

**ASSESSMENT OF KNOWLEDGE, ATTITUDES AND PRACTICES ON LUO
MALE CHILD CIRCUMCISION AMONG PARENTS/GUARDIANS IN
BONDO DISTRICT**

BY

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**The project report is submitted in fulfilment of the Degree of Master of Science in Tropical and
Infectious Diseases (MSc TID)**

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(UNITID)**

Signature 

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ACKNOWLEDGEMENT

I take this opportunity to thank the Almighty God for giving me health and strength during the period of this study. I further express my sincere gratitude to my beloved husband George who has supported me endlessly, both financially and psychologically. My son Joshua and my daughter Sharon have been my greatest inspiration. I also wish to acknowledge and sincerely thank my supervisors, Dr. Machoki and Dr. Oyugi for the time they spent advising, correcting and encouraging me on this project. Finally, I wish to thank Mr. Joseph Otayo and all the head teachers from Bondo District who assisted me in data collection and the data analysts, James and Alfred who assisted me in analysing the data collected.

I wish to let you know that without your assistance my dream to complete this study successfully and on time would have remained just that, a dream! May God bless you!

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
HIV	Human Immunodeficiency Virus
HPV	Human Papilloma Virus
KAIS	Kenya Aids Indicator Survey
KDHS	Kenya Demographic Health Survey
MCC	Male Child Circumcision
MOH	Ministry of Health
NACC	National Aids Control Council
NIAIDS	National Institute of Allergy and Infectious Diseases
STDs	Sexually Transmitted Diseases
STIs	Sexually Transmitted Infections
UNAIDS	United Nations Joint Program on HIV/AIDS
UTI	Urinary Tract Infection
VMMC	Voluntary Male Medical Circumcision
W H O	World Health Organisation

ABSTRACT

In Kenya HIV prevalence rate has been consistently high in Nyanza Province, a province predominantly inhabited by the Luo community. Unlike most other communities in Kenya, the Luo community have very low rates of male circumcision. Male circumcision has been shown to reduce female to male transmission by about 60%. Thus, as part of comprehensive efforts to curb the scourge in the region, there are currently widespread campaigns encouraging adult male circumcision in the region. However, although some studies suggest that circumcision of children could be more beneficial than that of adults, little study has been done to investigate the likelihood of the community adopting the practice of routine male child circumcision. Circumcision in children in many communities depends on the attitude of their parents on this practice.

Therefore, the aim of this study was to assess the knowledge that the community has on the practice of male child circumcision including benefits and dangers associated with the practice. The study further aimed to assess the general attitudes of the community towards the practice. Finally, the level of practice of male child circumcision was also assessed.

The study was a cross-sectional survey in which a cross-section of parents/guardians of male children of age zero to fourteen years was sampled across Bondo District. Interviewer administered questionnaires were used to collect relevant data from the participants. The questionnaires were designed to obtain data on demographic characteristics of the participants, their knowledge, attitude and practice on male child circumcision.

In the analysis, demographic characteristics of the participants, their level of knowledge on the subject of male child circumcision, attitudes toward the subject and current practices were analysed. Participants were generally knowledgeable on the subject of male child circumcision with 68.75% having good knowledge on the subject and 78.4% having a positive attitude. However, the rate of practice of male child circumcision was still low (35%) although this was an improvement compared to the rate of 17% reported by WHO in 2007.

Based on the results, education, awareness on the availability of free services, training of health care providers, abolishing of cultural influence and further research were recommended in order to increase the rate of male child circumcision in the community.

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1. INTRODUCTION

AIDS is currently a global pandemic. Although important progress has been made in preventing new HIV infections and in lowering the annual number of AIDS related deaths, the number of people living with HIV continues to increase. AIDS-related illnesses remain one of the leading causes of death globally and are projected to continue as a significant global cause of premature mortality in the coming decades (UNAIDS/ WHO, 2009).

Sub-Saharan Africa remains the region most heavily affected by HIV, accounting for 67% of HIV infections worldwide (UNAIDS/WHO, 2009). In Kenya, national surveys show that HIV prevalence increased from 6.7% in 2003 (KDHS, 2003) to 7.8% in 2007 (KAIS, 2007). Moreover, there is a significant regional variation in HIV prevalence with Nyanza province recording a prevalence of 15.3% while North Eastern Province recorded 1.0% in the 2007 survey (KAIS, 2007).

In addition to the well known strategies employed in the fight against HIV/AIDS, that is abstinence, being faithful to one faithful and uninfected partner, and the use of condom (popularly referred to as the ABC strategy), research has shown that circumcision of males offers some level of protection against a wide variety of sexually transmitted infections, including HIV/AIDS. The enormous public health benefits of circumcision include protection from urinary tract infections, sexually transmitted HIV, Human Papilloma Virus (HPV), syphilis and chancroid, penile and prostate cancer, phimosis, thrush, and inflammatory dermatoses. In experienced hands, circumcision has been shown to be inexpensive and very safe, can be pain-free and can be performed at any age (Morris B, 2007).

Circumcision rates among the Luo has remained low in the past years as this practice is not part of Luo traditional practices. Conversely, Nyanza Province, predominantly inhabited by the Luo, has consistently recorded the highest HIV prevalence rates in Kenya in previous national surveys (KDHS, 2003; KAIS, 2007). It is against this backdrop that randomized controlled studies were conducted in Kisumu, Kenya and in Rakai, Uganda (Bailey R, 2007; Gray R, 2007) to assess the protective index of circumcision with respect to female to male transmission of HIV. Results from these studies showed that circumcision offered a protection of up to 60% against female to male transmission of HIV. In view of this scientific evidence that male circumcision offers significant protection against HIV transmission, the Kenyan government, in collaboration with several nongovernmental organisations, rolled out the Voluntary Male Medical Circumcision (VMMC) program in order to increase circumcision rate among the Luo adult males and males from other non-circumcising communities.

However, research has also shown that circumcision performed in childhood is more beneficial to an individual than when it is performed in adulthood (Kelly R, 1999; Binagwaho A, 2010). Yet, being an alien practice to the Luo community, adaptation of routine circumcision of the male children may not be without resistance, especially so since the Luo are a people known, not just to be so endeared to their traditional practices, but also to be very sceptical of alien practices.

This study aimed to obtain data concerning knowledge, attitude and practice among parents with male children in order to recommend measures that can be taken to increase the rate of routine male child circumcision among the Luo.

2. LITERATURE REVIEW

In 1986, Aaron J F, MD, kicked off the debate over circumcision status and HIV transmission when his claims that removal of the foreskin is protective against sexually transmitted diseases and HIV were published in *The New England Journal of Medicine* (Aaron J F, 1986). Dr. Aaron believed that neonatal circumcision was ordained by the Bible and was medically necessary. He authored the book; *Circumcision; a decision for life*. He promoted the theory that circumcision could prevent HIV infection although he had no medical evidence (EconomicExpert.com, 2010).

Following Aaron's observations, the topic of circumcision status and HIV transmission widely drew interest among researchers. Observational studies carried out in Africa have revealed that regions of Africa with the highest HIV prevalence rates tend to overlap with the regions where male circumcision is rare (see appendix V fig1). While the northern, western and eastern parts of Africa have circumcision rates of 75% to 100%, the southern parts have very low circumcision rates; 8% in Swaziland, 10% in Zimbabwe, 11% in Botswana, 12% in Malawi, 13% in Zambia, 14% in Uganda, 21% in Namibia, 25% in Uganda, 35% in South Africa, and 70% in Tanzania, 83% in Kenya, 85% in Ghana, 90% in Nigeria, 90% in Angola, 90% in the Democratic Republic of Congo, and 92% in Ethiopia (Drain P, 2006).

In Swaziland, for instance, it is recorded in history that a 19th century king, King Mswati II, banned circumcision as it incapacitated men in times of war (WHO/UNAIDS, 2007). Swaziland has the lowest circumcision rates in Africa at 8% and HIV prevalence rate of 26% (WHO/UNAIDS, 2007), the highest rate in the world. In Kenya, although the overall circumcision rate is 83%, the rates are low among communities that do not practice circumcision as part of their tradition. For instance, circumcision rates 40% among the Turkana and 17% among the Luo (WHO/UNAIDS, 2007). Consequently, HIV

prevalence rate is highest in Nyanza Province, predominantly inhabited by the Luo (15.3% against a national prevalence of 7.8% [KAIS, 2007]).

However, the protective effect of circumcision against transmission of HIV from females to males could not be drawn from the initial observational studies. Consequently, randomized controlled studies were conducted by different researchers to analyze this effect. The first study, known as *The Orange Farm Study* was carried out in South Africa in 2005. In this study, William B et al examined the impact of male circumcision on female to male transmission of HIV. The protective effect of circumcision was reported to be 60% (William B et al, 2006). Similar randomized controlled studies were conducted in Kisumu, Kenya and Rakai, Uganda with more or less similar results (Bailey R, 2006; Gray R, 2006).

Although circumcision can be performed at any age, studies suggest that circumcision in childhood offers more protection against HIV/AIDS than circumcision in adulthood. In 1999, Kelly R et al carried out a study to assess whether circumcision performed on post pubertal men affords the same level of protection from HIV-1 acquisition as circumcisions earlier in childhood (Kelly R, 1999). In this cross-sectional study conducted in Rakai district, rural Uganda, a total of 6821 men aged 15-59 years were surveyed and venous blood samples were tested for HIV-1 and syphilis. Age at circumcision was dichotomized into men who were circumcised before or at age 12 years (pre pubertal) and men circumcised after age 12 years (post pubertal). Post pubertal circumcised men were also subdivided into those reporting circumcision at ages 13-20 years and ≥ 21 year. Analysis of results led to the conclusion that pre pubertal circumcision is associated with reduced HIV risk, whereas circumcision after age 20 years is not significantly protective against HIV-1 infection (Kelly R, 1999).

As far as cost is concerned, a study was conducted in Rwanda to assess cost-effectiveness of male circumcision at different ages. In this study, Binagwaho A et al developed a simple cost-effectiveness model and applied it to three hypothetical groups of Rwandans: newborn boys, 15-year-old boys, and, 30-year-old men. For their model, the researchers calculated the effectiveness of male circumcision (the number of HIV infections averted) by estimating the reduction in the annual number of new HIV infections over time. They obtained estimates of the costs of circumcision (including the costs of surgical supplies, staff time and treatment of complications) and adjusted these costs for the money saved through not needing to treat HIV in so many men. The study concluded that neonatal circumcision is faster, less complicated and has fewer adverse effects than adolescent or adult circumcision. Adolescent circumcision was also found to be more cost effective compared to adult circumcision (Binagwaho A, 2010).

In conclusion, studies have consistently showed that male circumcision is protective against transmission of HIV and other sexually transmitted diseases (STDs). Further, there is increasing evidence that male child circumcision is less expensive, associated with less adverse events, faster healing and lower risks of getting infected with HIV in adulthood than male adult circumcision. In order to optimally realize the benefits of circumcision, therefore, it is necessary to promote male circumcision earlier in childhood rather than later in adult life.

3. RATIONALE

Circumcision protects against sexually transmitted diseases including HIV infection. The Luo community, a traditionally non-circumcising community, bears the heaviest burden of the disease in Kenya currently. The need to enhance circumcision rates among the Luo cannot be overemphasised. This is evident through the enormous efforts currently employed by the government and nongovernmental organisations in promoting the Voluntary Male Medical Circumcision, especially, in Nyanza Province.

HIV/AIDS is a disease of global importance, and in Luo Nyanza, the situation of HIV/AIDS can only be termed a 'disaster'! The economically productive age group is gradually diminishing, and in some homes, all the young men and women have been buried, leaving a trail of desperate children under the care of old and feeble grandmothers. This has led to a spiral effect in the level of poverty, and has contributed to a further increase in the rate of transmission as desperate and unsuspecting orphans fall victims of the disease.

The cost of treatment is high, considering that treatment is lifelong. This is further worsened by the fact that in most cases, the diagnosis is made when the disease has advanced and co-morbidities exist, further increasing the cost of treatment. In a country which is considered resource limited as our country, Kenya, preventive measures would be more cost effective if one were to consider the number of infections averted, the life years saved and consequently the man hours gained in terms of work and the country's economy at large. Thus, if circumcising a male can avert one case of infection by HIV, then the practice should be encouraged by all means.

Scientific evidence is now pointing to the fact that circumcision at a younger age is more medically beneficial than when it is done later in adult hood. Moreover, young boys from non-circumcising tribes who join public institutions such as schools and colleges are often ridiculed by their counterparts from

ethnic communities who practice routine circumcision as they are, usually, already circumcised by the time they join these institutions.

But the decision to circumcise or not to circumcise a male child lies squarely with the parents/guardians. In a community like the Luo, where male circumcision is an alien practice, community members are likely to harbour varied opinions, conceptions and misconceptions as far as this practice is concerned.

While previous studies have described the prevalence of HIV among the Luo, the prevalence of male circumcision and its acceptability, there is no study that has adequately assessed the level of knowledge, attitude and practice among the parents across Luo Nyanza on male child circumcision. This study aimed at describing these variables, and their association with demographic factors, with an aim of making recommendations on issues that if addressed, would increase the rate of routine male child circumcision among the Luo. This, believably, is a step in the right direction as far as the fight against the AIDS scourge in Nyanza is concerned.

4. STATEMENT OF THE PROBLEM

Nyanza Province bears the heaviest burden of HIV/AIDS in Kenya currently, latest statistics showing prevalence rates of 15.3% against a national prevalence of 7.8% (KAIS, 2007). Circumcision rate among the Luo is 17% (WHO/UNAIDS, 2007) against a national prevalence of 83% (Drain P, 2006). Studies have shown that circumcision can reduce the transmission of HIV by up to 60% (Bailey R, 2006; Gray R, 2006).

The practice of circumcision is an alien practice among the Luo community, the predominant community in Nyanza Province. In a study to assess the acceptability of male circumcision and predictors of circumcision preference among men and women in Nyanza Province, the rate of acceptance of male circumcision was shown to be approximately 60% (Mattson C, 2005).

Currently there are widespread campaigns encouraging adult male circumcision in Nyanza Province. Yet, according to research findings, circumcision is more beneficial to an individual when performed in childhood than in adulthood. There is need, therefore, to increase the rate of routine male child circumcision in the community if optimal protective effects of male circumcision are to be realised.

4.1: Research Question

How does knowledge on male child circumcision and attitude toward the practice influence the practice of male child circumcision among parents/guardians in Bondo District?

5. GOALS AND SPECIFIC AIMS

Broad objective

To assess the level of knowledge of parents/guardians, their attitudes and current practices on male child circumcision.

Specific Objectives

- To assess the current practices with respect to circumcision of male children among study participants
- To assess the knowledge of study participants concerning the issue of circumcision of male children
- To assess the attitudes of study participants towards circumcision of male children

6. METHODOLOGY

6.1. Study Design

This was a descriptive study, which sought to describe the knowledge, attitude and practices on male child circumcision among parents/guardians in Bondo District. The design is cross sectional. Using the set inclusion criteria and appropriate sampling method, the target population was identified, sampled across the district and data was obtained from them in an interview that involved only one interaction between the interviewer and the participant.

6.2: Setting

The study was carried out in Bondo District, Nyanza Province.

Bondo district (see fig 6.1, below) is a strip along the northern shores of Lake Victoria. It is made up of three divisions: Nyang'oma, Maranda and Usigu divisions. It is predominantly inhabited by the Luo. Like in the rest of Luo Nyanza, the main economic activities in Bondo district is fishing and subsistence farming.

The prevalence of HIV in Bondo district is comparable to other districts in Luo Nyanza. In 2006 the prevalence of HIV in Bondo district was 7.8% (Siaya 7.6%, Nyando 7.5%, Migori 8.2%, Rachuonyo 7.3%, Kisumu 10.8%). Homabay and Suba districts, however, had very high HIV prevalence rates, standing at 21% (National Aids Control Council, 2006).

6.3. Population and Distribution

The population densities in Bondo District are high in urban centres, shopping centres and beaches where there are considerable economic activities and better infrastructural development.

Table 2.1: Table showing population distribution in Bondo District

Division	Location	Popn size 2006	Popn density/km2 2006
MARANDA	Bondo Township	33100	315
	North Sakwa	8720	300
	South West Sakwa	4603	118
	West Sakwa	4628	145
	Maranda	51062	249
USIGU	Central Yimbo	8014	153
	East Yimbo	8044	157
	Mageta Island	4808	788
	North Yimbo	8135	149
	West Yimbo	20054	670
	Usigu	49055	253
NYANG'OMA	Central Sakwa	25012	216
	South Sakwa	15424	214
	Nyang'oma	40436	215

Source: Bondo District Development Office & District Statistics Office, 2006

From the data above, the population within Bondo District is distributed as follows;

DIVISION	TOTAL POPULATION (Number)	PERCENTAGE (%)
Maranda	102113	36
Usigu	98110	35
Nyang'oma	80872	29
Total	281095	100

6.4. Study Population

The target population for this study were Luo parents/guardians living in Bondo District. Only those who have male children aged zero to fourteen years were included in the study. The participants had to be aged eighteen years and above. Male and female parents/guardians had equal chances of being included in the study. The aim of the inclusion criteria was to include only the parents who had male children and can thus directly influence the decision to have the child circumcised.

6.5. Sample size determination

The prevalence of acceptance of circumcision in Nyanza province according to the acceptance study done by Mattson C et al is 60%. Using a class interval of 5%, the sample size n was calculated as follows:

$$n = \frac{z_{1-\alpha/2}^2 P(1-P)}{D^2}$$

Using $D = 5\%$

$$n = \frac{(1.96)^2 (0.60) (0.40)}{(0.05)^2} \\ = 368$$

6.6. Sampling Method

Twelve schools were randomly sampled, four from each division as follows:

Table 2.2: Schools sampled per division in Bondo District

DIVISION	SCHOOLS (Primary)
Maranda	1. Matangwe
	2. Gunda Sigomre
	3. St. Fidelis Yieke
	4. Ndira
Usigu	1. Pala
	2. Uhanga
	3. Ragak
	4. Ndiwo
Nyang'oma	1. Lenya
	2. Kipasi
	3. Got Abiero
	4. Magak

A meeting with head teachers from the above schools was held at the Lake Breeze Hotel in Bondo Town. The study was explained to them. They were then recruited as data collection assistants. The head teachers also agreed to recruit two other teachers from among their staff members to assist them in data collection.

Male pupils were sampled randomly from each school. Male pupils' names were listed in the alphabetical order. Only children aged below fourteen years were listed for sampling. The order of selection depended mainly on the number of male pupils in each class. In some classes every second child was selected while in some every third or fourth pupil was selected. In the end, three pupils were selected from each of the pre-primary classes giving a total of nine and three from each of the primary

classes. Thus from each school, a total of thirty three pupils were sampled. Children whose parents were teachers were not excluded from the study.

6.7: Recruitment and consenting procedures

The data collection assistants, who included one head teacher and two other teachers, then approached the parents of the above listed pupils. Only one parent was interviewed. Care was taken to include both male and female parents equally in the study.

To each parent, the study was introduced as outlined in the consent form (appendix II). An informed consent was obtained from each of the participants. For those who accepted to participate in the study, a special recruitment form (Appendix III) was used to recruit them into the study.

6.8. Data collection instrument and procedure

Data was collected using a questionnaire (Appendix IV). The questionnaires were administered to the participants in a face to face interview. The questions were read to the participants in English or Dholuo (Luo language). Appropriate responses were then marked on the questionnaire by the interviewer. Those responses that did not match any of the options were listed under "others".

6.9. Quality Control Measures

Attempts to establish quality control was made in all stages;

- 1) Although sampling could not be done from the community due to financial constraints, four schools were randomly selected from the district to ensure a representation of different parts of the district. Subsequently, pupils were randomly selected from pre-primary to primary school to ensure parents were fairly represented. The parents of these children were then recruited and interviewed.
- 2) To minimize interviewer induced errors, the interviewers were taken through the questionnaire question by question. Issues that arose were addressed. The interviewers were further issued with the researcher's contact in case of any questions. During the period of data collection, constant communication with the interviewers was established to ensure sampling, recruitment and data collection procedures were followed.
- 3) To minimize errors arising from the questions, the questions were kept short and simple and simple English was used. Further, the questionnaire was translated into Dholuo (Luo language). The questionnaire was pre-tested during the training of the interviewers to ensure questions elicited the type of responses they were meant to elicit.

- 4) To minimize errors that might have been caused by the respondents, interviewers asked the questions and interpreted them so as to ensure clarity.

6.11. Data analysis

6.11.1. Coding of data

The three divisions were coded as 1 for Maranda, 2 for Usigu and 3 for Nyang'oma. The schools were then coded by linking them to the divisions in which they were situated. For instance, 1.1 was Matangwe in Maranda while 2.1 was Pala in Usigu. Individual participants were allocated unique numbers linking them to their schools and divisions.

6.11.2. Data entry

A database was created using a statistical package. Double entry of data into the database was done for ease of verification. The data was then cleaned for errors, inconsistent entries, missing entries and duplicated entries to ensure high quality data.

6.11.3. Data analysis

Descriptive analysis of demographic variables was done. Variables analysed under descriptive analysis were gender, age, level of education and occupation. These variables were summarised in tables of frequencies and then illustrated graphically. Descriptive notes were added to explain the graphs.

7. RESULTS

7.1. Overview

The targeted sample size was 368. However, only 320 questionnaires were brought back from 10 schools. Two schools, Ndiwo and Got Abiero from Usigu and Nyang'oma divisions respectively, did not return the questionnaires. The questionnaires received formed 87% of the targeted sample size (table 7.1).

Table 7.1: Tabulation of questionnaires received from the divisions

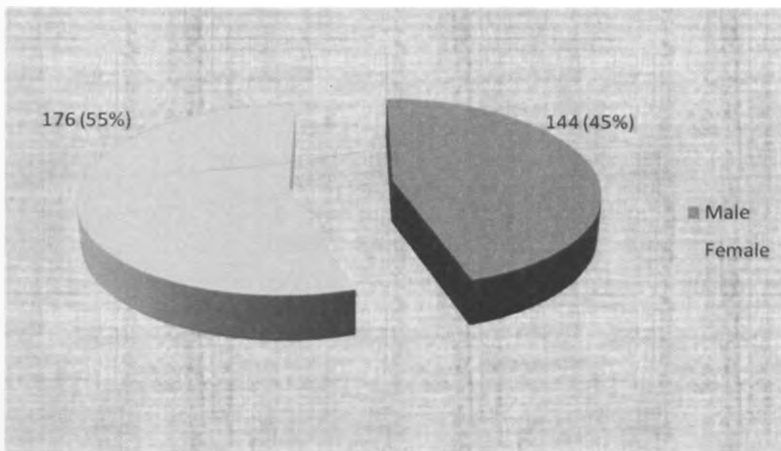
Division	Frequency	Percent
Maranda	122	38.1
Usigu	97	30.3
Nyang'oma	101	31.6
Total	320	100.0

All the four schools from Maranda division (Matangwe, St Fidelis Yieke, Ndira and Gunda Sigomere) returned the questionnaires giving a total of 122 questionnaires. From Usigu division, three schools (Pala, Uhanga and Ragak) returned a total of 97 questionnaires while from Nyang'oma division three schools (Lenya, Kipasi and Magak) returned a total of 101 questionnaires. Got Abiero and Ndiwo from Nyang'oma and Usigu divisions did not return the questionnaires. Questionnaires were received from the schools as summarised below:

7.2. Demographic Characteristics of participants

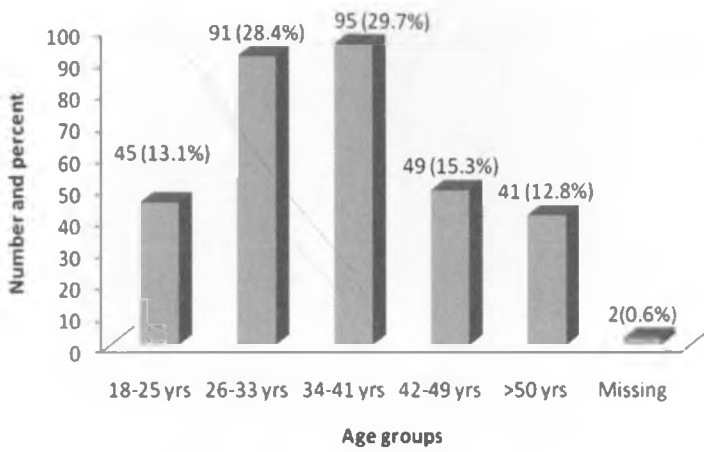
Males and females participated in the study in an almost equal proportion. The males formed 45% of the participants while the females formed 55% of the participants (fig 7.1).

Fig 7.1: Pie-chart representing gender proportions



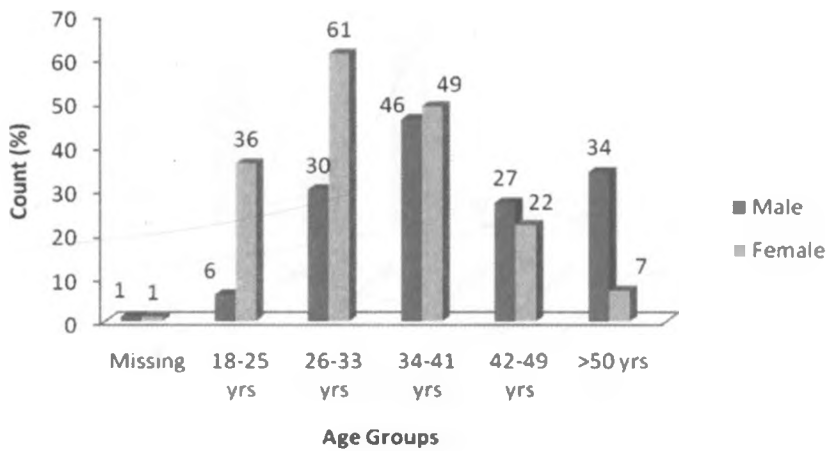
The participants were mainly young parents. The mean age was 37 years, median 36 and the most frequent age 32 years. However, the range was very wide, from 19 to 86 years (fig 7.2).

Fig 7. 2: Bar chart representation of age frequencies



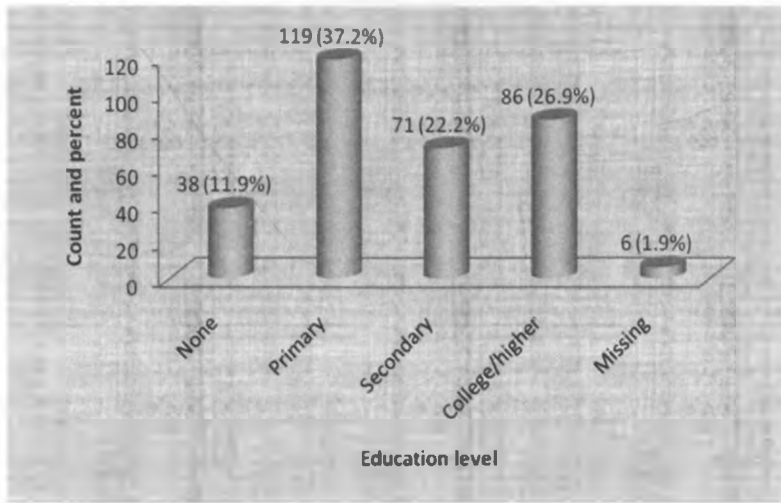
The female participants were generally younger than the male participants, with most of the female participants being younger than 33 years while a majority of the males were older than 34 years (fig 7.3).

Fig 7.3: Bar chart showing age distribution between males and females



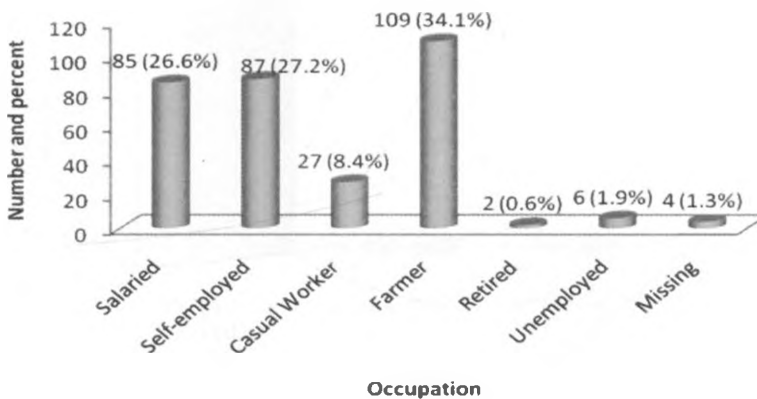
In terms of education, most of the participants had at least primary education (86.2%) while 49% had completed secondary education (fig 7.4).

Fig 7.4: Cylindrical graph representing the level of education of participants



A majority of the participants were farmers (34.1%) followed by self employment at 27.2%. Salaried employees formed 26.6%, casual workers 8.4%, unemployed 1.9% and retired 0.6% (fig 7.5).

Fig 7.5: Cylindrical graph showing occupation of participants



7.3. Participants' knowledge on male child circumcision

Knowledge of definition

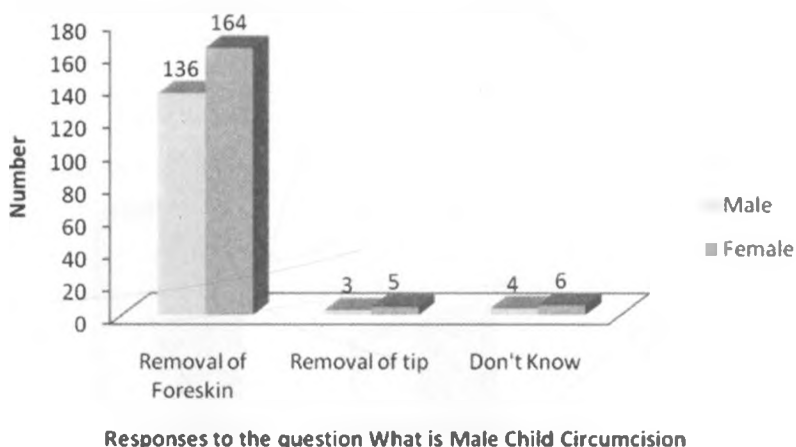
A majority of the participants could define male child circumcision correctly. In response to the question 'What is Male Child Circumcision?' 93.8% of the participants answered correctly that it involved removal of the foreskin. However, 2.5% thought that it involved removal of the tip of the penis while 3.1% admitted to not knowing exactly what male child circumcision entailed (table 7.2).

Table 7.2. Responses to 'what is male circumcision?'

Responses	Frequency (Number)	Percent (%)
Removal of the foreskin of the penis	300	93.8
Removal of the tip of the penis	8	2.5
I do not know exactly	10	3.1
Missing	2	.6
Total	320	100.0

There was only a slight variation in the proportion of males and that of females that defined male circumcision correctly. The proportion of males with correct definition was 94.4% against 93.18% females. The males, therefore, were more likely to define male circumcision correctly compared to females albeit with an almost negligible margin (1.26%) (fig 7.6).

Fig 7.6: Bar chart showing gender variation with correct definition of male circumcision



Although males were 1.2 (odds ratio) times more likely to define male circumcision correctly than females, this relationship was not statistically significant (p-value=0.64 at 95% CI).

Level of general knowledge

In order to objectively assess the level of knowledge on male circumcision among participants, it was necessary to draw up a quantification criterion. The following criterion was used;

Good knowledge

- ✓ Q6: Option 1: must define circumcision correctly
- ✓ Q7: Option 1: Must admit to knowing at least one benefit of circumcision
- ✓ Q8: Must mention at least two benefits of male circumcision
- ✓ Q9: Option 1: Must admit to knowing at least one danger associated with circumcision
- ✓ Q10: Must mention at least one correct danger associated with male circumcision

Low/No knowledge: All the others

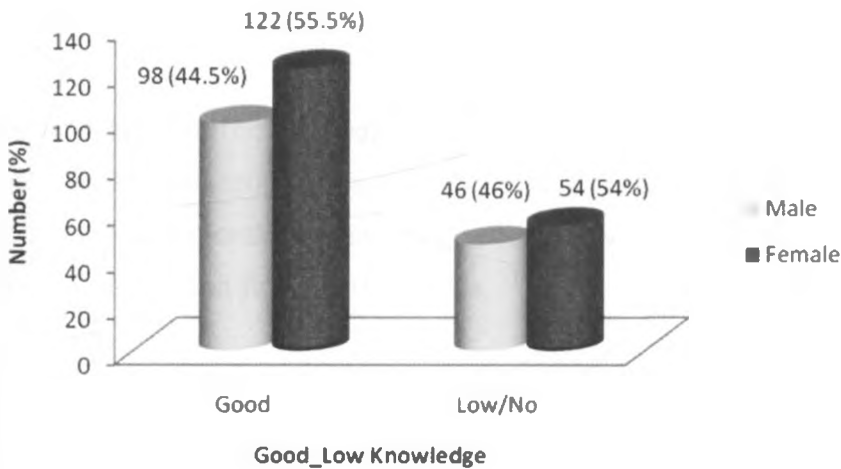
The total number satisfying the criterion for **good knowledge** from the database=220 (68.75%), thus the number with low/no knowledge was 100 (31.25%).

Impact of the demographic characteristics on the level knowledge was as follows:

j) Impact of gender on knowledge

Table 7.7 shows how the level of knowledge varied with gender.

Fig 7.7: Cylindrical graphs showing association between gender and knowledge



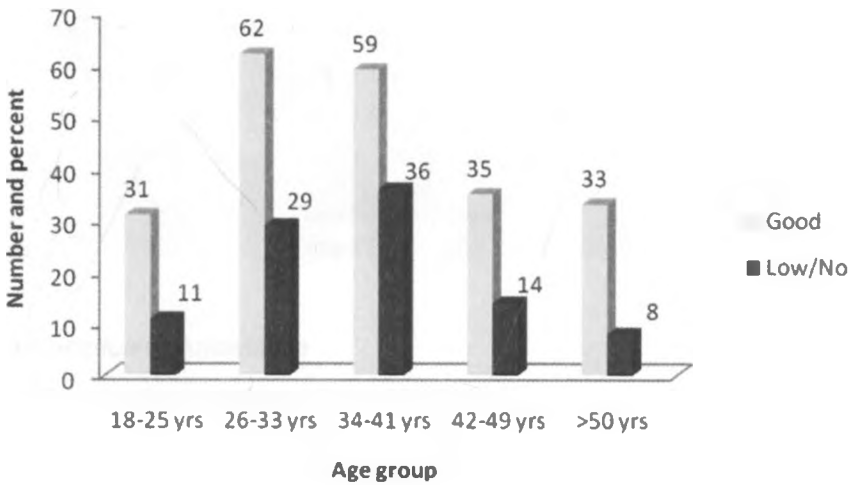
The proportion of females with good knowledge was 69.3% while that of males was 68.05%. Thus female participants were 1.06 times (odds ratio) more likely to have good knowledge on male circumcision compared to their male counterparts. This association was, however, not statistically significant (*p-value* =0.808 at 95% confidence interval).

ii) Impact of age on knowledge

The variation between age and knowledge is shown in fig 7.8.

Statistical analysis of the relationship between age and the level of education showed that the variations observed were not statistically significant (**p-value=0.08**)

Fig 7.8: Bar graph showing the relationship between age and knowledge

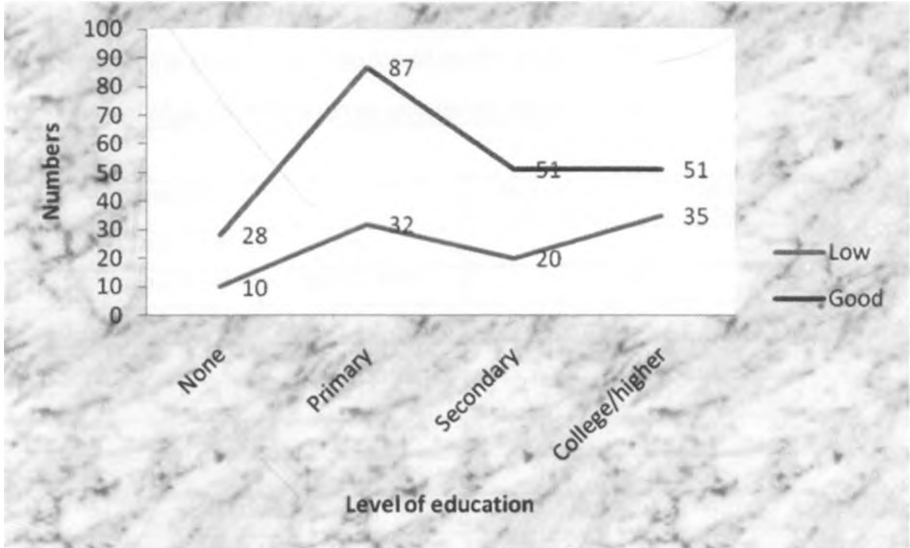


iii) Impact of education on knowledge

The relationship between education and the level of education is shown in fig 7.9.

Statistical analysis of the relationship between education and knowledge reveals that education does not have a significant impact on the level of knowledge.

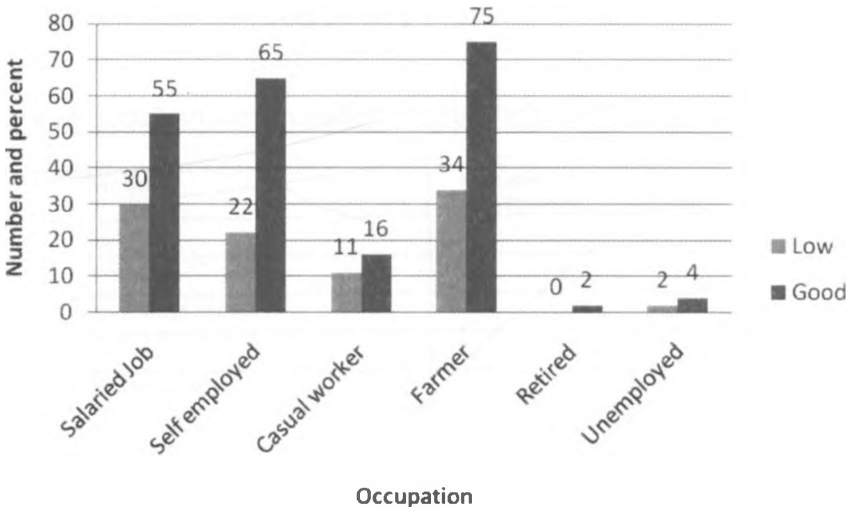
Fig 7.9: Line graph comparing the level of education versus knowledge



iv) Impact of occupation on knowledge

The level of knowledge varied with occupation as shown in fig 7.10.

Fig 7.10: Bar graph showing association between occupation and knowledge



Statistical analysis of the association revealed that the relationship between occupation and knowledge was not statistically significant (p-value=0.53).

In conclusion, the demographic characteristics of the participants had no significant impact on their level of knowledge on male child circumcision.

Knowledge of Benefits of Male Child Circumcision

A majority of the participants (88.8%) admitted to knowing some benefits of male child circumcision. Only 10.6% did not know any benefits associated with the practice. Reduction of HIV and STD transmission, prevention of cancer of the cervix and urinary tract infections were some of the benefits mentioned. Table 7.3 displays the benefits as mentioned by the participants.

Table 7.3: Benefits of Male Circumcision as mentioned by participants

Benefit	Frequencies (Numbers)	Percent (%)
Reduction of HIV transmission	187	58.4
Reduction of transmission of STDs	185	57.8
Prevention of cancer of the cervix	60	18.8
Prevention of urinary tract infections	47	14.7
Cleanliness	17	5.3
prevents phimosis	2	.6
Rite of passage	1	.3
Reduction of Libido	2	.6
Social Acceptance among communities	1	.3

Knowledge of Dangers Associated with circumcision

The participants were knowledgeable on dangers associated with the practice of male child circumcision (79.1%). However, 8.4% of the participants did not know of any dangers. Bleeding, injury to the penis, impotence and pain were mentioned as dangers among others. Table 3.4 illustrates some of the dangers mentioned.

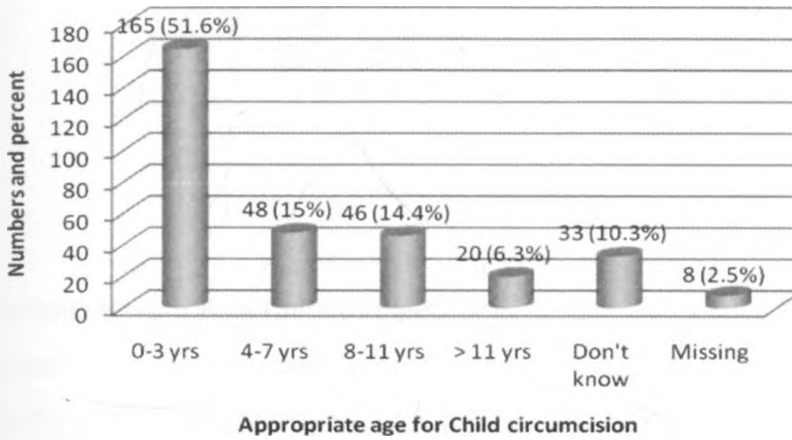
Table 7.4 Dangers associated with circumcision as mentioned by the participants

Danger	Frequencies (Numbers)	Percent (%)
Bleeding	200	62.5
Impotence	21	6.6
Injury of the Penis	117	36.6
Pain	5	1.6
Risk of cancer	1	.6
Genetic Influence	1	.6
Death	1	.6
Infection	7	2.2
Traditional	1	.6
Stigma	1	.6
Transmission of diseases (HIV/AIDS)	2	1.2
Future problems	1	.6

Appropriate age for Male Child Circumcision

Most of the participants felt that the age category of 0-3 years was the most appropriate for male child circumcision. The frequency of responses reduced as the age increases implying that most participants preferred to have their male children circumcised at a younger age rather than at a later age (fig 7.11)

Fig 3.11: Cylindrical graphs representing participants' view on appropriate age for MCC



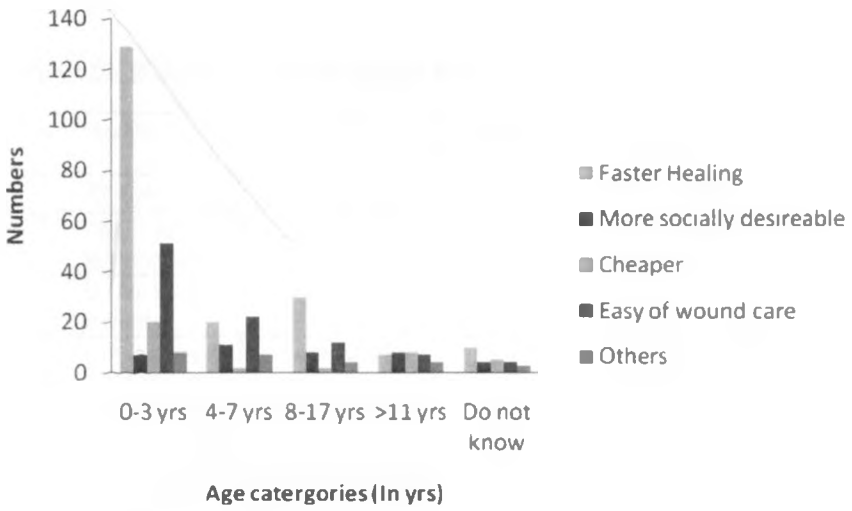
The participants also mentioned the reasons for preference of the age category as outlined in table 3.5.

Table 7.5: Reasons for appropriateness of the age category selected

	Faster Healing	More socially desirable	Cheaper	Ease of wound care	Others
0-3 yrs	129	7	20	51	8
4-7 yrs	20	11	2	22	7
8-17 yrs	30	8	2	12	4
>11 yrs	7	8	8	7	4
Do not know	10	4	5	4	3

Thus, according to the participants, the most appropriate age category for circumcising a male child was that of 0-3 years. The main reason for this choice was faster healing of wound and ease of wound care by parents (fig7.12).

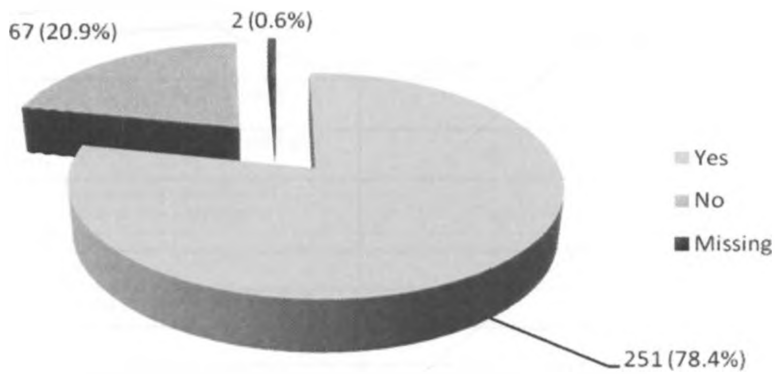
Fig 7.12: A multiple bar charts showing reasons for appropriateness of the age category above



7.4. Attitude toward Male Child Circumcision

Participants generally had a positive attitude towards male child circumcision, with 78.4% of the participants admitting that they liked the idea of male child circumcision. Those who did not like routine male child circumcision formed 20.9% of the participants (see fig 7.12).

Fig 7.12: Pie chart representation of participants' attitude towards MCC



The facts that circumcision goes against cultural practices and can result in injury were the leading reasons why some participants had a negative attitude towards the practice. Other reasons for not liking circumcision were as listed in table 7.6a.

Table 7.6 a): Reasons for disliking the idea of routine MCC

Reason	Frequencies (Numbers)	Percent (%)
It's against our culture	33	10.3
It can cause injury to the child's reproductive organ	19	5.6
Do not know much about this subject	8	2.5
It may cause Impotence to the child in future	5	1.6
The child should be allowed to grow and make his own decision	19	5.9
Children do not like the idea	1	.6
Opposed to merely physical circumcision	1	.6
Unqualified personnel	7	2.2
Endanger life	1	.6
Pain	1	.6
Death	1	.6
They are not telling the truth that it can prevent AIDS	1	.6

However, those who liked the idea believed it was good for the reproductive health of the child, reduces transmission of HIV and STIs, is more socially desirable among other reasons as listed in table 3.6b.

Table 7.6 b): Reasons for liking the idea of routine male child circumcision

	Frequencies (Numbers)	Percent (%)
It's good for reproductive health of the child	83	25.9
It reduces transmission of HIV and STIs	187	58.4
It is more socially desirable to circumcise at this age than in adulthood	49	15.3
It is cheaper	35	10.9
The healing is faster than adults	69	21.3
Cleanliness	1	.6
Home based	1	.6
* Politically unites both Nilotes and Bantus	1	.6
* They don't erect especially at dawn which is normal thing to male adults	1	.6

Factors influencing attitude

The likelihood to have a positive attitude increased with an increase in the level of education (table 7.7). This association was statistically significant (**p-value=0.02**). Conversely, the likelihood to have a positive attitude appeared to decrease with increasing age, a relationship that had a borderline statistical significance (**p-value =0.05**). However, gender, occupation and knowledge did not have any significant impact on attitude.

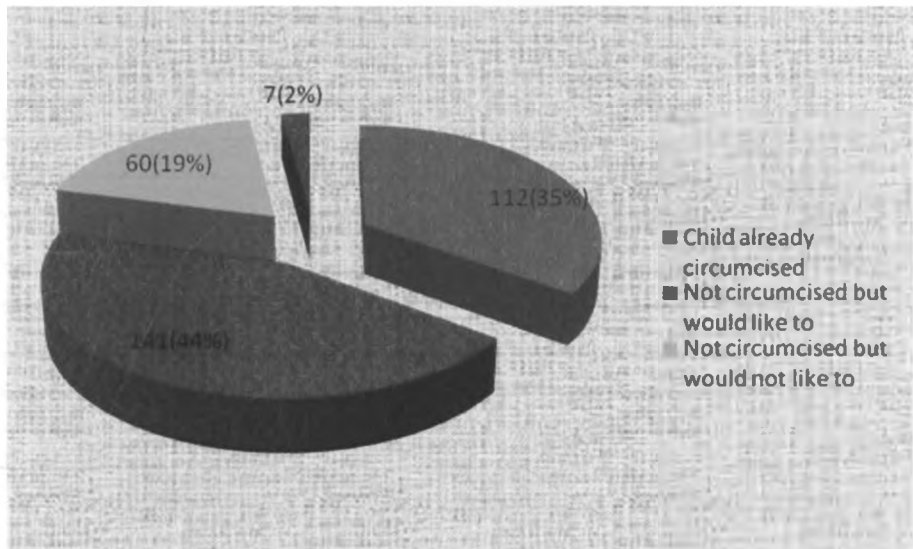
Table 7.7 : Showing the odds ratio (OR) of Socio-demographic variables versus Attitude

Variable	Attitude		OR (95 % CI)	P-value, Chi-Square
	Positive	Negative		
1. Gender				
Male	115 (80.4%)	28 (19.6%)	1.0	
Female	136 (77.7%)	39 (22.3%)	1.2 (0.7 , 2.0)	P (0.56), χ^2 (0.35)
Total	251 (78.9%)	67 (21.1%)		
2. Age category				
18-25 yrs	37 (88.1%)	5 (11.9%)	1.0	
26-33 yrs	75 (82.4%)	16 (17.6%)	1.6	
34-41 yrs	66 (68.0%)	31 (32.0%)	3.5	
42-49 yrs	39 (83%)	8(17%)	1.5	
>50 yrs	34 (82.9%)	7(17.1%)	1.5	P (0.05), χ^2 (10.96)
Total	251(78.9%)	67 (21.1%)		
3. Education level				
None	27 (71.1%)	11 (28.9%)	1.0	
Primary	89 (74.8%)	30 (25.2%)	0.8	
Secondary	59 (84.3%)	11 (15.7%)	0.5	
College/Higher	70 (82.4%)	15 (17.6%)	0.5	P (0.02), χ^2 (4.36)
Total	251(78.9%)	67 (21.1%)		
4. Occupation				
Salaried job	71 (84.5%)	13 (15.5%)	1.0	
Self-employed	65 (74.7%)	22 (25.3%)	1.8	
Casual worker	22 (81.5%)	5 (18.5%)	1.2	
Farmer	84 (77.8%)	24 (22.2%)	1.6	
Retired	2 (100%)	0 (0%)	0	
Unemployed	3 (50%)	3 (50%)	5.5	P (0.3), χ^2 (6.19)
Total	251(78.9%)	67 (21.1%)		
5. Knowledge				
Low/No	79 (79%)	21 (21%)	1.0	
Good	172 (78.9%)	46 (21.1%)	1.0 (0.6 , 1.8)	P (0.98), χ^2 (0.001)
Total	251 (78.9%)	67 (21.1%)		

7.5. Practice on Male Child Circumcision

Only 35% of the participants had taken their male children for circumcision. Those who had not taken the children but would have liked to do so were 44%. However, 19% of the participants had not and would not like to have their male children circumcised (fig 7.13).

Fig 7.13: Pie chart showing practice on male child circumcision



Those who had already taken children for circumcision gave both medical and social reasons for doing so as shown in table 7.8.

Table 3.8 Reasons for taking a male child for circumcision

	Frequencies (Numbers)	Percent (%)
He had a medical that necessitated circumcision	15	4.7
I felt being circumcised would benefit him as a child	31	9.7
I felt circumcising him would be beneficial to his future	78	24.4
I was influenced by neighbour/friend	18	5.6
Cleanliness	1	.3
I heard from media	2	.6
Future universal social	1	.3
Acceptance across the country	1	.3
My Faith	1	.3
The child took the initiative and I had to comply	1	.3
To show that they have reached adulthood	1	.3

However, lack of knowledge on where to take the child, lack of money to pay for the procedure, refusal of spouse are among the reasons that prevented some parents from having their sons circumcised even though they had a positive attitude. Fear of injury, however, was the leading factor that prevented these parents from seeking the procedure (table 7.9).

Table 7.9 Reasons that have prevented parents from taking MCC

	Frequencies (Numbers)	Percent (%)
I did not know where to take him	22	6.9
I did not have money to pay for the procedure	16	5.0
My spouse is against it	16	5.0
I fear the child could be injured	54	16.9
Child did not want	1	.3
Child has not yet attained the age I want him circumcised	2	.6
I have not got time	10	.3
I have not heard of a neat place to take him	1	.3
Child had not yet been born	1	.3
The health facility is far	2	.6
I'm not fully informed on circumcision	1	.3
I do not know the appropriate age	1	.3
I have not consulted my spouse	1	.3
It is a sensitive topic to talk to my boys about	1	.3
Just a matter of carelessness	1	.3
Lack of education on the matter	1	.3
I was lazy	1	.3
My son was left out during the exercise in the area when the officer wanted children circumcised	1	.3
There are myths in my community on the practice	1	.3
Not yet psychologically prepared	1	.3
Pain	1	.3
I'm still talking to them	1	.3
The information about the importance of male circumcision just reached my ears yesterday	1	.3
The ten year old boy has literally refused	1	.3
One of them is a sickler, I fear they could bleed	1	.3
The children are far	1	.3
They aren't willing	1	.3
Will decide on their own	1	.3

Factors that Influence Practice

Table 7.10: Table Showing the odds ratio (OR) of Socio-demographic variables versus Practice

Variable	Practice		OR (95 % CI)	P-value, Chi-Square
	Positive	Negative		
1. Gender				
Male	58 (69%)	26 (31%)	1.0	
Female	54 (61.4%)	34(38.6%)	1.4 (0.7 , 2.6)	P(0.29), χ^2 (1.12)
Total	112 (65.1%)	60 (34.9%)		
2. Age category				
18-25 yrs	10 (71.4%)	4 (28.6 %)	1.0	
26-33 yrs	33 (66.0%)	17 (34%)	1.3	
34-41 yrs	29 (53.7%)	25 (46.3%)	2.2	
42-49 yrs	22 (78.6%)	6 (21.4%)	0.7	
>50 yrs	17 (70.8%)	7 (29.2%)	1.02	P (0.29), χ^2 (6.1)
Total	112 (65.1%)	60 (34.9%)		
3. Education level				
None	15 (60.0%)	10 (40.0%)	1.0	
Primary	32 (56.1%)	25 (43.9%)	1.2	
Secondary	30 (71.4%)	12 (28.6%)	0.6	
College/Higher	34 (72.3%)	13 (27.7%)	0.57	P(0.25), χ^2 (4.11)
Total	111 (64.9%)	60 (35.1%)		
4. Occupation				
Salaried job	36 (76.6%)	11 (23.4%)	1.0	
Self-employed	29 (59.2%)	20 (40.8%)	2.3	
Casual worker	6 (60.0%)	4 (40.0%)	2.2	
Farmer	(78.9%)	23 (21.1%)	2.1	
Retired	2 (100%)	0 (0%)	0	
Unemployed	2 (40%)	3 (60%)	4.9	P(0.27), χ^2 (6.36)
Total	110 (64.7%)	60(35.3%)		
5. Knowledge				
Low/No	33 (60%)	22 (40%)	1.0	
Good	79 (67.5%)	38 (32.5%)	0.7 (0.4 , 1.6)	P (0.3), χ^2 (0.93)
Total	112 (65.1%)	60 (34.9%)		
6. Attitude				
Positive	106(89.1%)	13 (10.9%)	1.0	
Negative	6 (11.3%)	47(88.7%)	63.9 (0.01,0.04)	P(0.01)
Total	112 (65.1%)	60 (34.9%)		

Taking those who have already had their male children circumcised as 'positive practice' and those who would not like to have their male children circumcised as 'negative practice', the impact of socio-demographic factors on practice was shown in table 7.10.

Attitude was the single most important determinant of practice with 89% of those with positive attitude having positive practice and 88.7% of those with negative attitude having negative practice. This relationship is unlikely to have occurred by chance (p-value =0.01).

8. DISCUSSION

Introduction

The results obtained from this study described the demographic characteristics of the participants, their knowledge, attitudes and practice on male child circumcision. As earlier mentioned, the parents were approached through their school going children from twelve schools, four from each of the three divisions in Bondo District.

Principal findings

Demographic characteristics

After randomly sampling the participants, 45% of them were males while 55% were females. This proportion is consistent with the findings of Kenya Bureau of Statistics findings on in the 2009 census results in which the males were 47% while females were 53% of the population in Siaya County (Kenya National Bureau of Statistics, 2009). Participants were mainly a young population with a mean age of 37 years, median of 36 years and mode of 32 years. Indeed, since these were parents of children who are either in primary or pre-primary school, they were likely to be young parents. More than 84% of the respondents had completed primary education while more than 50% had completed secondary education. According to the Kenya National Adult Literacy Survey (KNALS) 2006 report, the literacy rate in the adults was 61.5%. This survey, however, defined literacy in more strict terms, that is, 'the ability to identify, understand, interpret, create, communicate and compute using printed and written material' and not merely 'ability to read and write' or 'completion of primary education'. In terms of occupation, most of the salaried employees are teachers. Farmers formed 34.1% and this can be explained by the fact that most residents of rural Nyanza who are not in formal employment consider themselves farmers.

Knowledge on Male Child Circumcision

Generally, the participants knew what male circumcision entails, with 93.8% correctly citing that it involved removal of the foreskin. However, fewer participants (68.75%) had good knowledge on this subject. A review of literature did not reveal a prior study to quantify knowledge on male circumcision among the Luo. Still, it can be considered that more than half the participants know what male circumcision entails and can mention some benefits and dangers associated with the practice. This can be attributed to the numerous awareness campaigns on male circumcision and its benefits currently taking place in Nyanza Province.

That reduction in transmission of HIV was the most commonly mentioned benefit (57.8%) followed by reduction in transmission of STDs (54.8%) was more or less expected. Circumcision is currently being promoted in Nyanza mainly as a strategy of reducing female to male transmission of HIV. But the participants also mentioned some less known medical benefits such as prevention of cancer of the cervix (18.8%), prevention of urinary tract infections (14.7%), cleanliness (5.3%) and prevention of phimosis (0.6%), indicating that literature on benefits of male circumcision could be available to them. Social benefits appeared to be of little importance to the participants as 'acceptance among other communities' and 'ease of intercourse due to absence of foreskin' were only mentioned by one participant each.

The dangers mentioned by the participants included mainly the adverse events that can occur as a result of circumcision and could explain the fear that most parents have with regards to the practice. Bleeding (62.5%), injury to the penis (36.6%), pain (1.6%), risk of transmitting HIV/AIDS (1.2%) and death (0.6%) are, indeed, adverse events that can result from circumcision. However, there were also some misconceptions like impotence (6.6%), risk of developing cancer following circumcision (0.6%) and that 'circumcision can influence genes'.

Attitude toward Male Child Circumcision

The general attitude towards male child circumcision was positive, with 78.4% of the participants reporting that they liked the idea of routine male child circumcision. The reasons were both medical (reduction of HIV/STI transmission, it is good for the reproductive health of the child, faster healing, etc) and social (more socially desirable, politically unites Bantus and Nilotes, etc). This is consistent with the study done by Mattson et al, 2005, on acceptability of male circumcision and predictors of circumcision preference among men and women in Nyanza Province. The men who preferred to get circumcised in this study believed that it is easier for uncircumcised men to get penile cancer, sexually

transmitted diseases and HIV/AIDS, and that men who were circumcised have more feelings in their penises, enjoy sex more and confer more pleasure to their partners (Mattson C, 2005).

Those who had a negative attitude were the minority, and 'culture' played a major role in determining their attitude. However, the fact that circumcision was not practiced traditionally by the Luo does not translate to the practice being prohibited by culture. Even those who claim to be adherents of cultural practices do not, for instance, remove six lower teeth which was the rite of passage into adulthood for the ancient Luo. Fear of the adverse events such as risk of injury to child's reproductive organ (5.6%) and risk of circumcision being done by unqualified personnel (2.2%), lack of adequate knowledge on the subject of circumcision (2.5%), pain and risk of death (0.6%) also played a role in determining attitude. Reduction of adverse events can thus improve the community's confidence in the practice. One participant responded to this question saying, 'I am opposed to merely physical circumcision' probably referring to religious implications, while another said: 'they are not telling the truth that it can prevent AIDS' meaning he is not convinced by the teaching that circumcision can reduce the risk of being infected with HIV/AIDS.

The younger participants had a more positive attitude compared to the older participants. This may be due to the fact that the younger participants interact more with people from the other communities, the media and are less likely to be attached to traditional practices like the older participants. Similarly, education level significantly impacted positively on attitude. This is also consistent with the findings of the above study by Mattson et al, where women who had more than nine years of education were more likely to prefer their spouses circumcised (Mattson C, 2005). Indeed, those who have higher education are more likely to understand the benefits of circumcision and less likely to put emphasis on cultural practices especially where the latter impacts negatively on the health of the community.

Practice on Male Child Circumcision

Practice on male child circumcision is still low (35%) despite good knowledge and a general positive attitude. There is, however, a significant improvement considering that the circumcision rate among the Luo was 17% in 2007 (UN/WHO, 2007). This can be attributed to increased awareness campaigns on male circumcision, and the rapid results initiative (RRI) launched by the government and several nongovernmental organisations in 2008. A pilot study currently on going by Nyanza Reproductive Health Society (NHRS) dubbed 'mtoto msafi' project is mainly focussed on neonatal circumcision and its benefits.

Medical benefits, influence from neighbours/friends, pressure from the media, religion and the need for social acceptance across other communities are some of the reasons that influenced parents to take their children for circumcision. Interestingly, awareness on the need to get circumcised is increasing among the male children, and the children are taking the initiative to seek circumcision services.

'The child took the initiative so I had to comply', one parent reported this as the reason why he took his son for circumcision.

Fear of injury to the child, lack of knowledge on where to take the child, laziness and lack of psychological preparedness has prevented some parents from taking their sons for circumcision. Some parents would have loved to take the children but the children declined. 'The ten year old boy has literally refused!' confessed one parent. Some parents had just learnt that it is important to take a male child for circumcision; 'The information about the importance of male circumcision just reached my ears yesterday', confessed another parent.

Attitude of the parent is the single most important determinant of practice male circumcision among children, with positive attitude having a strong association with positive practice and negative attitude having a strong association with negative practice, a relationship that is strongly statistically significant. This sharply contrasts the situation among the circumcising communities where individuals are compelled by cultural beliefs to undergo circumcision.

Methodological considerations

The participants interviewed were selected using a school based approach. Pupils were randomly sampled from selected primary schools and their parents interviewed. This could introduce a selection bias on the sample as only parents with pre-primary and primary school going children were interviewed. However, considering the fact that most parents are now taking their children to school because of the free primary education, it is likely that only a small proportion of parents satisfying the selection criteria were left out. The fact that parents of a particular age group of children were targeted could have also influenced the demographic characteristics of the population and resulted in the patterns described above.

Due to financial constraints, it was not possible to supervise data collection as the data collection assistants sampled pupils at school then traced their parents at home. Although it was clearly explained to them that they should administer the questionnaire, it is not clear if they adhered this. This is because the variability expected to emerge when participants are allowed to express themselves

freely without seeing the expected responses did not occur to the extent to which it was expected. It is therefore possible that in some cases the participants were given the questionnaires to self administer leading to more or less homogenous responses.

Conclusions

From this study, it can be concluded that:

- The participants are generally knowledgeable on the topic of male child circumcision and are aware of some of the benefits and dangers associated with the practice.
- Reduction in transmission of HIV and STDs is seen as the main benefit of circumcision while bleeding and injury to the penis are the main dangers associated with the practice.
- The age seen as the most appropriate for male child circumcision is between zero and three years mainly due to the ease of wound care by the parents followed by faster healing at this age.
- The participants generally have a positive attitude towards male child circumcision. High level of education and young age impact positively on attitude. Negative attitude is mainly influenced by culture.
- The positive attitude among the participants has not been translated into practice as the rate of male child circumcision remains low. Fear of injury to the penis is the main deterrent of parents who would like to have their male children circumcised.
- Attitude is the single most important determinant of practice. Positive practice has a strong association with positive attitude while negative practice has a strong association with negative practice. This relationship has a strong statistical significance and is very unlikely to have occurred by chance.

Implications and future research

In actual sense, this study generated more questions than it did answers. For instance, that attitude is the single most important factor influencing the practice of male child circumcision. To what extent does this hypothesis hold water? How much impact do education, age and culture have on attitude? What other factors influence practice and to what extent? Are these factors modifiable? In order to understand the determinants of male child circumcision among the Luo, it is necessary to carry out further analytical studies in order to answer these questions.

9. CHALLENGES

This study was not without challenges. While some of these challenges had been anticipated, others occurred impromptu, and quick adjustments had to be made in order to continue with the study. The following are some of those challenges and how they were overcome.

Financial constraints

With very limited sources of finances, a lot of financial constraints were met. This threatened the progress of the study and the need to complete the study on time. The expenses were kept to bare minimum, for instance, during only one meeting was held with the data collection assistants in a relatively cheap hotel in Bondo town. The assistants were further advised on the scope of the drinks they could order. Lunch was not provided. Their bus fare to Bondo was, however, re-reimbursed.

Sampling challenges

The initial plan was to carry out sampling at the Bondo District Hospital. However, on reaching the hospital, it was realized that most of those who seek medical care at the facility were from Maranda division. Moreover, those who attended the hospital from the other divisions were mainly referrals from the satellite facilities, and were either too sick or had sick relatives, and were generally not willing to participate in the study. On realizing that it might take a relatively longer period to achieve the required sample size from the three divisions, with the approval of KNH-UoN ERB, the sampling approach was changed to a school based approach and a fresh ethical approval was sought.

Sample Representativeness

Due to financial constraints, it was not possible to draw the required sample from the general population. In order to achieve a sample that was as close as possible to representing the whole population, a school based approach was developed. A selection bias, therefore, could have been introduced at the sampling stage. However, with compulsory free primary education, it is likely that most of the targeted population could be reached through their school going male children.

Limited training for data collection assistants

It was not possible, due to financial constraints, to have more than one meeting with the data collection assistants. Thus the researcher introduced herself, gave a detailed explanation of the study and

trained the assistants on how to sample and collect data in the same sitting. The rest of the consultations were done by phone.

Lack of quality assurance measures

It was not possible for the researcher to visit all the twelve primary schools to ensure that procedures were followed as agreed as the schools were dispersed all over Bondo District. It was even more difficult to ensure that the data collection procedures were followed as the teachers needed to follow children to their homes to recruit and interview their parents. Several phone calls were made to try and ensure due process was followed even though this was also very costly, the recently reduced mobile phone tariffs notwithstanding.

Delay of results

Although most data collection assistants returned the questionnaires on time, some assistants delayed in returning their results while others did not return the questionnaires altogether. Attempts to reach the ones who did not return the questionnaires on phone were futile. Since time was also a constraint, analysis of the returned questionnaires was done.

Validation of responses

Campaigns to encourage male circumcision are currently widespread in Nyanza, and Bondo district is not excluded. These campaigns are ongoing in the local media and through non-governmental organisations. Since most community members are aware that male circumcision is currently being encouraged, it is impossible to establish whether the responses given were genuine and personal or whether they were given to satisfy the interviewers' expectations.

Participant fatigue

A lot of research programs on issues concerning HIV/AIDS are currently on going in Nyanza Province. Some of those sampled to participate in this study have participated in many other studies in the past. These participants felt that too much of their time is being consumed by researchers whom they believe are using this information to obtain money from donors. However, in order to obtain their genuine responses, the importance of this study was clearly explained to them.

10. RECOMMENDATIONS

From the results, it can be observed that most of the participants had good knowledge on male child circumcision. The general attitude was good. However, the practice of male child circumcision is still very low among the participants. The recommendations suggested are aimed at increasing the rate of practice of circumcision in the community;

1) Family Education

Education concerning male child circumcision; the process, risks and benefits should be offered to the whole family from the parents to the children both male and female. This would alleviate misinformation, remove stigma associated with circumcision and reduce the number of children declining to be circumcised even though their parents would like them to be circumcised. Education could also reduce the number of couples who are discordant in terms of attitude.

2) Awareness on availability of free services

Some parents alluded to the fact that they would like to have their children circumcised but do not know where to take them. Others said they did not have money to pay for the services. Awareness should be created on the availability of circumcision services in public hospitals. These services are currently being offered free of charge in most public hospitals in Nyanza Province.

3) Training of health care personnel to provide circumcision services

The fear of injury to the child's reproductive organs was echoed throughout the study. It is therefore necessary to reduce the occurrence of adverse events in order to boost the public confidence in the practice. Proper training and certification of health care providers is necessary. The government should be vigilant on supervising these services to ensure only qualified officers offer the services.

4) Abolishing cultural influence

A significant proportion of the participants did not like the idea of routine male child circumcision as it is against cultural practices. Cultural influences can be abolished by education on the importance of cultural dynamism.

5) Further Research

Several questions have been raised by this study. These questions require further analytical studies in order to reveal the real determinants of practice on male child circumcision.

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APPENDICES

APPENDIX I: CONSENT FORMS: ENGLISH VERSION

ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICES ON MALE CHILD CIRCUMCISION IN BONDO DISTRICT

Face to face interviews

NB: This information will be communicated to the participant orally in English or Dholuo

INFORMATION AND CONSENT FORM

Introduction

Hi, my name is Dr. Florence Akinyi Achungo from the University of Nairobi. I am conducting a research to assess the knowledge, attitudes and practices on circumcision of male children aged zero to fourteen years. To obtain this information, I will ask you questions in a face to face interview. You are thus required to listen carefully, understand the question and give an appropriate response.

Objectives of the research

The purpose of this study is to establish what you know about circumcision of male children, the current practices in your community, your attitude towards the practice and what you believe are the socio-cultural factors that influence acceptance of the practice in your community.

Benefits

There may be no direct benefits to you individually for participating in this study. However, the information obtained from this study will benefit your community in that it can be used as a basis for further strategies aimed at addressing health issues in your community.

Risks

I will be asking you questions concerning the issue of circumcision of male children in your community. This topic is closely related to sexuality which you may consider a private topic. I need you to bear with me, open up and share your honest opinion with me. The interview will also consume some of your time.

Compensation

There are no compensation mechanisms for any damages that may be incurred during the interview. The interview, however, will be carried out in a professional manner and care will be taken not to cause any harm.

Voluntarism

Your participation in this study is entirely voluntary. You are free to change your mind any time in the course of the study. There will be no ill feelings towards you if you choose not to participate in this study.

Confidentiality

All the information collected from you in this interview will be confidential. No names will be written down for purposes of anonymity.

You are free to ask any question about any part of this study you do not understand.

Contacts

You may contact for any questions related to this study on the following address:

Dr. Florence Akinyi Achungo

P.O. Box 7837, 00100

Nairobi

Cell phone: 0722386688

For questions related to your rights as a participant, you may contact the chairman of the Kenyatta National Hospital/University of Nairobi Ethics Research Committee on:

KNH/UON ERC

P.O. Box 19676,

Nairobi

Telephone: 22712504

Participant's Declaration

I have read the above information/ the information above has been read for me. I have understood the information as presented. I consent voluntarily to participate in this study.

Participants name _____

Signature/Thumb print _____

Witness name _____

Signature/ thumb print _____

APPENDIX II: CONSENT FORMS: DHOLUO VERSION

CHIKE MA IDEO

NONO NG'EYO, PARO KUOM GI TIMBE MALUORE GI TERO NYANGE MAR NYITHINDO MACHUO EI BONDO

Penjo mar wang' gi wang'

NB: Wehegi ibiro wach kod jachiure e yor wach gi dho Ngere, kata Dholuo

WECHE KOD ANDIKE MAR YIE

Weche mag winye

Amosi, nyinga en Dr. Florence Akinyi Achungo moa e Mbalariany mar Nairobi. Atimo nonro mar nono ng'eyo, paro kod timbe kuom tero nyange mar nyithindo machuo ekind higni nono nyaka apar gi ang'wen. Eka mondo wayud weche gi, abiro penji penjo wang' gi wang'. Owinjore mondo ichik iti mondo iwinj penjogi eka ichiw dwoko ma owinjore.

Dwaro mar nonro ni

Dwaro mar nonro ni en nono gima ing'eyo kuom nyange mar nyithindo machuo, timbe ma pile mar jogweng'u, paroni kuom timbegi kod gik ma in go gi yie ni gin timbe kuonde budho gi chikewa majiwo yie mar nyange e gweng'u.

Ohala

Onge ohala ne in iwuon kuom chiwori bedo e nonro. Kata kamano, weche ma owuok kuom nonroni biro konyo ogandani kendo inyalo tigo mar loso weche moluore kod thieth e gweng'ni e kinde mabiro.

Chandruok

Abiro penji penjo maluore gi weche mag tero nyange mar nyithindo machuo e gweng'u. Wehegi otenore gi weche mag terruok ma samoro inyalo kao kaka wach mipando. Akwayi mondo ing'won koda, ibed thuolo koda mondo imia pachi kaka ing'eye. Penjo ni bende biro kao seche gi mamoko.

Chudo

Onge yor chudo mabiro bedo ka dipo ni iyudo hinyruok e seche mag nonro. Kata kamano, penjo gi ibiro tim e ratiro mamalo kendo gi ritruok ma ok bi kelo hinyruok.

Chiwruok

Bedo ni e nonro ni en chiwruok mari. In thuolo mar loko pachi saa moro amora e chuny penjo. Dwaroni mar weyo bedo e nonro ok bi ketho kindwa kodi.

Maling'ling'

Weche duto ma ichiwo e nonro ni biro bedo e maling'ling'. Onge nying' ma ibiro ndik piny eka mondo orit mari maling'ling'. In thuolo mar penjo mondo olerni kama ok owinjo.

Tudruok

Inyalo tudori kodwa kuom penjo motudore gi nonro e address mondik piny ka:

Dr. Florence Akinyi Achungo

P.O. Box 7837, 00100

Nairobi

Sime: 0722386688

Ne penjo maluore gi ratironi kaka jachiure, inyalo tudori kod jakom mar Kenyatta National Hospital/Mbalariany mar Nairobi Ethics Research Committee e:

KNH/UON ERC

P.O. Box 19676,

Nairobi

Telephone: 22712504

YIE MAR JACHIURE

Asesomo weche mantie malo kanyo/ wehegi osesomna. Asewinjo weche gi kaka okelgi. Ayie mondo achiura e nonro ni.

Nying Jachiure _____

Seyi/Lith luedo _____

Nying Janeno _____

Seyi/lith luedo ma janeno _____

APPENDIX III: RECRUITMENT FORM

1. Sex:

Male

Female

2. Age _____

3. Number of male children aged between zero to fourteen years _____

4. Willingness to participate in the study

Yes

No

5. Participant code _____

APPENDIX IV: QUESTIONNAIRES : ENGLISH VERSSION

A: Demographic Data

Participant Code _____

1. Sex

1. Male 2. Female

2. Age (In years) _____

3. Position in community _____

4. Level of education

1. None 2. Primary 3. Secondary 4. College/Higher

5. Occupation

1. Salaried Job 2. Self-employed professional 3. Business/Trader

4. Casual Worker Farmer 6. Other (Specify)

B: Knowledge about male child circumcision

6. What is male child circumcision?

1. Removal of the foreskin of the penis
2. Removal of the tip of the penis
3. I do not know exactly

7. Do you know of any benefits of male child circumcision?

1. Yes
2. No

If 'yes' go to question 8; if no, skip question 8 and go to question 9.

(Do not read the answers to the respondent, rather, let the respondent give their answer then tick the choice closest to the answer. If it does not rhyme with any of the choices, list it as 'others' then specify).

8. What benefits of male child circumcision do you know?

1. Reduction of HIV transmission
2. Reduction of transmission of sexually transmitted diseases
3. Prevention of cancer of the cervix
4. Prevention of urinary tract infections
5. Others (specify) _____

9. Do you know of any dangers associated with circumcision?

1. Yes

2. No

If 'yes' go to question 10; if no, skip question 10 and go to question 11

10. What are the dangers associated with male child circumcision?

1. Bleeding
2. Impotence
3. Injury to the penis
4. Other (specify) _____

11. What is the most appropriate age for male circumcision?

1. 0-3 yrs 2. 4-7yrs 3. 8-11 yrs 4. More than 11 yrs

5. I do not know

12. What are the advantages of being circumcised at this age?

1. Faster healing
2. Its more socially desirable
3. Its cheaper
4. Ease of wound care by parent/guardian since children have no embarrassment.
5. Others (specify) _____

C: Attitudes towards male child circumcision

13. Do you like the idea of routine male child circumcision?

1. Yes
2. No

14. What are your reasons for (13) above?

If the answer is 'no'

1. Its against our culture
2. It can cause injury to the child's reproductive organ
3. I do not know much about this subject
4. It may cause impotence to the child in future
5. The child should be allowed to grow up and make his own decision
6. Other (specify) _____

If the answer is 'yes'

1. It is good for the reproductive health of the child
2. It reduces transmission of HIV and STIs
3. It is more socially desirable to circumcise at this age than in adulthood
4. It is cheaper
5. The healing is faster than adults
6. Other (specify) _____

D: Practices on male child circumcision

15. Have you had any of your male children circumcised?

1. Yes 2.No

16. If yes, what prompted you to take your son for circumcision?

1. He had a medical that necessitated circumcision
2. I felt being circumcised would benefit him as a child
3. I felt circumcising him would be beneficial to his future
4. I was influenced by a neighbour/friend
5. Other (specify) _____

17. If no, would you like to take your son(s) for circumcision?

1. Yes
2. No

18. If yes, what factors have prevented you from taking your sons for circumcision?

1. I did not know where to take him
2. I did not have money to pay for the procedure
3. My spouse is against it
4. I fear the child could be injured
5. Other (specify) _____

APPENDIX V: QUESTIONNAIRES : DHOLUO VERSION

A: Wach ngimani

Namba mopondo mar Jachuire _____

1. Kido
1. Dichwo 2. Miyo
2. Higa(Higni) _____
3. Tichni ni e gweng'u _____
4. Kar somo mari
1. Onge 2. Primary 3. Secondary 4. College/Higher
5. Tichni
1. Tich ma ichulo 2. Tich ma isomo kendo indikori iwuon 3. Ohala/jauso
4. Jaluedo 5. Japur 6. Mamoko (Ler) _____

B: Ng'eyo kuom tero nyange

6. Tero nyange en ang'o?
 1. Golo pien ma oumo wi duong'
 2. Golo wi duong'
 3. Ok ang'eyo maber
7. Be ing'eyo ber moro amora ma tero nyange nyalo kelo?
 1. Kamano
 2. Ooyo

Ka 'kamano', dhi e penjo mar aboro; ka ooyo, kal idhi e penjo mar ochiko.

8. Ber mage ma ing'eyo ma ikelo gi tero nyange?
 1. Oduoko nyalo mar yudo HIV chien
 2. Oduoko yudo nyach chien
 3. Okonyo e yudo cancer mar od nyuol
 4. Okonyo e duoko chien tuo che ma iyudo e yo mar lach
 5. Mamoko (ler) _____
 6. _____
9. Be ing'eyo hinyruok moko ma tero nyange nyalo kelo?
 1. Kamano
 2. Ooyo

Ka 'kamano', dhi e penjo mar apar; ka ooyo, kal penjo mar 10, idhi e penjo mar 11

10. Gin hinyruok mage ma tero nyathi nyange nyalo kelo?

1. Chwer
2. Otieko teko mar dichwo
3. Hinyruok mar duong' sa ma itimo nyange
4. Mamoko (ler) _____

11. Ineno ni nyathi onego oter nyange ka rom nadi? Higa

1. 0-3 yrs 2. 4-7yrs 3. 8-11 yrs 4. More than 11 yrs
5. Ok ang'eyo

12. En ohala mage ma biro ka oter nyathi nyange e higa ma iyierono?

1. Ochango piyo
2. Oneno maber moloyo tero nyange ng'a ma duong'
3. Odwaro pesa matin
4. Rito adhola mar nyathi yot moloyo ng'a maduong' nikech nyathi onge wich kuot.
5. Mamoko

(ler)

C: Paro ka luwore gi tero nyathi ma wuoyi nyange

13. Be ihero wach mar tero nyathi ma wuoyi nyange?

1. Kamano
2. Ooyo

14. Ang'o ma omiyo iduoko (13) kamano?

Ka 'ooyo';

1. Opogore gi chikewa
2. Onyalo hinyo duong' mar nyathi
3. Ok an gi ng'eyo maber e wechegi
4. Onyalo tieko teko mar nyathi e kinde mabiro
5. Owinjore nyathi odong kendo owuon oyier ka odwaro nyange ka oduong'
6. Mamoko (ler) _____

Ka 'kamano';

1. Okelo ber e ngima mar nyathi e yore mag nyuol
2. Oduoko chien yudo nyach gi HIV
3. Oneno maber ka nyathi oter nyange ka otin moloyo ng'a ma duong'
4. Okao pesa matin
5. Nyithindo chango piyo moloyo ji madongo
6. Mamoko
(ler) _____

D: Timbe ka luwore gi tero nyathi ma wuoyi nyange

15. Be isetero nyathini moro amora ma wuoyi e nyange?

1. Kamano
2. Ooyo

16. Ka duoko en 'kamano', ang'o mane omiyo itere (iterogi) e nyange?

1. Ne en gi tuo mane dware tero nyange
2. Ne aneno ni tero nyange nyalo konye kaka nyathi
3. Ne aneno ni tero nyange nyalo konye e kinde mabiro
4. Ne opuonja gi wadwa moro
5. Mamoko (ler) _____

17. Ka 'ooyo', be diher mar tero wuodi (yawuoti) e nyange?

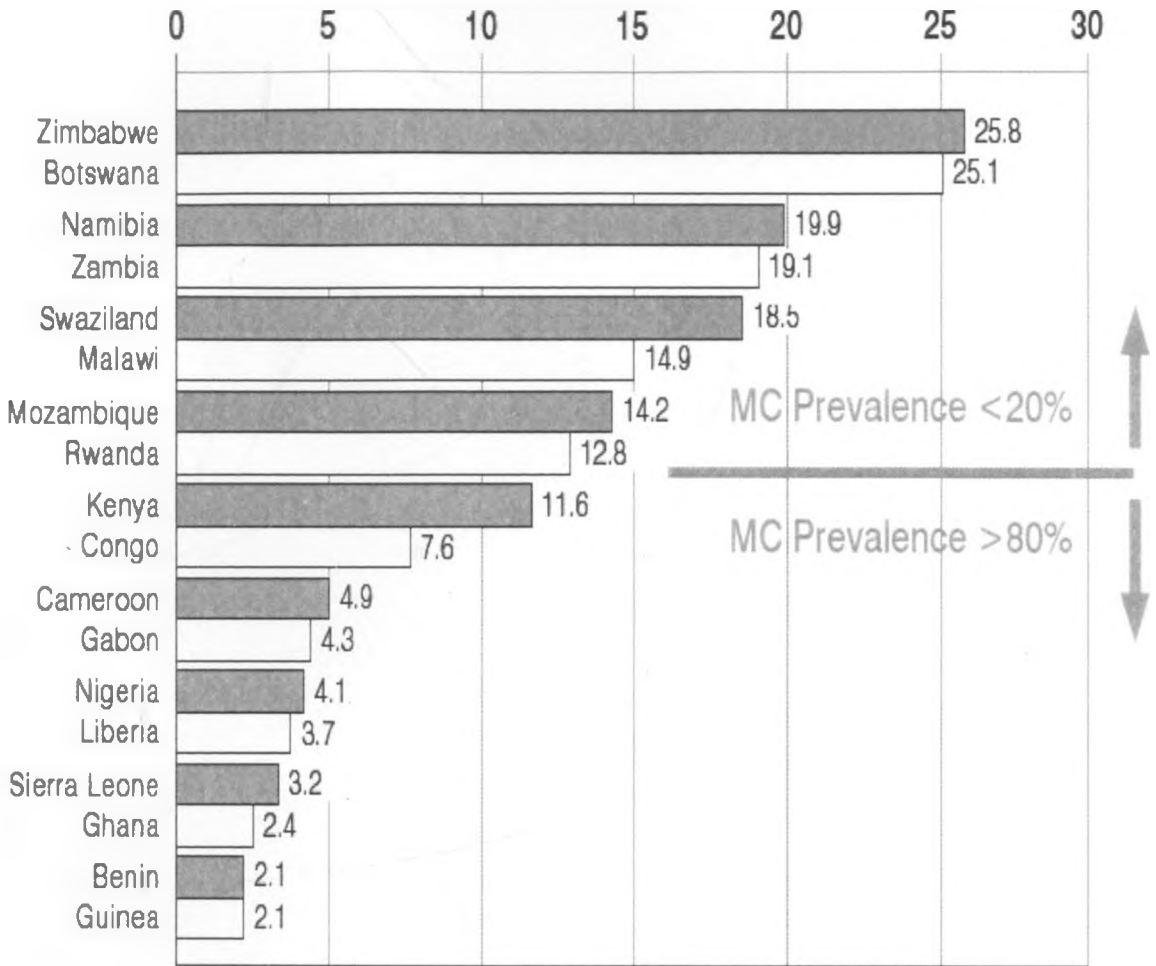
1. Kamano
2. Ooyo

18. Ka 'kamano', weche mage ma ose tami tero wuodi (yawuoti) e nyange?

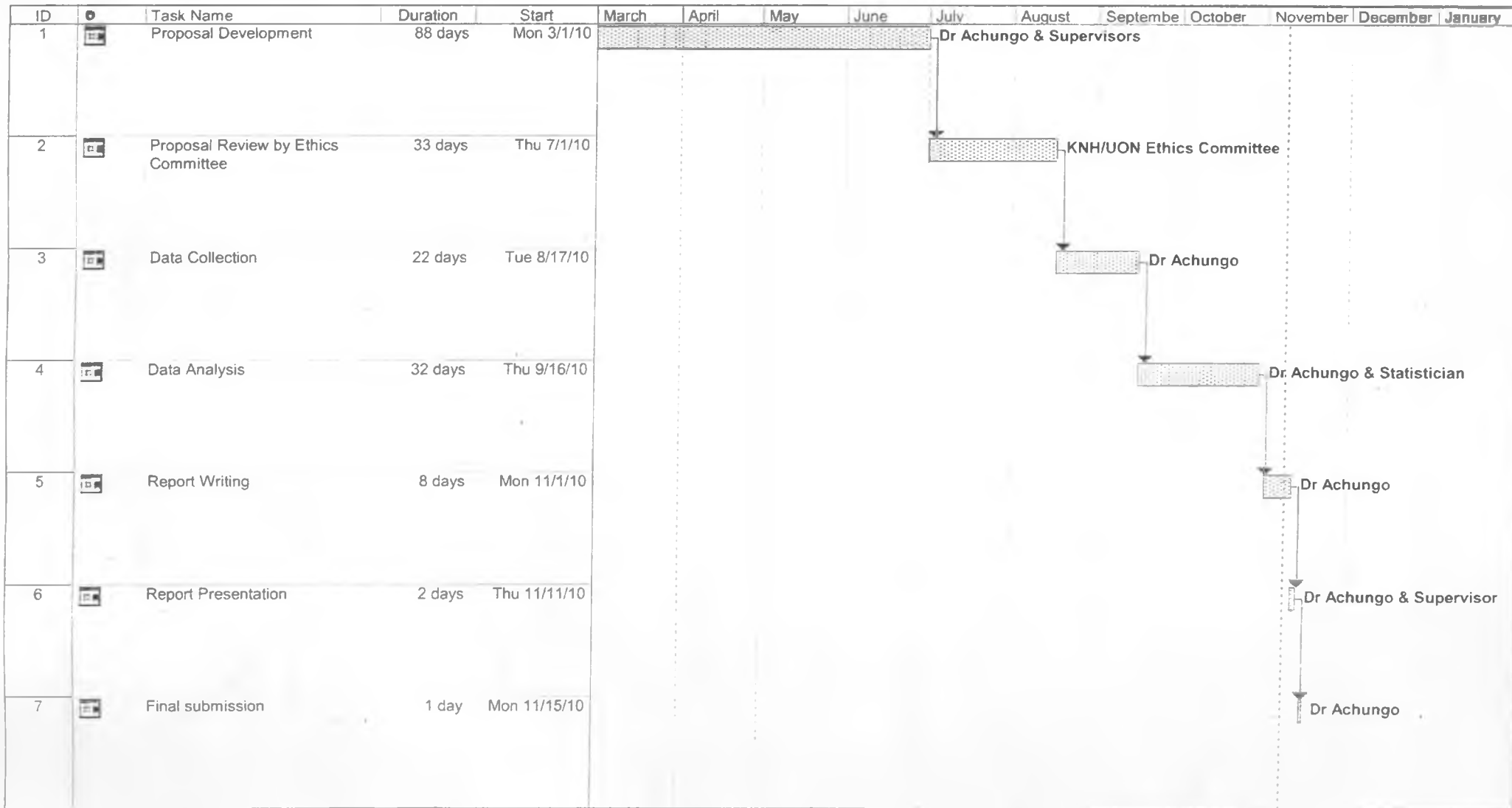
1. Ok nyocha ang'eyo ka ma anyalo tere
2. Pesa ema nyocha aonge godo
3. Jaoda ok ohero wachni
4. Nyocha aluor ni nyathi nyalo hinyore
5. Mamoko(ler) _____

APPENDIX VI: ILLUSTRATIONS

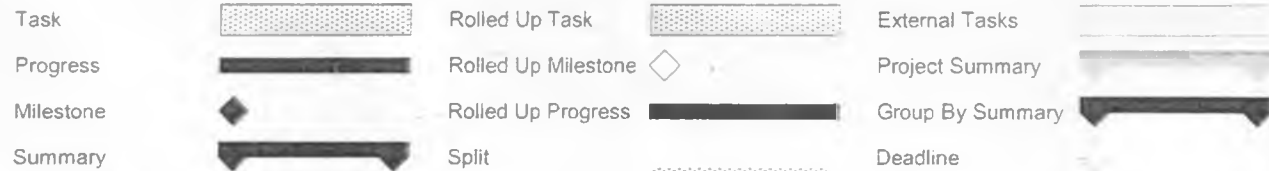
Figure 1 – African Countries HIV and Male Circumcision Prevalence



Sourced from: WHO/UNAIDS; Information Package on Male Circumcision and HIV prevention. Insert 4; pg 1



Project: Project1.mpp
Date: Mon 11/8/10



APPENDIX VIII: EXPENDITURE

Activity	Cost (Kshs)
1. Proposal Development	
• Statistician consultation fee	1000
• Translation of Questionnaires and Recruitment forms	3000
• Printing of the proposal	1050
2. Data Collection	
• Printing of Questionnaires	
➤ 400 Copies in English; =400*2pages @Ksh 10	8000
➤ Translated copies =400*2pages @Ksh 10	8000
3. Recruitment forms	
• 400 copies =400*1 pages @ Ksh 10	4000
• Travelling costs	10000
• Data collection assistants' fee	12000
4. Data Analysis and Reporting	
• Statistician's consultation fee	15000
• Printing of results	10000
<u>Total Budget</u>	<u>72,050</u>