends are false and are a source of random error or if the results are true and measurable when the statistical power is great enough to detect a relationship.

Sample Proportions

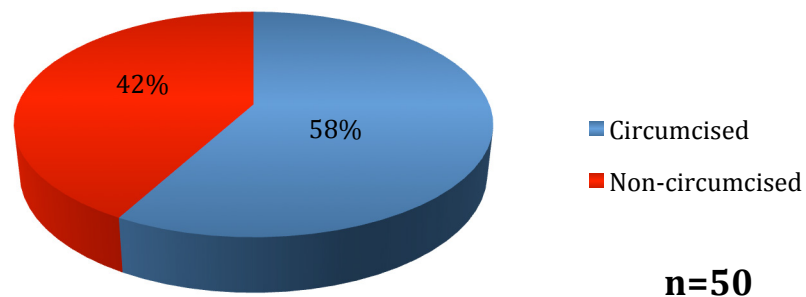


Figure 1

Demographic Characteristics

The average age of men in the sample was 26.65 (range 15-57), and there was no statistically significant difference between the average ages of the two groups. All participants self-identified as Luo. Three-fourths (76.1%) of the males had no more than a primary education. No statistically significant difference was found ($\chi^2=3.76$, $p=0.0523$), but in this sample, circumcised men are four times as likely as uncircumcised men to have some secondary education. The sample was almost equally divided between married (54%) and unmarried (46%) men, though slightly more of the uncircumcised were married (62% vs. 48%), also a statistically nonsignificant difference.

Circumcision

The Decision to be Circumcised

Of the males who were circumcised, 53.57% indicated “protection from HIV” as their sole or primary reason to have undergone the procedure (Table I). Other reasons mentioned for the procedure included “protection from disease other than HIV” (14.29%) and “improvement of hygiene and cleanliness” (21.43%). When men who gave this last answer were asked to clarify, they stated that cleanliness would reduce their risk of acquiring disease in general. Additionally, 17.86% mentioned that they got circumcised because it was “customary.” Given the context of traditional Luo culture which does not endorse circumcision, we asked for clarification, and the response was that it was “customary now-a-days” for sexually active males to be circumcised. This is likely a recent attitude fostered by the 2008 scale-up.

Reasons for Getting Circumcised: Percent Response*	
n=28	
HIV Protection	53.57%
Hygiene/Cleanliness	21.43%
Customary	17.86%
Protection from Disease Other than HIV	14.29%
*%'s include multiple answer responses	

Table I

The Decision NOT to be Circumcised

When the uncircumcised group was asked why they were not circumcised (see Table II), only 3 (14.29%) respondents indicated, “Luo culture does not allow it”. In contrast, 28.57% responded that they were either “in the process of” or “waiting for” the operation. Again, when asked to clarify, respondents meant that they were saving up money to acquire transportation to the VMMC clinics and/or waiting for the most appropriate time given their available resources. 23.81% refrained from the operation because of a fear of pain from the procedure itself. 14.29% replied that circumcision was unnecessary because they were faithful to their partner. Only one individual suggested that circumcision would actually make a man *more* susceptible to disease.

Reasons for Not Getting Circumcised: Percent Response*	
n=21	
In Process/Waiting	28.57%
Pain from Procedure	23.81%
Not Necessary due to Faithfulness to Partner	14.29%
Culture Does Not Allow	14.29%
Do Not Want	14.29%
More Susceptible to Disease	4.76%
Undecided	4.76%

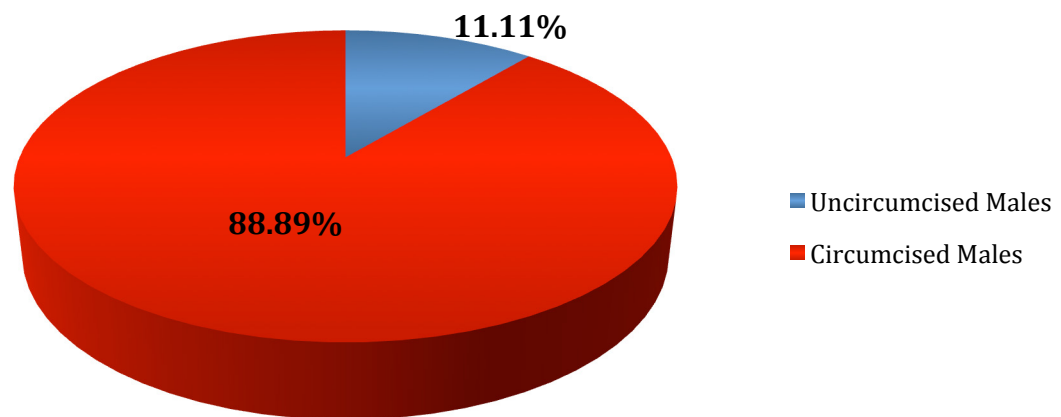
*%'s include multiple answer responses

Table II

Number of Sexual Partners

Results of the sample, as a whole, show that over one-third of the men had 10 or more lifetime sexual partners. On the other end of the spectrum, 16% of the sample had none or only one partner. The results become quite striking when they are stratified between circumcised and uncircumcised men. The majority of circumcised men (55.17%) report having had 10 or more sexual partners compared to the even larger majority of uncircumcised men (85.71%) reporting 5 or fewer partners. In fact, the men who had 10 or more lifetime partners were 8 times as likely to be circumcised (see Figure II).

Percentage of High-Sexual Partner Count (≥ 10) by Circumcision Status



n=50

Figure II

Over one-third (34.48%) of the circumcised men reported that they had had “too many sexual partners to count” (Figure III).

Percentage of Circumcised and Uncircumcised Males by Number of Sexual Partners

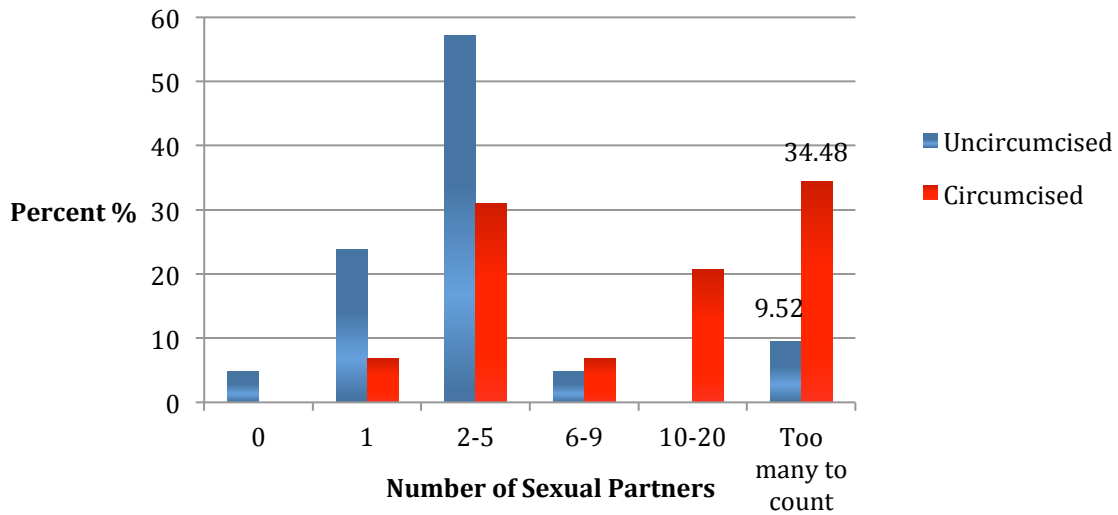


Figure III

Not surprisingly, this huge difference in sexual partners between the groups was statistically significant ($F=14.40$, $p=0.0004$, $R^2=0.2307$) (see Figure IV). These findings do not support the major hypothesis of the study that circumcision will be associated with other protection-prone behaviors. In fact, they are stunningly in the opposite direction. The men in our sample who are circumcised were much more likely to have a high number of sexual partners. It is unknown whether activity with multiple sexual partners occurred before or after circumcision or during both periods.

Distribution of Sexual Partners by Circumcision Status

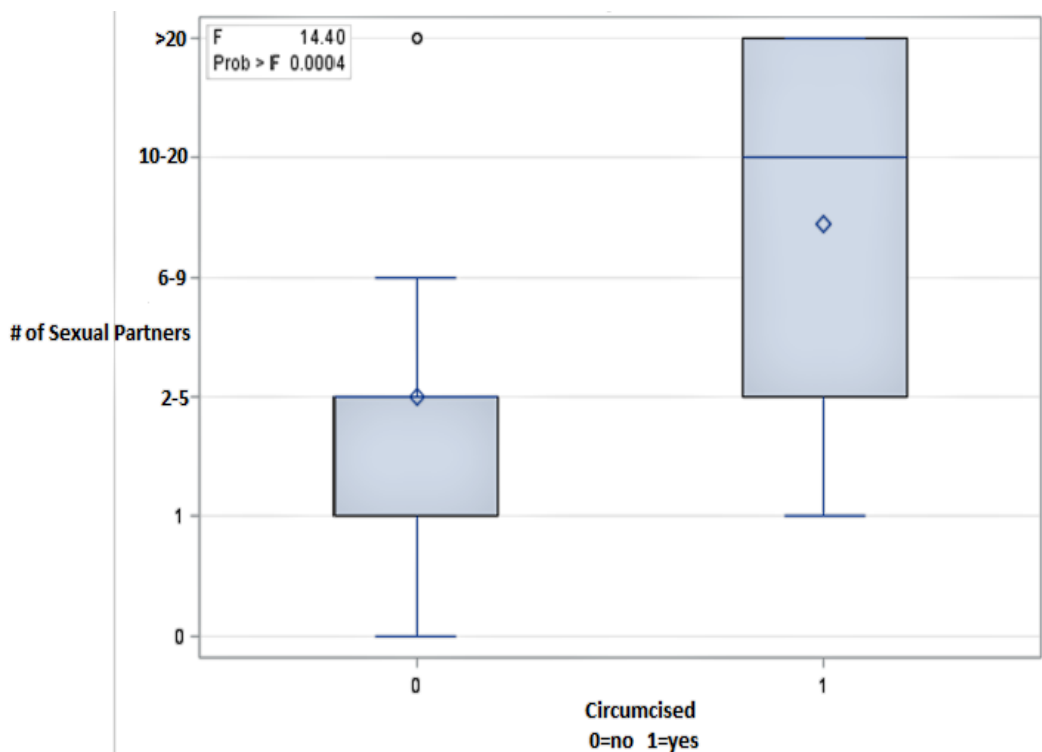


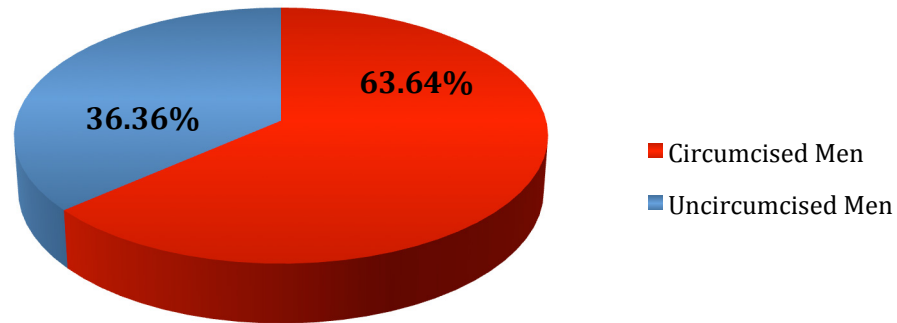
Figure IV

Condom Usage

Results show that, in this sample, 78% of the males currently use condoms (compared to the 61.3% of rural Kenyan males who used condoms *at last sexual intercourse* reported in the 2009 Kenya DHS).

In this area of risk vs. protection-prone behavior, the study hypothesis was again not supported. There was no statistically significant positive relationship between male circumcision and condom usage ($\chi^2=0.1164$, $p=0.733$). Again, it is of interest to note that the men who were not currently using condoms were almost twice as likely to be circumcised (see Figure V).

Percent Not Using Condoms



n=50

Figure V

The theory that men who choose circumcision are more protection-prone is clearly not supported.

It can also be observed that most of the circumcised males were sexually active (81.48%) and using condoms (73.91%) before they were circumcised. Then, following circumcision, about the same proportion of them (75.86%) reported that they currently used condoms. Thus, the circumcision itself did not affect the men's condom use.

Reproductive Health Knowledge

Data shows that among uncircumcised males, the top 3 questions with highest percent correct yield were about "pregnancy duration in women," "HIV/AIDS protection methods," and "problems related to pregnancy (90.48%, 85.71%, 80.95%, respectively) (Table III). For circumcised men, "HIV/AIDS transmission," "HIV/AIDS protection

methods,” and “pregnancy duration in women” were the questions with highest percentages for correct answers. It is clear from this data that basic information regarding HIV preventive measures is generally well known among the men.

Reproductive Health Knowledge Assessment: Percentage Correct by Question		
	Uncircumcised Males (n=21)	Circumcised Males (n=29)
How long does a normal pregnancy usually last?	90.48%	89.66%
What are some ways that people can protect themselves from HIV/AIDS?	85.71%	93.10%
Is it bad for the baby if pregnant woman drinks alcohol during pregnancy?	80.95%	79.31%
Is it bad for the baby if a pregnant woman smokes during pregnancy?	80.95%	82.76%
Name same ways that people can get HIV/AIDS.	71.43%	96.55%
Can a woman get pregnant during period?	61.90%	51.72%
Can a woman get pregnant the first time she has sex?	47.62%	44.83%
How often does a woman normally get her menstrual period?	23.81%	58.62%
	Mean Score = 5.4286	Mean Score = 5.9655

Table III

Using the reproductive health knowledge questions, it was found that the mean score for circumcised males (5.97 ± 1.24) was higher than the observed mean score for uncircumcised males (5.43 ± 1.36). Only among the circumcised group did we observe a perfect score (knowledge score=8, x=2, n=29).

We further stratified by circumcision status to clarify the relationship between education and number of sexual partners. We found no significant relationship in either group ($\chi^2=.2469$, $p=.6193$, $\text{circ}=0$) ($\chi^2=.257$, $p=0.8725$, $\text{circ}=1$).

CHAPTER SIX

Discussion

In our sample of sexually active, rural Luo men, circumcision was found to be a significant predictor of the number of sexual partners. High numbers of sexual partners (i.e., greater than 10) were far more common among circumcised males than uncircumcised males. The 2009 Kenya DHS reported a mean lifetime number of sexual partners for rural Kenyan males to be 6.2 and 5.6 for males from Nyanza Province. We observed that, in our sample, over one-third of the rural Luo males had numbers of sexual partners exceeding 10. These results did not support the expected association between male circumcision and number of sexual partners; furthermore, they are not consistent with other studies, which found no significant difference between lifetime numbers of sexual partners by circumcision status (Westercamp et al., 2010).

Regarding attitudes toward circumcision, our results surprisingly do not correspond to literature in terms of primary barrier to circumcision uptake. While present studies have concluded “Luo culture” to be the primary barrier among men with no current desire to be circumcised, our result found that “fear of pain from procedure” was the main barrier among the sample of rural Luo men. Even more so, of uncircumcised men in general, most of the men indicated that their reason for not being circumcised was because they were actually in the “process of” getting the operation. The overall present attitude towards circumcision in our sample clearly does not appear to agree with what was initially believed to be a deep-rooted cultural belief against the use of circumcision.

Although no significant relationship was found between circumcision and condom usage, we observed a dramatic outcome among the group of males not using condoms. Over two-thirds of the current non-users are circumcised males, and as a sample overall, less than a quarter of rural, Luo males reported not using condoms currently. In terms of condom usage, we have seen that all of the circumcised males who used condoms before getting circumcised indicated “HIV protection” as a reason for use, even if it was coupled with other reasons (e.g., birth control). As was shown, the proportion of circumcised males using condoms before the operation was approximately the same for usage after getting circumcised. Our findings indicate that roughly half (51.3%) of the circumcised men were using condoms strictly for preventing pregnancy after getting circumcised. This suggests that half of the circumcised men no longer believed “HIV protection” was a reason to use condoms after the operation.

Because data was not collected to determine number of sexual partners pre- and post- circumcision, we cannot accurately conclude how sexual partner count is affected after getting circumcised. We simply direct our focus to the strong association between circumcised men and high sexual partners, providing potential scenarios to explain this finding.

Scenario 1:

In one scenario, it is possible that men who were engaging in high-risk sexual behavior by having high numbers of partners understood their risk and were motivated to do something drastic (get circumcised) in order to continue such behavior but with less perceived risk. Again, this is merely one of many possible interpretations for the

associated high number of sexual partners among circumcised males. As for condom usage, 3 out of 4 of these men were condom users before and after circumcision. 100% used condoms for HIV protection before the operation, and half of them no longer believed condoms were necessary for that same reason following the operation. Such behavior, coupled with a theorized high number of sexual partners pre- and post-circumcision, favor the conclusion that MC conferred a false sense of security (i.e., the apparent protective benefit of male circumcision was exaggerated) among men who sought out this procedure. Applying the same scenario principles, we could also explain the association of markedly fewer numbers of sexual partners among uncircumcised males to be a result of pre-existing low-risk behavior and thus having no particular motivation to seek circumcision. This rationale is corroborated by findings in the 2010 Westercamp et al. study, which revealed that having a preference to be circumcised was associated with a history of casual sex partners and was statistically significant. Specifically, the study showed that of men who gave a preference to be circumcised, the majority (58%) had a history of casual sex partners. Among men who did not want to be circumcised, a far smaller percentage (38%) had a history of casual partners (i.e., were not motivated to undergo procedure because of current low-risk behavior). The idea is that men, who have a high number of sexual partners, are very aware of their risk and are motivated to be circumcised because they believe in its protective benefit.

Scenario 2:

It is also conceivable to presume that circumcised males could have reduced number of sexual partners after having been circumcised. This would support the theory in Scenario 1 that circumcision is a measure taken by men with pre-existing high-risk sexual behavior (and explain the high number of partners associated with the circumcised group). In this scenario, a decrease in the number of sexual partners post-circumcision provides evidence for a protection-prone attitude, demonstrating a conscious effort to alter behavior for HIV risk reduction.

However, we believe the validity of this scenario to be highly improbable since these men, in accordance with a protection-prone attitude, could simply reduce their number of sexual partners or increase condom usage in lieu of a procedure that has a reputation for being painful, costly for an already poor region, and against Luo tradition.

Scenario 3:

Scenario 3 fully supports the notion of male circumcision as a protective measure that confers a false sense of security. In this model, we assume that the number of sexual partners is increased following the operation. Given that half of circumcised males stopped using condoms for the purpose of HIV protection, an increase in the number of sexual partners after the procedure would tend towards the idea that risk compensation is occurring among circumcised men.

The 2008 Mattson et al. study assessed the association of risk compensation with male circumcision from participants in Kisumu, Kenya. The study found no evidence to

suggest that circumcised men engaged in increased risk behavior after the procedure and thus concluded “circumcision did not result in increased HIV risk behavior.” However, the relationship we found between circumcision and number of sexual partners does not appear to corroborate this finding, and furthermore, what we have seen regarding condom use would appear to contradict the essential finding in the 2008 study. The study focuses specifically on condom usage as a quantifiable measurement that assesses risk compensation based on number of times condoms were used following circumcision. Our study uniquely addresses a different (more qualitative) component of condom usage – the reason for use – and finds that half of the circumcised men stopped believing in the effectiveness of condoms for HIV protection after their operation. As such, being circumcised would appear to impart some exaggerated sense of security among these men.

Our study had several limitations. As is expected with any survey-based data, self-report bias can be a limitation. Because no confirmatory clinical examination was performed for circumcision status, it is possible to consider misclassification of circumcision status. The study did not identify our expected association between male circumcision and condom usage, possibly due to limitations from a sample size.

Ultimately, our research has shown that advocating for VMMC must be coupled with a particular emphasis on communicating the accurate kind of information about circumcision and its purported benefits. Specifically, we stress the necessity to inform prospective circumcision patients that circumcision is not a foolproof substitute for safer sex practices nor does it completely alleviate the risk presented by engaging in high-risk

sexual behavior (high number of partners and inconsistent condom use). High exposure can potentially counteract whatever protective benefit circumcision was supposed to confer and may even encourage a false sense of security, which could possibly result in increased HIV incidence. It is possible to observe improvements in high-risk sexual behavior (and hopefully, HIV incidence) if such interventions, like VMMC services, are integrated with a comprehensive package of other preventive measures like counseling and resources for testing and treatment.

Our research has shown that we are facing a very complex cultural context in which the customs have been dangerously and perfectly set up to exacerbate the already-present burden of HIV/AIDS. We see a rural culture where there is high unemployment, men who do not get married until they have a job, Luo attitudes that do not discourage multiple partners, the practice of wife inheritance, and a traditionally negative view of condom usage. We are, nonetheless, optimistic as scientific literature presents to us the growing adoption of condom usage and awareness of HIV/AIDS as a serious disease among the Luo people. It is clear indication that the people of this culture have taken the initiative to adapt for survival, prioritizing health in spite of heritage. We could very well presume that efforts are not in vain since the Luo are readjusting, albeit slowly and with mixed results, in accordance with an attitude that health issues trump cultural norms.

APPENDIX

QUESTIONS FOR MALES 14 YEARS OR OLDER:

Date: _____ Village: _____ Interviewer: _____ ID : _____

I- Community Health Assessment Profile (CHAP) Form

II-General Health

<p>1-Have you ever had pain when urinating? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p> <p>1a-If so, how long did you have this problem? Number of days: _____</p> <p>1b-If so, how often have you had this problem in the past year? <input type="checkbox"/> once (1) <input type="checkbox"/> twice (2) <input type="checkbox"/> three or more times (3)</p>	<p>2-Have you ever had penile discharge? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p> <p>2a-If so, how long did you have this problem? Number of days: _____</p> <p>2b-If so, how often have you had this problem in the past year? <input type="checkbox"/> once (1) <input type="checkbox"/> twice (2) <input type="checkbox"/> three or more times (3)</p>	
<p>3- Have you ever had sores in your genital area? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p> <p>3a-If so, how long did you have this problem? Number of days: _____</p> <p>3b-If so, how often have you had this problem in the past year? <input type="checkbox"/> once (1) <input type="checkbox"/> twice (2) <input type="checkbox"/> three or more times (3)</p>	<p>4-Have you ever had warts in your genital area? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p> <p>4a-If so, how long did you have this problem? Number of days: _____</p> <p>4b-If so, how often have you had this problem in the past year? <input type="checkbox"/> once (1) <input type="checkbox"/> twice (2) <input type="checkbox"/> three or more times (3)</p>	<p>5-Have you ever used intravenous drugs? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p> <p>5b-If so, how often have you used them in the past year? <input type="checkbox"/> once (1) <input type="checkbox"/> twice (2) <input type="checkbox"/> three or more times (3)</p>

III-Knowledge and Viewpoints

<p>6-Can a woman get pregnant during her period? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>	<p>7-Can a woman get pregnant the first time she has sex? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>	<p>8-Is it bad for the baby if a pregnant woman drinks alcohol during pregnancy? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>
<p>9-Is it bad for the baby if a pregnant woman smokes during pregnancy? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>	<p>10-How often does a woman normally get her (menstrual) period? Write in: _____</p>	<p>11-During which part of a woman's menstrual cycle is she most likely to get pregnant? Write in: _____</p>
<p>12-Name some ways that people can get HIV/AIDS. Write in: _____</p>	<p>13-What are some ways that people can protect themselves from getting HIV/AIDS. Write in: _____</p>	<p>14-How long does a normal pregnancy usually last? Write in: _____months</p>
<p>15-At what age do men usually marry? Age : _____</p>	<p>16-Do men in the village usually wait until after they are married to have a baby? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>	<p>17-At what age do women in the village usually start having babies? Age : _____</p>
<p>18-How many babies do families in the</p>	<p>19-How often do they have babies? <input type="checkbox"/> every 1-2 years(1)</p>	<p>20-Do men in the village usually plan the number of babies they</p>

<p>village usually have?</p> <p>Write in: _____</p> <p>_____ don't know(99)</p>	<p>___every 3-4 years(2) ___every 5 or more years(3) ___ don't know(99) ___other(9)→</p>	<p>want to have?</p> <p>___Yes (1) ___No(0) ___Don't Know(99)</p>
<p>21-Who usually helps a woman in your village decide how many babies she will have? <i>(check all that apply)</i></p> <p>___husband(1) ___mother-in-law(2) ___mother(3) ___doctor/nurse(4) ___midwife(5) ___don't know(99) ___other(9)→</p>	<p>22-Do you know someone who has had more babies than she wanted?</p> <p>___Yes (1) ___No(0) ___Don't Know(99)</p>	<p>23-Do men and women usually agree about how many babies they should have?</p> <p>___Yes (1) ___No(0) ___Don't Know(99)</p>
<p>24-Have you had any unplanned pregnancies? If so, how many?</p> <p>___Yes (1) ___No(0) ___Don't Know(99)</p> <p>24a-Number: _____</p>	<p>25-When a woman becomes pregnant and doesn't want to have the baby, what usually happens?</p> <p>___Has abortion(1) ___Has baby anyway(2) ___Women always want the baby (3) ___ don't know(99)</p>	<p>26-How often do women in the village have abortions?</p> <p>___never(1) ___don't know(99)</p> <p>Every: ___1-2 years(2) ___3-4 years(3) ___ 5 or more years(4)</p>
<p>27-Where do they go to have abortions?</p> <p>___hospital (1) ___do it at home (2) ___don't know(99) ___other(9)→</p>	<p>28-Who helps them with the abortions?</p> <p>___husband(1) ___mother-in-law(2) ___mother(3) ___doctor/nurse(4) ___midwife(5) ___don't know(99) ___other(9)→</p>	<p>29--Do you think the abortions are generally safe?</p> <p>___Yes (1) ___No(0) ___Don't Know(99)</p>
<p>30-Do you know someone who had problems because of or after an abortion?</p> <p>___Yes (1) ___No(0) ___Don't Know(99)</p>	<p>31-If so, what type of problems did she have?</p> <p>Write in:</p>	<p>32-Is it common for women in the village who have abortions to have problems?</p> <p>___Yes (1) ___No(0) ___Don't Know(99)</p>
<p>33-What do people in the village think about a woman having an abortion? ___accept it(1) ___disapprove(2) ___Other(3)→</p>	<p>34-Would you consider encouraging your wife/partner to have an abortion?</p> <p>___Yes (1) ___No(0) ___Don't Know(99)</p>	<p>35- Do women in the village have a lot of knowledge about what happens inside their bodies when they menstruate or get pregnant?</p> <p>___Yes (1) ___No(0) ___Don't Know(99)</p>
<p>36- How do men in the village usually learn about how their bodies work?</p> <p>___do not learn(1) ___school/teachers(2) ___other men(3) ___doctors/nurses(4) ___wives(5) ___I don't know(99) ___other(9)→</p>	<p>37-Is it common for men in the village to talk about these things?</p> <p>___Yes (1) ___No(0) ___Don't Know(99)</p>	<p>38-What do you think would happen if men in the village knew more about how their bodies work? Would it change anything about their lives?</p> <p>___Yes (1) ___No(0) ___Don't Know(99)</p> <p>OR write in:</p>
<p>39-Would having a</p>	<p>40-Do you think you know enough</p>	<p>50-Is there anything men in the</p>

<p>greater knowledge about their bodies affect men's health in any way?</p> <p><input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>	<p>about family planning methods to be able to use them to prevent pregnancy?</p> <p><input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>	<p>village need to know to be able to better plan their families?</p> <p><input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>
<p>51-If so, what? <i>Write in:</i></p>	<p>52-Do you believe circumcision can reduce HIV spread?</p> <p><input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>	<p>53-If you believe circumcision will reduce HIV, how effective do you think circumcision is?</p> <p><input type="checkbox"/> Help prevent HIV/AIDS but not completely(1) <input type="checkbox"/> Will help prevent HIV/AIDS completely(2) <input type="checkbox"/> don't know(99)</p>
<p>54-Do you believe circumcision is desirable for men?</p> <p><input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>	<p>55-In your opinion, is HIV a problem in your community/village?</p> <p><input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>	<p>56-Do you think HIV can be passed through having sex with someone?</p> <p><input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)</p>

57- Please name all the methods you've heard about for preventing pregnancy:
Write in:

V-Habits/Practices/Realities

58a- Are you circumcised? Yes (1) No(0) Don't Know(99) **58b-Did you have any problems healing afterwards?** Yes (1) No(0) Not Circumcised(2)

<p>If YES →</p>	<p>59-Why did you get circumcised? (Check all that apply)</p> <p><input type="checkbox"/> Protect against HIV(1) <input type="checkbox"/> Protect against disease (Other than HIV) (2) <input type="checkbox"/> Custom/Tradition(3) <input type="checkbox"/> Other(9): _____</p>	
	<p>60- Did you have sex before you were circumcised?</p> <p><input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0)</p>	
	<p>If YES →</p>	<p>61-Before you were circumcised, did you use condoms during sex?</p> <p><input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0)</p>
	<p>If YES →</p>	<p>62-Why did you use condoms during sex before you were circumcised?</p> <p><input type="checkbox"/> Protect from HIV(1) <input type="checkbox"/> Protect from pregnancy(2) <input type="checkbox"/> Both(3) <input type="checkbox"/> Protect from disease other than HIV(4) <input type="checkbox"/> Other(9): _____</p>
	<p>If NO →</p>	<p>63-Why did you not use condoms during sex before you were circumcised?</p> <p><input type="checkbox"/> Do not like to use(1) <input type="checkbox"/> Do not have any(2) <input type="checkbox"/> Unable to get condoms(3) <input type="checkbox"/> Do not know how to use(4) <input type="checkbox"/> Do not believe in us(5)</p>

		_____ Other(9): _____
	If NO →	64- Why are you not circumcised? (Check all that apply) <input type="checkbox"/> Do not want to be circumcised(1) <input type="checkbox"/> Not allowed (family, culture, etc. are against it)(2) <input type="checkbox"/> No one available nearby to do it(3) <input type="checkbox"/> Other(9): _____
65a- Have you ever had sex? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) 65b- How many people have you had sex with? <i>(Write in)</i> _____	66a- If yes, about how many times per month do you have sex with your wife? <i>(Write in)</i> _____ <input type="checkbox"/> Not married(99)	67- What do you believe condoms should be used for? <input type="checkbox"/> Prevent HIV(1) <input type="checkbox"/> Prevent pregnancy(2) <input type="checkbox"/> Both HIV and pregnancy prevention(3) <input type="checkbox"/> Prevent disease (non-HIV) (4) <input type="checkbox"/> Other(9): _____ _____
68- If you are sexually active, do you currently use condoms during sex? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Sometimes(2)	69- If yes, why do you currently use condoms? <input type="checkbox"/> Prevent HIV(1) <input type="checkbox"/> Prevent pregnancy (2) <input type="checkbox"/> Both (3) <input type="checkbox"/> Prevent disease (other than HIV) (4) <input type="checkbox"/> Other(9): _____ _____	70- (If patient uses condoms) If yes, where do you get your condoms? Location: _____
71- Has your wife ever had problems with a pregnancy? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)	72- If your wife had any problems during pregnancy, what were they? <i>Write in:</i>	73- Have you ever had any babies die before they were born? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)
74- If you have lost any babies (before they were born), what caused their deaths? <i>Write in:</i>	75- Have you ever had any children die after they were born? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)	76- If so, what were the causes of their deaths? <i>Write in:</i>
77- How many total children have you lost? <i>Write in:</i> _____	78- What do you use your money for? (Read choices and check all that apply) <input type="checkbox"/> Food (1) <input type="checkbox"/> Prostitutes(2) <input type="checkbox"/> Alcohol(3) <input type="checkbox"/> Healthcare(4) <input type="checkbox"/> Housing(5) <input type="checkbox"/> Cigarettes(6) Other(9): _____	79- Have you given or received money or goods in exchange for sex? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)
80- Is it okay for a woman to refuse sex? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)	81- Do you think it is a man's right to have sex with his wife whether she wants to have sex or not? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)	82- Do you believe it is OK to physically force a woman to have sex if she doesn't want to? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)
83- Have you ever physically forced a	84a- Have you ever had sex with another person who is not your wife? <input type="checkbox"/> Yes (1) <input type="checkbox"/> No(0) <input type="checkbox"/> Don't Know(99)	85- Who is financially responsible for children born to

<p>woman to have sex?</p> <p>___ Yes (1) ___ No(0) ___ Don't Know(99)</p>	<p>84b-If yes, how often?</p> <p>___ several times a week(1) ___ several times a month(2) ___ several times a year(3) ___ did often in the past, but not now(4) ___ did rarely in the past, but not now(5)</p>	<p>women who are not married but become pregnant?</p> <p>___ Woman herself (1) ___ Partner (2) ___ Woman's family (3) ___ Woman's parents (4) ___ Government (5) ___ Don't know (6) ___ Other(9)-></p>
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