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**Voluntary Medical Male Circumcision for HIV prevention in fishing communities
in Uganda: the influence of local beliefs and practice**

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Running head: VMMC in fishing communities in Uganda

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Abstract

Local beliefs and practices about Voluntary Medical Male Circumcision (VMMC) may influence uptake and effectiveness. Data were gathered through interviews with 40 people from four ethnically mixed fishing communities in Uganda. Some men believed that wound healing could be promoted by contact with vaginal fluids while sex with non-regular partners could chase away spirits; practices which encouraged unsafe sexual practices. Information given by providers stressed that VMMC did not afford complete protection from sexually-transmitted infections, however, a number of male community members held the view that they were fully protected once circumcised. Both men and women said that VMMC was good not just for HIV prevention but also as a way of maintaining hygiene among the men. The implementation of VMMC in high-HIV prevalence settings needs to take account of local beliefs about circumcision working with local religious/social group leaders, women and peers in the roll-out of the intervention.

Keywords: Voluntary Medical Male Circumcision; HIV-transmission; HIV-prevention; Uganda, Africa

Introduction

Three randomized controlled clinical trials (RCTs) conducted in Africa between 2002 and 2006 found that medical male circumcision significantly reduced female-to-male transmission of HIV by about 60%(1-4). Following recommendations by the World Health Organisation and other international bodies, national programmes for Voluntary Medical Male Circumcision (VMMC) are underway in several sub-Saharan African countries with high HIV prevalence and low prevalence of male circumcision, as part of HIV combination prevention packages. An estimated nine million VMMCs have been undertaken since 2007 in eastern and southern Africa (5, 6). It is estimated that 20 million VMMCs are needed to achieve an 80 percent coverage of VMMC by 2025. If this coverage could be achieved and maintained, about 3.4 million new HIV infections could be averted, reducing the number of people needing HIV treatment and care, as well as saving considerable sums of money in future treatment costs (7, 8). However, the realization of these benefits depends on the willingness of individuals and families to participate in and support interventions such as VMMC.

Uganda is one of the countries with low prevalence of male circumcision and although uptake of VMMC services is increasing, it remains below the target set by the Government of Uganda (9). The Uganda Ministry of Health aims to circumcise 80% (4.2 million) of all uncircumcised men aged 15-49 years by the end of 2015. From 2008 to 2013, Uganda achieved about 50% VMMC coverage with uptake among younger boys higher than in older men (10, 11).

In a number of countries in Africa, VMMC is being scaled up to provide men with partial HIV-protection, and by extension protection to their sexual partners. It is being introduced into settings where male circumcision exists, either for religious reasons (in the case of Islam, for example) or as rite of passage marking the transition from boyhood to manhood. Traditional circumcision rituals have been subject to change because of missionary, colonial and post-colonial influences, including the introduction of medical male circumcision (12-14). While VMMC may not be seen as a substitute for traditional circumcision practices because of the value placed on a ritual which tests the bravery of the boys, a shift towards VMMC because of safety concerns is being observed in some settings (14).

A number of studies have compared uptake of VMMC in societies with and without a tradition of male circumcision (15-20). These studies show that the introduction of VMMC in societies where male circumcision is not part of religious or cultural practice has not been without challenges because of the association of the act with ethnic and religious identities (21, 22). In Zimbabwe, where the majority of ethnic groups do not practice circumcision, Hatzold and colleagues (23) and Moyo and colleagues (24) describe the social and cultural barriers to introducing VMMC. In South Africa too, local concepts of ethnicity and identity have influenced the perceptions and uptake of VMMC (25, 26).

The impact of existing beliefs about circumcision on the uptake of VMMC in trial settings has been described in recent studies. In Nyanza province, Kenya, for

example, the site of one of the three VMMC RCTs (2), acceptability studies which preceded the trial in a predominantly non-circumcising area found religious and cultural concerns cited as barriers to uptake (27). Yet, despite some opposition from Luo elders, community and political leaders endorsed male circumcision in the area. By December 2011, 52.2% of consenting uncircumcised men in Nyanza Province had been circumcised (28). This was despite considerable setbacks in the campaign as a result of forced circumcisions during the post-election violence in 2008 (22). Further research in Nyanza Province in 2012 found that cultural factors were not mentioned by respondents as being barriers to VMMC; the main concerns about the procedure were fear of pain and time away from work (29).

Medical male circumcision is generally seen as an important component of HIV combination prevention interventions (30, 31). Given the experience in other settings, described above, we may expect traditional practices and beliefs to influence the uptake of VMMC in Uganda given that the majority of ethnic groups in Uganda do not practice circumcision for cultural or religious reasons. The prevalence of traditional male circumcision based on self-report is estimated to be 20% (15, 32). This prevalence is considerably lower than in Kenya (80%) or Tanzania (70%) but similar to many Southern African countries (15).

The aim of this paper is to examine the influence different understandings and beliefs about male circumcision may have on VMMC in fishing communities on the shores of Lake Victoria, Uganda; an ethnically mixed setting with high HIV prevalence.

Study setting

HIV incidence in fishing communities in Uganda ranges from 3.3-6.7 cases/100 person years (pyr), compared to <1 case/100 pyr nationally (33-37). The populations living in many fishing communities are of different ethnicities, from within and outside Uganda, as people come because of economic opportunities. Therefore, there is no cultural homogeneity regarding traditional male circumcision, and we would expect a range of different beliefs and perceptions about circumcision at these sites.

We conducted a qualitative study of the beliefs and perceptions about circumcision in four fishing villages on the shores of Lake Victoria, Uganda. The study villages are the location of an HIV combination prevention pilot study ('HIVCOMB'), which is a pilot parallel-arm cluster randomised trial with four fishing communities divided into two pairs based on geographical proximity. The overall aim of the trial in which this study was embedded is to investigate factors limiting access to HIV prevention interventions and to determine the feasibility of conducting an HIV combination prevention effectiveness trial to reduce HIV incidence among fishing communities in Uganda.

The four villages are in three districts of Kampala, Wakiso and Mpigi. Village one is a landing site very close to Kampala city which includes a busy semi-permanent market which attracts traders from around the area. Tilapia and Nile perch fish are commonly sold here to wholesalers for export and local consumption. Surrounding this village are entertainment places used by local urban residents, as well as village residents. As in

most fishing communities, alcohol is widely available, as is access to commercial sex (33, 34, 38). There are a few public clinics in the area as well as small shops selling medications over the counter. Although the Baganda are the majority ethnic group, the community is ethnically diverse with people from almost all parts of Uganda as well as from neighbouring countries (Rwanda, the Democratic Republic of Congo and South Sudan). While the majority of the residents are Roman Catholics there is a large number of Muslims living at the site, according to the records held by the local authorities.

Village two is also near urban settlements and specialises in the catch and sale of Tilapia and Nile Perch. The site has shops selling medications and a small private clinic but no public health facility. The majority of residents travel 8-10 kilometres to access public health facilities close to Entebbe town. The village, in common with many other fish landing sites, has many bars selling alcohol and pool tables for entertainment, and commercial sex is available. The site is also ethnically diverse with people from western, northern and eastern Uganda, however the majority are from central Uganda.

Village three is a rural site in Mpigi District, it is made up of three small landing sites. The village serves as a hub for nearby islands on Lake Victoria, including for entertainment with local music groups regularly coming to perform. The main fish caught and traded are Tilapia and small silver fish locally known as *mukene*. The nearest government health facility is 10 kilometres away. The area attracts people from

many different ethnic groups, including Rwandese migrant fishermen as well as people from other parts of Uganda.

The fourth village is made up of two small landing sites. This community has a large number of immigrants from the Democratic Republic of Congo and Rwanda who share a common history, heritage and sub-culture. There is a bar with a large pool table which provides entertainment but many people from the site go to another village nearby where alcohol and drugs (marijuana and khat) are available. The nearest public health facility is about seven kilometres away. The main fish caught and traded at this site are Tilapia and silver fish and Nile Perch.

Methods

HIV Combination prevention (HIVCOMB) study design and sample selection

We conducted a cluster survey as a prelude to the cluster randomised pilot trial in the four fishing villages described above.

Quantitative data collection

Following a population census and other preparatory activities in each community, a baseline sero-survey was conducted in July-August 2014. In each community a stratified random sample of 280 participants was selected. The stratification was based on age (18-24, 25–34 or ≥ 35 years) and gender, and the strata were sampled with different sampling fractions with the youngest age group being over-sampled in order to include relatively more HIV-uninfected participants. The combination prevention

package was implemented in the two intervention communities from September 2014 and will finish in December 2015. The interim sero-survey was conducted in March to May 2015.

The HIV combination prevention package includes two broad categories of intervention: (1) Biomedical package: VMMC, HIV treatment and care, increased access to counselling, improved linkage to ART, including PMTCT (Option B+); (2) Behavioural package: Health education, condom promotion, counselling and testing, health education in both community and individual sessions.

Qualitative data collection included 40 life history in-depth interviews with key informants in the four communities (10 from each village). These participants were drawn from different sections of the population and representing different age groups, as well as men and women were selected purposively for one-on-one interviews from each community. Key informants were chosen on the basis of the positions they occupied which gave them a privileged position to comment on the area activities, including key social, geographical, economic and cultural aspects. We also purposively recruited those who possessed information on the make-up of the communities and, in particular, sexual risk behaviours. These people included area leaders, teachers, village health team leaders, traditional birth attendants, bar owners and operators, health workers operating in health centres in the area and elders. The sample also included recently circumcised men. These individuals were identified through observations by the field teams and interactions with area guides. Data were

augmented by informal interviews with community members during the VMMC implementation.

Interviews were conducted by a male and female interviewer based on a semi-structured topic guide that was informed by research questions which focused on knowledge and perceptions of risk behaviours and the effectiveness of prevention approaches. Each interview lasted about one hour. We conducted these interviews after the initial trial team had been in the area for about three months in order to allow us to understand better the key aspects that inform the behaviour among the fishing communities. This period also helped us to identify key informants as well as men who had participated in the VMMC exercise that was part of the combination prevention package.

Throughout the data collection the qualitative study team met to discuss emerging findings; this allowed the continued refining of the topic guide to incorporate new and interesting thematic areas as they emerged. This process continued until we had reached saturation point in terms of emerging themes. The interviews were broad ranging, including discussion of participants backgrounds (history of mobility, livelihood options, family setup), experience of living within the context of a fishing community, available social and economic amenities, local cultures and belief systems and HIV and AIDS related perceptions and beliefs. The available prevention and care options were also discussed.

The primary data presented in this paper are the qualitative data collected on male circumcision among circumcised and uncircumcised men, and women. Data were analysed manually through the construction of thematic matrices which captured key themes related to perceptions and experiences regarding medical male circumcision. Pseudonyms are used for the individual participants were refer to in this paper. A limited amount of quantitative data is included in this paper to provide some background information on the prevalence of circumcision in the study communities. These data were analysed using Stata release 12.1, taking into account the sampling design.

Findings

The dominant group of people living in the four villages were from the Baganda ethnic group from central Uganda, a traditionally non-circumcising people. However, there were people from different parts of Uganda including the Bagisu (a traditionally male circumcising community in eastern Uganda) as well as a small minority of people from traditionally circumcising communities from the Democratic Republic of Congo which practiced male circumcision. Others included people from west Nile (Northern Uganda) and from western Uganda, not traditionally known to practice male circumcision. Other minorities came from non-traditionally circumcising communities in South Sudan,

Rwanda, Kenya and Tanzania. While all these ethnic groups mixed freely with each other, many identified strongly with their own cultures and ethnic identity.

The estimated prevalence of reported circumcision at the baseline survey varied from 41.4% to 66.3% (p-value for heterogeneity=0.004; Table 1). These data were collected from all men who participated in the survey, not only those who were later included in our sample.

Table 1 here

As a part of the activities in the trial a total of 541 men were subsequently circumcised during a two week VMMC camp in the two intervention villages in October 2014.

Four of our male participants in the qualitative component had been circumcised during the VMMC camps, case studies from these men are given below. All four men were from non-traditionally circumcising communities. The interviews took place just after the camps so they offered a very recent account of their experience. We summarise the information provided by these men, to highlight different views and behaviour following circumcision before providing a broader perspective on VMMC from other key informant interviews.

Case studies (pseudonyms are used)

Ngege, recently circumcised - village 1.

Ngege is a 45 year old man who claims to have been one of the first residents of his fishing community. He is married with a wife and they now rear chickens to make a living. Ngege took part in the circumcision camp as part of the trial. The surgery had happened about a month prior to the interview and Ngege said that he and his peers did not completely adhere to the medical workers instructions about wound cleaning, and sexual abstinence before full wound healing. Ngege had used a powdered detergent on the wound. The medical workers had warned against using this detergent, but Ngege said that local people had recommended it because it had the power to promote better wound healing. Ngege was also strongly advised by peers to have sex with another woman who is not his regular partner as a cleansing ritual after circumcision. This advice was given to him in the spirit of saving his marriage. To Ngege's surprise, even his wife strongly advised him to have sex outside their marriage before he could have sex with her. His wife is from a traditionally circumcising community in eastern Uganda and this is practice from her culture. One of Ngege's friends, who was circumcised on the same day, had resumed sex before the wound healed to 'get bad luck out of the way'. Ngege claims to have resisted having sex before his wound healed and claims to have refused to have sex outside his marriage.

Owen, recently circumcised - village 1.

Owen is a 33 year old fisherman. He was born at the fishing site, village 1. Owen had been circumcised during the circumcision camp. He said he would recommend it to every man to help a man to be clean. He mentioned that it reduced the risk of getting sexually transmitted diseases like gonorrhoea, syphilis and candidiasis (but not HIV).

He also mentioned increased sexual pleasure since having the procedure. He had been circumcised a month before the interview. He said that two days after being circumcised, the dressing was removed and he started treating himself with lukewarm water mixed with salt. By the end of the first week he said he had begun healing and getting dry. In the second week he said he had healed completely and he began having sex with his wife. He says by the time of the interview slightly under a month after the circumcision was done he had had sex with his wife three times. His wife is very happy that he has been circumcised because she is a Muslim and had complained before that he was not circumcised.

John, recently circumcised - village 3.

John is 20 years old. He dropped out of school and began fishing in his early teens, moving away from his family in a rural area who were struggling because of poverty. He moved to site 3 when he was 16 years old. At the time of the interview he was cohabiting with a woman whom he referred to as his wife. John decided to get circumcised during the trial circumcision camp because he was concerned about his risk of sexually transmitted infections. Alcohol, drugs and women dominated his stories about his life and he used the word 'fun' a lot when talking about his leisure activities. He says that after fishing most people gather in bars or places where they can access alcohol and eat pork while playing pool. When explaining why he had got circumcised he mentioned the value of better body hygiene and reduced risk of catching syphilis and gonorrhoea. He did not mention HIV. The day before his circumcision he sent his wife away to the village because he thought that if she stayed at home she would hinder

his healing process, because they would have sexual intercourse and this would cause him much pain. Nevertheless, a month after being circumcised John found a sex worker and had sex with her, without using a condom. He said that his friends who had already been circumcised encouraged/advised him to do this to prevent 'promiscuous spirits' from entering his wife. They told him that the first woman he had sex with after the circumcision would automatically become promiscuous and John did not want this to happen to his wife. He believed he had done his wife a favour. He now claimed that as a result of circumcision sexual pleasure had increased several fold and he was really glad to have undergone the procedure.

Simon, recently circumcised, village 3.

Simon is 23 years old. He is not married and lives alone. He works in a small private school in the area. He was circumcised during the circumcision camp. He said that he had not had sex since circumcision because he had been told not to resume sexual activity before six weeks had passed. He said he was already noticing the hygiene improvement having had his foreskin removed.

Other community members' views

Not all the men in the study sites were as willing as the four men described above to undergo VMMC. There were those who worried about the wound healing period affecting their work, which the health workers told them was six weeks, saying that it was too long and they could not risk getting disrupted for that long. Some of these men

worried that caring for the wound would disrupt their work because they needed to be in the water for long periods of time. Others had known people who had had a bad experience with circumcision which had scared them from undertaking the procedure themselves. Such bad experiences included too much bleeding or stories of circumcision causing impotence. Since male potency is very important especially in the fishing communities where sexual prowess is revered, the fear of experiencing such was too much for some. Two men, both Baganda, said they were not against being circumcised, but felt that the timing was wrong as they had not completed rituals they needed to perform around other personal events that required having sex. Both these men had recently had twins and the culture in Buganda required them to perform these rituals.

A number of respondents mentioned the belief in the healing power of vaginal fluids during the post circumcision process. It was believed that vaginal fluids had the power to heal wounds from cuts and snake bites as a form of first aid and was also used on burns. Many women mentioned that they had used this to treat themselves and their children who had any injuries. Some men who wanted a faster healing process felt that having sex to benefit from the contact with vaginal fluids would help them.

Many people interviewed were very supportive of VMMC, including the majority of women who mentioned that they wished their sons to be circumcised. Men and women said that circumcision is good not just for HIV prevention but also as a way of maintaining hygiene among the men. However, there was some concern about men

who were offered VMMC misinterpreting the health messages which accompanied the procedure:

[Regarding VMMC] it has generally been successful and the fishermen have turned up in big numbers because they have heard that it prevents the spread of HIV by sixty percent. The problem is that when they know that there is this percentage where risk of HIV infection is reduced, they want to have unprotected sex as if the sixty percent is now a hundred percent.

(Male, 59 years, Village health team leader)

A health worker pointed to the various challenges which may stop people coming forward for circumcision:

Circumcision is good because it reduces risk of STDs including HIV, cancer of men and cleans the men [...]. However, some men fear being circumcised because they are told that circumcision causes men to be impotent and that it reduces the man's life span. Another point is that those who circumcise give the circumcised ones' little medicine and the wound becomes septic and when this is seen by others they refuse to go for circumcision exercise. Others fear to go in for circumcision because they do not know how they can survive during the healing process, who could give them money since they are the bread winner and are not working during that period. (Female, nursing assistant, aged 24)

Some key informants felt that the emphasis in the messages accompanying VMMC that the procedure provided 60% protection was over emphasised. They felt that for a setting such as fishing communities where people engaged in high risk behaviour such a message was risky. A village health worker reported that:

...The problem is that when they know that there is this percentage where risk of HIV infection is reduced, they want to have unprotected sex as if the sixty percent is now a hundred percent. (Male, Village health team member, aged 59)

Some of the young men who were reluctant to undergo circumcision pretended to be Muslims (and therefore claimed to already be circumcised) in order to avoid circumcision. Others feared that they would have to undergo an HIV test before being circumcised and so found excuses to avoid the camp. Other perceptions focused on cultural and religious issues, for example the fear that VMMC involved the suturing of the surgical wound whereas circumcision done culturally or by Muslims did not require suturing and therefore resulted in quicker and better wound healing with minimal scarring.

However, some cultural activities were supportive of VMMC. A Muslim cleric in one fishing site encouraged his uncircumcised followers to undergo the procedure. Immediately after the procedure, he invited post-operative participants to the mosques and conducted an Islamic ritual. When asked why he had done that, he said that he saw the VMMC exercise as a useful strategy to get more uncircumcised men to

embrace the Islamic faith. However, this action may have fuelled rumours which spread in that community about the purpose of circumcision:

Some of the people brain washed young children who were willing to participate that every person that was circumcised was turned into a Muslim which hindered some of the children from participating. Many people were not willing to participate in circumcision but the token 10,000/= that was given to them for taking part, encourages many people to participate in circumcision regardless of knowing the purpose and importance of circumcision (Female, Village mobilizer, 39 years)

Discussion

Voluntary medical male circumcision is being rolled out in many parts of sub-Saharan Africa as part of HIV prevention initiatives. While uptake has been encouraging in many places, with men from non-traditionally circumcising communities coming forward, there are many places where there is resistance to the practice (19, 21, 39, 40) or misconceptions about the purpose of circumcision. Our findings indicate that while messages about the biomedical value of VMMC were reported by study participants, these messages were sometimes mixed with beliefs drawn from traditional circumcision practices. Other research has shown the importance of understanding such long held beliefs which influence the use and uptake of biomedical technology (24, 41, 42) as well as the importance of taking into account other community member views, including the views of men's sexual partners in order to support VMMC; a finding

also illustrated in recent work in Zambia (43, 44) Uganda (45) and northern Tanzania (46).

In settings with mixed ethnic groups, such as the fishing communities where this study was set, the messages about the purpose of VMMC, and the procedures to follow to promote healing, compete with beliefs which promote unsafe behaviour (47, 48). The practice of having multiple sexual partners, as a demonstration of a man's masculinity, a practice associated high risk behaviour may affect the uptake and consequently HIV protection (49-51). We have found in similar settings that men are reluctant to use condoms even with casual partners (52); faith in the efficacy of circumcision to provide protection, may make condom use even less likely (42, 53).

Key local people such as traditional and religious leaders from different ethnic groups might be helpful in providing support for an approach that takes into account local beliefs about circumcision(39). In a study in Botswana Katisi and Daniel (19) have shown the obstacles that the roll-out of VMMC can encounter when traditional leaders are not engaged in the process. The purpose of VMMC is open to misinterpretation within a setting that has a mixture of people from different ethnic and cultural backgrounds. In such settings it is important that VMMC support activities go on beyond the event of circumcision, so that misconceptions might be addressed in a timely fashion. The young man who had sex with a woman who was not the regular partner in order to protect his regular partner from promiscuous 'spirits' following

circumcision is a case in point. He relied on advice from peers rather than from the health workers.

Our findings provide insights into the local beliefs, however we may have missed the views of some important groups given the size of our sample and the mixture of people in the four communities. We conducted interviews in Luganda (the main local language) and English. We did not have the capacity to speak to all the languages used by residents so we could have missed important information from these people. We are cautious about over generalising our results, because the composition of the population and the key opinion leaders in determining local behaviours may differ from one location to another. Nevertheless, we think that our study offers more insight in managing prevention programmes in high risk and multi-ethnic settings.

Conclusions

Individual and community wide misconceptions about VMMC can be addressed by engaging with local knowledge systems through planned community engagement, as demonstrated in other places where non-circumcising groups form the majority (25, 28, 29, 54). Community engagement activities, with local religious and group leaders, women and peers, as well as with the men being circumcised, undertaken during the implementation of VMMC, need to be repeated during the post event period as a way of challenging misconceptions and harmful practices.

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