Acceptability of Male Circumcision
Among Men and Women
For Prevention of HIV Infection in Uganda

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Date
ABSTRACT

In the last decade three randomized controlled trials in Kenya, South Africa, and Uganda have shown that male circumcision reduces the sexual transmission of HIV from women to men, as reported by the World Health Organization (WHO). The purpose of this study was to assess the current situation in Uganda with regards to male circumcision (MC) in order to provide decision makers with adequate information to decide whether and how to promote male circumcision as an HIV prevention strategy. This paper highlights circumcision of young children because they are an overlooked target group for HIV prevention efforts. Objectives of this assessment were to measure the acceptability of MC among men and women including their roles as parents.

Following recommendations from the WHO document, “Male Circumcision Situation Analysis Toolkit”, mixed-method data collection was conducted across four Ugandan districts. A two-stage household survey of 833 adult males and 842 adult females, focus group discussions, and a health provider survey were conducted in each district.

Acceptability of MC was positive and substantial after respondents were told that recent studies show that male circumcision reduces the risk of transmission of HIV from women to men. In uncircumcised men, between 40% - 62% across the districts would consider getting circumcised. Parental support of MC for sons ranged between 60% to 86% of fathers and 49% - 95% of mothers, across the four districts. Widespread support exists among men and women in this study for promoting medical MC as part of Uganda’s current ‘ABC+’ HIV prevention strategy. Any MC intervention should clearly stress that MC should not be depended on solely to prevent HIV. Existing reservations and barriers to medical MC must be carefully addressed for the intervention to succeed.

Keywords: HIV-1, male circumcision, infant circumcision, Uganda, acceptability, prevention
INTRODUCTION

Studies of Male Circumcision in Africa

In the last decade three randomized controlled trials in Kenya, South Africa, and Uganda have shown that male circumcision can reduce the sexual transmission of HIV from women to men as much as 60% (Auvert et al., 2005; R. C. Bailey et al., 2007; H. A. Weiss, Quigley, & Hayes, 2000), leading the WHO and UNAIDS to issue a set of recommendations for the use of male circumcision (MC) in HIV prevention efforts (WHO/UNAIDS, 2007). These recommendations suggest programs be implemented among populations where the prevalence of heterosexually transmitted HIV infection is high and prevalence of MC is low. Based on generalized heterosexual epidemics, high HIV prevalence and low levels of MC, thirteen eastern and southern African countries, including Uganda, were selected for MC programs to be implemented (WHO & UNAIDS, 2009).

A review of studies conducted in Sub-Saharan Africa has shown that acceptability of MC is dependent on men and women’s perceptions of social, cultural and religious beliefs about MC; perceived health or social risks and/or benefits of the procedure; and factors associated with the health delivery system including availability, cost, safety and side effects (H. A. Weiss et al., 2008; Westercamp & Bailey, 2007). Because these factors will likely vary by region and country, it is important to assess the acceptability of MC as a medical HIV prevention practice in different cultures with high HIV prevalence, especially among communities that are either not accustomed to circumcising or that practice traditional circumcision methods. In addition, further information is needed regarding community attitudes about the appropriate age to perform circumcision.
**Situation Analysis Informs Male Circumcision Program for HIV Prevention**

The first step in informing the design of a prevention program is performing a situation analysis to identify what is happening in the field with regards to MC and HIV prevention and why it is happening (WHO, 2009).

**Figure I. Program Cycle around Interventions (WHO, 2009)**

Prior to the three randomized controlled trials linking MC to partial protection of HIV, only a few studies of MC had been conducted in Uganda. In one of the most recent studies, which assessed sexual behaviours and other HIV risk factors in circumcised and uncircumcised men in Mbale Town, Uganda in 1997 (R. C. Bailey, Stella, & Richard, 1999), 29% of the interviewed uncircumcised men said they would
consider being circumcised if the cost were minimal. This study was conducted before the association between MC and reduced HIV rates was generally recognized, and was not oriented towards determining acceptability of circumcision for protection against HIV. The study did not report on whether non-circumcising populations would consider circumcising their children for health reasons, and if so, at which age.

Most MC program efforts to date have focused on the circumcision of adult men, an approach which has shown some success. For example, in a rapid results initiative in over 90,000 adult male circumcisions were performed as of January 2010 (Dickenson & WHO, 2010). Circumcision of male children, however, has received less attention from public health professionals. Some data show that a larger public health benefit would accrue over time from infant circumcision and that infant circumcision is safer and yields fewer adverse events (WHO/UNAIDS, 2007).

In Uganda, rather than engage immediately in MC roll-out, the government undertook a situation analysis to inform program planning for an MC HIV prevention program in Uganda. The current mixed-method study assessed popular and policy-level attitudes, as well as provider opinions, related to male circumcision (MC) in four Ugandan districts in order to provide decision makers with adequate information about whether to promote male circumcision as an HIV prevention strategy.

**METHODS**

This study was conducted in accordance with recommendations from the WHO guide, “Male Circumcision Situation Analysis Toolkit” (WHO, 2009). Research activities
included: (1) a household survey of men and women, (2) focus group discussions, (3) a health facility service availability study, and (4) stakeholders’ workshops at the national and local level. The current manuscript focuses on results from the household survey, complemented by results from focus group discussions, and service provider survey conducted in March and April of 2008.

Following WHO toolkit guidelines, MC assessments were undertaken in four districts: 1) Kampala, the district with the largest population/capital city; 2) Gulu, a large city in a non-male circumcision area, 3) Kumi, a rural district in a non-male circumcision area that is near a district that practices male circumcision, and 4) Rukungiri, a non-male circumcision area that is geographically distant from 2 and 3. (Table 1).

**Table 1: Regions Selected for the Situation Analysis and the Prevalence of Circumcision and HIV Among Men, by Region.**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Region</th>
<th>% circumcised</th>
<th>% HIV+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Capital</td>
<td>Kampala</td>
<td>37.9</td>
<td>4.5</td>
</tr>
<tr>
<td>2 Large city, non-circumcision area</td>
<td>North Central</td>
<td>2.4</td>
<td>7.1</td>
</tr>
<tr>
<td>3 Rural, non-circumcision, near circumcising area</td>
<td>Northeast</td>
<td>4.9</td>
<td>3.2</td>
</tr>
<tr>
<td>4 Non-circumcision area, distant from 2 and 3</td>
<td>Southwest</td>
<td>7.6</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Source: Uganda HIV/AIDS Sero-behavioural Survey 2004-2005, conducted by the Uganda Ministry of Health

**Household Survey**

**Sample**

To obtain a sample that was representative of the population of each district, a separate, two-stage cluster sampling strategy was used in each of the four selected districts. The Primary Sampling Unit (PSU) was the 2001 population census enumeration areas and the Secondary Sampling Unit (SSU) was households. Thirty
PSUs were randomly selected within each district, and 14 SSUs were quasi-randomly selected within each PSU for sampling (seven each for men and women). In a few cases, the selected secondary sampling units were unreachable despite diligent efforts. In such cases, these units were replaced with new sampling units. No data detailing non-response rates to the household survey are available.

Eligibility to participate in the survey included being 1) at least 18 years of age and 2) the parent of at least one child. A total of 1,677 men and women – approximately 210 men and 210 women per district, participated in the household survey which aimed to explore the knowledge and personal preferences of men and women with regard to male circumcision, for themselves and their male children. The interviewer-administered survey instrument was brief, focused, and translated into the local language.

Measures
There were three main outcome measures for this study: (1) willingness to circumcise among uncircumcised men, (2) willingness to circumcise male children, and (3) best age for circumcision. Prior to administering these questions, all household survey respondents were provided with a health message linking male circumcision to reduced HIV infection: “Recent studies show that male circumcision reduces the risk of being infected with HIV. Being circumcised is not enough on its own to protect from HIV and circumcised men MUST continue using other forms of protection.” After provision of the message, uncircumcised men were asked: “Based on this information would you consider being circumcised?” All household survey respondents, male and female, with or without sons, were asked: “If you have or had a
son, would you support your son’s circumcision?” All survey respondents were also asked: “When would your son be circumcised?”

Analyses followed a pre-specified plan. Two male survey respondents who did not provide circumcision status were excluded from analysis. Also, in some instances, skip patterns prescribed in the survey were not followed during survey administration. Such cases were programmaticallly corrected in SAS V9.1 at the time of analysis.

**Focus Group Discussions**

Focus group discussions (FGDs) were used to elicit viewpoints from men, women and key members at the community level. Approximately 30 FGDs were conducted in each district, averaging 10 individuals each. FGD participants were recruited using local networks and contacts established during the one-day workshops and survey. Purposive sampling ensured that FGDs were composed of participants with similar backgrounds based on sex, age, and circumcision status (for men). FGDs were conducted in the local language; the discussion guide was translated into local languages and then back-translated to English in order to ensure accuracy of terms. The FGDs were tape recorded, then coded and analyzed using qualitative software analysis programs.

The qualitative data from the focus groups provide more information about why key groups may support or be opposed to MC (i.e. stigma) and what the misconceptions might be about MC and HIV, in order to inform how messages could be formulated to provide better information about MC and HIV prevention.
**Health Care Provider Survey**

A total of 59 health practitioners were surveyed across the four focal districts, with Kampala providing the majority of data (42 interviews). Two-thirds of all interviews were conducted with hospital staff, but staff from health centres IVs and IIIs, a nursing home, and an AIDS information centre were also interviewed. A range of government, faith-based, non-faith-based NGOs, and private for-profit facilities were represented. Staff members were surveyed to assess their current practices in MC, as well as their overall attitudes towards the practice. Only 34 of the 59 practitioners surveyed (58%) had ever performed a male circumcision, with circumcisions being performed across all age groups.

**RESULTS**

In the results section, we focus primarily on results from the household survey, but draw on findings from the focus group discussions and health care provider survey to provide further insights into the household survey findings.

Background characteristics of household survey respondents are provided in Table II. Most respondents were Catholic or Protestant, although about one-quarter of Kampala district residents were Muslim. Most residents in Kampala district lived in the city, while most residents in Gulu, Kumi, and Rukungiri districts were rural. Only 134 of the 833 men who reported circumcision status were circumcised. There were very few circumcised respondents from Gulu, Kumi, and Rukungiri. In Kampala, where a sizeable proportion of residents are Muslim, 40% of male respondents reported they were circumcised (Table II).
Table II: General Characteristics of Household Survey Respondents (N=1675)

<table>
<thead>
<tr>
<th></th>
<th>Kampala District (N=418)</th>
<th>Gulu District (N=421)</th>
<th>Kumi District (N=416)</th>
<th>Rukungiri District (N=420)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Females (N=842)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean age (range)</td>
<td>30.1 (16-62)</td>
<td>35.2 (17-70)</td>
<td>33.6 (19-60)</td>
<td>35.7 (18-80)</td>
</tr>
<tr>
<td>Mean number of sons (range)</td>
<td>2.1 (1-10)</td>
<td>2.3 (1-7)</td>
<td>2.8 (1-8)</td>
<td>2.4 (1-9)</td>
</tr>
<tr>
<td>Mean number of daughters (range)</td>
<td>2.0 (1-6)</td>
<td>2.7 (1-9)</td>
<td>2.5 (1-8)</td>
<td>2.3 (1-7)</td>
</tr>
<tr>
<td>Religion (%)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>28</td>
<td>76</td>
<td>45</td>
<td>39</td>
</tr>
<tr>
<td>Protestant</td>
<td>31</td>
<td>17</td>
<td>49</td>
<td>52</td>
</tr>
<tr>
<td>Muslim</td>
<td>29</td>
<td>2</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>11</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Residence (%)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>--</td>
<td>73</td>
<td>97</td>
<td>100</td>
</tr>
<tr>
<td>Urban</td>
<td>100</td>
<td>27</td>
<td>3</td>
<td>--</td>
</tr>
<tr>
<td><strong>Males (N=833)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean age (range)</td>
<td>31.8 (19-67)</td>
<td>35.1 (18-77)</td>
<td>37.8 (20-71)</td>
<td>42 (20-80)</td>
</tr>
<tr>
<td>Mean number of sons (range)</td>
<td>2.2 (1-20)</td>
<td>2.7 (1-8)</td>
<td>3.0 (1-13)</td>
<td>2.7 (1-15)</td>
</tr>
<tr>
<td>Mean number of daughters (range)</td>
<td>2.3 (1-15)</td>
<td>2.4 (1-7)</td>
<td>2.9 (1-8)</td>
<td>2.6 (1-11)</td>
</tr>
<tr>
<td>Religion (%)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>39</td>
<td>77</td>
<td>42</td>
<td>35</td>
</tr>
<tr>
<td>Protestant</td>
<td>32</td>
<td>19</td>
<td>49</td>
<td>57</td>
</tr>
<tr>
<td>Muslim</td>
<td>21</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>2</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Residence (%)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>--</td>
<td>67</td>
<td>96</td>
<td>98</td>
</tr>
<tr>
<td>Urban</td>
<td>100</td>
<td>33</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Circumcised (%)**</td>
<td>40 (n=84)</td>
<td>12 (n=26)</td>
<td>4 (n=8)</td>
<td>8 (n=16)</td>
</tr>
<tr>
<td>Uncircumcised (%)**</td>
<td>60 (n=124)</td>
<td>88 (n=184)</td>
<td>96 (n=197)</td>
<td>92 (n=194)</td>
</tr>
</tbody>
</table>

*Percents are rounded to nearest integer, so may not add up to 100.

** Two males have been excluded from analysis due to missing results on circumcision status.

**Outcomes**

**Stated Willingness of Uncircumcised Men to Undergo Male Circumcision**

Uncircumcised men (N=699) who supported circumcision for themselves ranged from 40% in Rukungiri to 62% in Kampala (Figure II). In more than half of the FGDs, participants emphasized the many positive health benefits they associated with MC, including reduction in STIs and HIV/AIDS transmission and increased hygiene.

Health care providers echoed the health benefits of MC, with more than 90% stating
that male circumcision improves hygiene and provides some protection against STDs and HIV. Circumcision was also perceived by some focus group participants to increase men’s sex drive and/or women’s sexual pleasure – a benefit in the eyes of many, but a point of concern among others who believed that circumcised men would engage in riskier sex. For example, one Kumi man suggested: “It also promotes promiscuity among men, because they will think they are now safe to have live sex with anyone – which means they may end up getting HIV.” In addition, men and women worried about the medical procedure itself, including pain, infection, disfigurement, death or even contracting HIV during the procedure. Finally, some were concerned about the need for financial assistance during the recovery period to help maintain their family income.

**Stated Willingness to Circumcise One’s Son**

Willingness of men (circumcised (N=134) and uncircumcised (N=699) combined) to have their sons circumcised was very high (Figure II). Overall, men’s support of a son’s circumcision ranged from to 86% in Kampala to 60% in Kumi. When examined by circumcision status, uncircumcised men in Kampala District were the most likely to support circumcision for their male children (79% support), and uncircumcised men in Kumi District were least likely to support it (59% support) (Figure II). Almost all circumcised men (96% in Kampala and 100% in the three other districts) were willing to support their son’s circumcision (Figure II).
A higher percentage of women (N=842) than men (N=833), except in Kumi, were willing to circumcise their sons. Women’s support of a son’s circumcision ranged from 95% in Kampala to 49% in Kumi.

Among uncircumcised men (N=699), place of birth (rural/urban) did not have a strong affect on the rate of acceptability of son circumcision. Gulu was the only district with a substantial number of current residents living in both Rural (n=116) and Urban (n=58) areas and the acceptability of circumcision for sons was strong at 67% and 72% respectively.

Across districts, no uncircumcised men (N=699) were Muslim (all Muslim males in the household survey reported being circumcised). For uncircumcised male
respondents, religion was grouped into Catholic, Protestant, and Other (including no religion). Among uncircumcised men, acceptability to have one’s son circumcised was strong across religions, with Protestants in Kumi being the least supportive at 57% and Protestants in Kampala being the strongest supporters at 81%. In Kumi, only 46% (n=13) of other religions or non-religious participants supported circumcision.

Some respondents did change their opinion about circumcising their sons after provision of the health message, but there was no reduction in support in any city. In Kampala, Gulu, and Kumi, percent support of circumcised males (N=134) remained exactly the same before and after the health message. Overall, women were more likely to increase their level of support than men (Table III). About half of the women in Kampala, Gulu, and Rukungiri districts increased their support after hearing the health message, while about one-third of the uncircumcised men in Gulu and Kumi districts did the same.

Table III: Proportion of female and uncircumcised male respondents who initially did not support circumcision of their sons, but increased their support after provision of the health message

<table>
<thead>
<tr>
<th>District</th>
<th>Kampala</th>
<th>Gulu</th>
<th>Kumi</th>
<th>Rukungiri</th>
</tr>
</thead>
<tbody>
<tr>
<td>Males</td>
<td>Females</td>
<td>Males</td>
<td>Females</td>
<td>Males</td>
</tr>
<tr>
<td>(N=26)</td>
<td>(N=18)</td>
<td>(N=78)</td>
<td>(N=101)</td>
<td>(N=118)</td>
</tr>
<tr>
<td>Increased</td>
<td>4</td>
<td>44</td>
<td>32</td>
<td>51</td>
</tr>
<tr>
<td>support (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In FGDs, the most common reason for supporting a son’s circumcision was to prevent HIV/AIDS or to provide for a “healthier future” more generally. As one male participant from Gulu expressed: “With this new [HIV reduction] information, to say no to the circumcision of our children is to deliberately destroy their future.”
Nevertheless, FGDs also raised a number of concerns and challenges to MC promotion. These included concerns about cost, pain associated with the procedure, a perception by some that circumcision would signify a religious conversion, or that the procedure would encourage their children to engage in risky sexual activity. A few participants suggested that more information was needed about the health benefits of male circumcision.

**Age at Which Men and Women Would Consider Male Circumcision for Their Sons**

Overall, household survey participants supported MC during infancy (0-1 years) or childhood (2-9 years), rather than adolescence (10-17 years) or adulthood (18 and over). However, there was some variation by gender and district. Half of men and about two-thirds of women in Kampala (the district with the largest Muslim population) preferred to circumcise infants. Similar results were found in Rukungiri, the more distant rural district. However, in Gulu and Kumi districts women seemed equally divided between infancy, childhood and adolescence; while men showed some preference for childhood circumcision. Results are given in Table IV. Notably, approximately one-half (54%) of the health care practitioners believed that infant circumcision is best, followed by childhood (25%), adulthood (13%), and lastly adolescence (6%).
Table IV. When Would Your Son be Circumcised?

<table>
<thead>
<tr>
<th>Result</th>
<th>Female (N=842)</th>
<th>Uncircumcised Males (N=699)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kampala (n=210)</td>
<td>Gulu (n=211)</td>
</tr>
<tr>
<td>Infant (0-1 years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>133</td>
<td>50</td>
</tr>
<tr>
<td>Percent</td>
<td>67 (59, 75)</td>
<td>31 (23, 40)</td>
</tr>
<tr>
<td>Child (2-9 years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>31</td>
<td>57</td>
</tr>
<tr>
<td>Percent</td>
<td>16 (11, 21)</td>
<td>36 (27, 44)</td>
</tr>
<tr>
<td>Adolescent (10-17 years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>13</td>
<td>37</td>
</tr>
<tr>
<td>Percent</td>
<td>7 (2, 11)</td>
<td>23 (16, 30)</td>
</tr>
<tr>
<td>Adult (18 and over)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>Percent</td>
<td>10 (6, 14)</td>
<td>10 (5, 15)</td>
</tr>
<tr>
<td>Don't Know</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td>Percent</td>
<td>1 (0, 2)</td>
<td>(0, 5)</td>
</tr>
</tbody>
</table>

DISCUSSION

Stated Support for Male Circumcision

The household survey asks individuals whether or not they were willing to get circumcised or to get their sons circumcised. The outcomes from this data are merely a litmus test to see if the people of Uganda are open to considering a male circumcision program for HIV prevention. Stating ones support of male circumcision for survey purposes is clearly different than actually following through with the male circumcision surgery. So, these outcomes are not meant to estimate what actual circumcision rates will be if and when Uganda rolls out a MC program. It should be noted that uptake and actual participation of an MC program would depend on the public’s reception of media messages and political support prefacing and during roll out of an MC program.

Between 40 and 60% of uncircumcised men were willing to consider MC for themselves – while lower, overall, than acceptability of sons’ circumcision, these rates are much higher than the 29% reported by Bailey et al. in 1999. FGD data
highlighted potential barriers to MC during adulthood, including concerns about the medical procedure itself, but also perceptions linked to religious or cultural identity and influence on post-procedure risk behaviours. Data from men enrolled in the seminal trial in Kenya that linked MC to reduced HIV rates, however, did not find increased HIV risk behaviour following medical male circumcision (Mattson et al., 2008). Nonetheless, risk compensation remains a concern in MC rollout and needs to be carefully and effectively addressed in communication strategies for MC scale-up (WHO/UNAIDS, 2007).

Importantly, this study demonstrated moderate to strong acceptability, across the four districts, for circumcising sons. Almost all circumcised men supported circumcision of their sons. In addition, the majority of women in all districts and the majority of uncircumcised men, in all but Kumi district, supported MC for their sons.

**Age for Male Circumcision**

While there was some variation in the most appropriate age range during which to circumcise sons, survey participants preferred circumcision at younger ages for their sons (i.e., 0-9 years), rather than during adolescence or adulthood. This was echoed in our survey of health care providers, who believed that MC in infants was best.

A recent cost-effectiveness study on male circumcision in Rwanda concluded that while an MC rollout should be devised for all ages, an emphasis should be put on the very young (Binagwaho, Pegurri, Muita, & Bertozzi, 2010). The advantages of infant over adult circumcision include lower complication rates and a more rapid healing time – of approximately 1 week versus 4 to 6 weeks for adults, when performed in
clinical settings with trained personnel (WHO, 2008). In addition, infant circumcision avoids potential unintended consequences of increased risk behaviour due to a belief that one is now protected from HIV. While circumcision of adolescent and adult males is believed to provide a more immediate and rapid effect on the HIV epidemic than circumcision of infants and young children (WHO/UNAIDS, 2007), it should be noted that circumcision with neonates is much simpler and less risky; therefore the acceptability of infant circumcision in Uganda is important for long-term strategies against HIV (WHO/UNAIDS, 2007).

**Traditional vs. Medical Male Circumcision**

Due to traditional circumcision practices, MC in Uganda seems to be most prevalent in the late teen to adult years, rather than with infants. Given the existence of traditional circumcision practices in some parts of the country and the potential demand for circumcision at older ages, introduction strategies for medical MC must consider how best to accommodate such traditional practices, as well as to effectively communicate messages about the partial protection of MC and the need to sustain other risk reduction behaviours, including faithfulness, partner reduction and condom use (Asiimwe, Kibombo, & Neema, 2003).

It may be unrealistic to expect that traditional circumcision will halt even with a medical MC rollout. Results from a recent study in Tanzania show that traditional MC is an ingrained cultural ritual that is preferable in some regions to medical MC (Mboera et al., 2009). Conclusions from this study recommend allowing traditional and medical MC to operate as parallel systems that complement each other, with
efforts to formally regulate, register, and train traditional practitioners in good circumcision practices.

Research is currently underway by Family Health International in Uganda to examine the attitudes of traditional circumcisers towards medical MC. The results of this study should inform how to better position the introduction of medical MC in areas of varying tradition in Uganda. As pointed out in past research, the government will need to address how best to incorporate or change traditional circumcision practices that may be harmful, including the sharing of knives or circumcision festivities that “create opportunities for adolescents and adults to engage in risky sexual practices” and pressure for the newly circumcised boy to have sex with a woman to prove his manhood (Asiimwe, Kibombo, & Neema, 2003).

If results of this research in Uganda mirror those of Tanzania, then any MC program should give consideration to incorporating traditional circumcisers in program implementation, including government funded trainings and certifications on how to provide safe and effective circumcisions.

*Health Message Communication*

While this acceptability study shows strong support by men and women in Uganda of medical male circumcision for protection against HIV, focus group data and media coverage convey popular concerns and distrust of research trials, as well as a general concern that MC procedures - viewed as a cure-all or magic bullet – will increase promiscuity and contribute to society’s moral decay. Strong and culturally adapted communication messages are required regarding MC as a partial protection against
HIV and the necessity of continued condom use should accompany medical MC introduction. These messages could be incorporated to existing educational campaigns to correct misconceptions that men will not need to use condoms after they are circumcised. Studies testing communication messages are ongoing in Kenya, however similar research should be done in Uganda as well. Informed by such research, public health authorities could consider collaboration with media outlets during a MC roll-out in forming accurate HIV prevention messages and presenting research results that address fears such as risk compensation after MC.

Kenya launched its Voluntary Medical Male Circumcision programs on the foundation of the successful circumcision trial in Kisumu (Otieno, 2010). In contrast, the Ugandan Ministry of Health may need to address fears generated from negative media attention of early closures in recent HIV prevention trials. In January 2007, the unexpected early closure of a phase III trial Cellulose Sulfate due to a potential of increased risk, led to negative medical attention (Van Damme et al., 2008). More recently, a clinical trial in Rakai, Uganda that aimed to test the effectiveness of male circumcision in reducing risk of HIV infection in female partners was stopped early due to futility (Wawer et al., 2009). Recent and potentially misleading headlines reported “Circumcision helps protect men, not women from AIDS” (Fox, 2009), making it seem that there is no indirect benefit to women at all. A review done in 2007 in Sub-Saharan Africa regarding HIV/AIDS print media found that while most print media reviewed was accurate, that important messages were omitted, and that public health officials could play a more active part in informing media before and while coordinating an MC roll out (Wang et al., 2009).
Another consideration for public health practitioners is to determine whether the definition of medical male circumcision is clearly communicated through media sources. As Wang points out, media can be a tool to accurately convey the definition of circumcision since some studies have shown that men who self-reported being circumcised were actually not circumcised upon examination. Some traditional circumcisions in Sub-Saharan Africa are reported to have as little as 1 cm of foreskin removed (Brown et al., 2001). A study in Rakai, Uganda showed that larger foreskin surface area is associated with an increased risk of HIV acquisition and that circumcision practitioners should reduce any excess foreskin during circumcision (Kigozi et al., 2009). The amount of foreskin removed in the traditional circumcision may not coincide with the standards of foreskin removal used in the three trials showing HIV protection with MC (Brown et al., 2001; Wang, Duke, & Schmid, 2009). Therefore, media communication should be clear about the difference between some traditional circumcisions and medical circumcision, to increase the accuracy of self-reporting and to increase the public health effect of a male circumcision program.

**Male Circumcision Program Development in Uganda**

The government of Uganda has begun to receive pressure in the media for not having a circumcision policy in place yet, while at least 13 other Sub-Saharan countries have made headway or are in full force in implementing medical male circumcision programs (PlusNews, 2010). Despite such pressure, Uganda’s Ministry of Health must consider how best to handle relevant issues when designing a medical male circumcision campaign and educational tools that are appropriate for different cultural settings within the country. Due to the groundwork laid out by these other countries and the situational analysis they have undertaken in their own country, Uganda has
the opportunity to apply lessons learned. The following logic model (Table V) provides a visual recounting of the relationships between resources and activities that will be needed to implement an MC program for HIV prevention in Uganda, as well as the desired outcomes.

Table V. Logic Model for Uganda Male Circumcision Program Development

| 1. Define the Problem | • Six percent of Ugandan adults aged 15-49 are infected with HIV. *  
| | • HIV prevalence among women is higher (8%) than among men (5%). *  
| | • Five percent of cohabiting couples in Uganda are discordant (one partner is HIV+ and the other is HIV-). *  
| | • Globally, 33.2 million HIV infections. ** |
| 2. Identify the Intervention | • Development of a country wide male circumcision (MC) program as an addition to a comprehensive HIV Prevention Program in Uganda. |
| 3. State the goal | • Decrease HIV incidence in Uganda. |
| 4. Outline key objectives | • Development of ethical country policy regarding MC program.  
| | • Involvement of country champion to lead the way of MC program.  
| | • Advocate for policies that increase health service provision and staff for safe MC surgery and aftercare  
| | • Ongoing improvement of health facility infrastructure  
| | • Identify and secure funding to sustain MC pilots and rollouts, offering free MC during scale-up.  
| | • Incorporate lessons learned from other MC program countries.  
| | • Develop data collection plan for program evaluation.  
| | • Prepare media for accurate communication of health messages.  
| | • Incorporate results of traditional MC study into MC program.  
| | • Pilot program in diverse regions (rural, urban, IDP camps, transitional villages).  
| | • Rollout of safe and successful MC program.  
| | • MC accepted as an addition to comprehensive HIV prevention program in Uganda. |
| 5. Determine desired outcomes | • Reduce HIV infection rates in Uganda.  
| | • Increase number of men circumcised in Uganda.  
| | • Increase demands for safe MC in Uganda.  
| | • Convey accurate health messages regarding medical male circumcision as a partial HIV prevention technique. |

Sources: *(Ministry of Health (MOH) [Uganda] & ORC Macro, 2006), ** (United Nations, 2009)
To date, Uganda has formally assessed existing policies using the UNAIDS legal and regulatory self-assessment tool and is currently underway with drafting an MC policy and has designed a strategy and operational plan (WHO & UNAIDS, 2009).

**Piloting the Male Circumcision Rollout**

Sustainable solutions for MC program implementation will depend on a broad strengthening of health care systems in Uganda (Family Health International, 2010b). In Uganda there are only 10 specialist surgeons, 350 anaesthesiologists, and 16,000 nurses to serve a population of over 30 million (Ozgediz et al., 2008). In addition, there is an imbalance in the providers with 90% of physician providers being concentrated in the capital city Kampala, while 90% of Uganda’s population reside in rural areas (Ozgediz et al., 2008). These rural areas have mostly been served by surgical camps which occur once or twice per year for one to two weeks at a time, with local health providers and nurses providing care and receiving additional training (Ozgediz et al., 2008). If this camp model is considered for a MC rollout, and if goals are to circumcise a majority of the male population in Uganda, then it is likely new staff or volunteers will need to be trained to provide MC operations.

Incorporating lessons learned from other MC programs will be a key in developing pilots for a Uganda MC program. Three case studies for MC program rollout have been published at the Clearing House on Male Circumcision for HIV Prevention, however to date, a case study for Kenya’s recent success has not been posted (Family Health International, 2010a). Kenya’s Expanded Access Initiative has circumcised 90,000 men, with 36,000 of those accomplished in November and December 2009. The initiative uses volunteers to help accomplish the high number of circumcisions
performed, including challenges of limited human resources, revising country protocols to determine who is allowed to provide the minor operations, and task-shifting to avoid provider burnout (Cairns, 2010; Dickenson & WHO, 2010).

Kenya had previous experience with Rapid Results Initiative when doing HIV testing, so was familiar with the process to go about with the expanded access initiative. Marie Stopes International has published a case study of pilot programs done in Kenya between June 2007 and December 2008, where 5344 men and adolescent boys were circumcised with an average of 20 circumcisions per day (Nelson & Quinn, 2009). The Swaziland case study provides examples of small pilots of that country’s MC program, along with challenges faced in the pilots and how the pilots were used for data collection (Groeneveld, Hayes, Skorochod, & Skorochod, 2008).

CONCLUSION

Results from this situation analysis on MC as an HIV prevention strategy in Uganda suggest that MC is acceptable in the four districts sampled in Uganda, and that circumcising young or infant males may be more acceptable to Ugandan communities than circumcision of older males. Furthermore, although women have not traditionally been targets of MC promotional and campaign messages, our research findings demonstrate that they are an audience amenable to MC messages and may be influential in the uptake of MC among boys and even male partners. Pilot programs should be carried out before any full rollouts, referring to Kenya’s expanded access initiative as a model for rollout. A huge challenge in Uganda will be medical staff resources, so policies should consider how MC operations would be provided given the small number of medical professionals in the country. Further data collection on
infant and neonate circumcision could be collected in MC program pilots, and efforts to strengthen general hospital capacity should be sought out to build sustainability in general services as well as HIV prevention services and post-care. Clear and persuasive health communications are critical to emphasize that MC provides only partial protection against HIV and should be considered as only one of many strategies in a comprehensive HIV prevention program to reduce HIV incidence in Uganda. Pending further research, a successful MC prevention program may need to develop strategies to incorporate traditional circumcisers in the safe MC HIV prevention effort.
REFERENCES


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