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Medical male circumcision and HIV risk: perceptions of women in a higher learning institution in KwaZulu-Natal, South Africa

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Abstract

Background—Medical male circumcision (MMC) reduces the risk of HIV acquisition for men in heterosexual encounters by 50–60%. However, there is no evidence that a circumcised man with HIV poses any less risk of infecting his female partner than an uncircumcised man. There may be an additional risk of HIV transmission to female partners during the 6-week healing period and if condoms are used less often after circumcision. The aim was to explore young women's perspectives on MMC, with a view to developing clear messages about the limitations of MMC in reducing women's HIV risk.

Methods—We explored women's perspectives on MMC in KwaZulu-Natal, South Africa, with a sample of 30 female tertiary students via four focus groups (two for women only; two mixed gender).

Results—In all groups, women communicated a thorough understanding of the partial efficacy of MMC, but believed that others would not understand this concept. Participants noted that MMC affords no direct benefit to women. Most thought that MMC would increase females' risk of contracting HIV, that circumcised men may engage in risky behaviours and that men would increase their number of sexual partners after circumcision. Participants believed that condom use would decrease after MMC and speculated that men would have sex during the healing period, which could further compromise women's sexual health.

Conclusion—The concerns expressed by women regarding MMC highlight the need for including women in the dialogue about MMC and for clarifying the impact of MMC on HIV risk for women.

Keywords

heterosexuals; prevention; sexual risk

Introduction

Three randomised controlled trials (RCTs) in sub-Saharan Africa demonstrated that medical male circumcision (MMC) could reduce a man's risk of HIV acquisition through heterosexual intercourse by as much as 60% (Kisumu, Kenya;¹ Orange Farm, South Africa;² Rakai, Uganda³). This proven (but partial) efficacy of MMC for HIV prevention has led governments in many countries in eastern and southern Africa, including South Africa, to set ambitious goals to scale-up delivery of MMC services. KwaZulu-Natal, the site of the present study, was the first South African province to implement the national roll-out of MMC services as an HIV prevention strategy in January 2010.⁴ In 2003, the prevalence of self-reported male circumcision in KwaZulu-Natal was 26.8% among men 15–59 years, substantially lower than the overall country prevalence of 45%.⁵

Sexual risk compensation, commonly defined as increased sexual risk behaviour (e.g. unprotected sex, concurrent sexual partnerships) due to a real or perceived reduction of risk,^{6,7} could significantly undermine the protective benefits of MMC, as suggested by several studies. Some increase in sexual risk behaviour was observed in two of the three MMC RCTs noted above.^{1,2} Several modelling studies estimate that the beneficial effect of MMC would be considerably reduced at high levels of sexual risk compensation.^{8–11} In real-world settings, however, evidence regarding the degree of sexual risk compensation is limited. Following a 3-year period of MMC roll-out in Orange Farm, South Africa – the site of the earlier South African RCT^{12,13} and after nearly 5 years in Rakai, Uganda,¹⁴ there has been no evidence of sexual risk compensation after this procedure (scaling up of MMC nationwide in Uganda, with its Safe Male Circumcision campaign, did not begin until September 2010).^{15,16} A recent qualitative study in Swaziland found that even though most men circumcised in the last 12 months increased their protection practices, a minority increased sexual risk behaviour.¹⁷ Despite these findings, there is some scepticism about the extent to which men will use condoms after circumcision. A South African study reported that 15.0% of adult men and women across all age groups 'believed that circumcised men do not need to use condoms.'¹⁸

Newly-circumcised HIV-negative men who resume sex in the 6 weeks after being circumcised before wounds are fully healed place themselves at heightened risk for HIV infection,² and HIV-positive men who initiate sex before the wound has healed put their uninfected female partners at greater risk.¹⁹ Results from a 2010 survey among 248 newly circumcised men aged 15–29 years in two provinces in Zambia are especially telling: nearly one-quarter (24.0%) of the 225 men interviewed 6 weeks after MMC resumed sex during the healing period (46.0% within 3 weeks) and few reported consistent condom use. In addition, more than four-fifths (82.0%) of men in the study reported at least one unprotected sex act and 37.0% indicated they had had sex with multiple partners.²⁰ In Kenya, 30.7% of circumcised men ($n = 1344$) engaged in sexual activity within the 6-week wound healing period after MMC (21.8% by week 3 and 91.5% by week 4), with married or cohabitating men more likely to do so than unmarried or noncohabitating men.²¹ Among those who reported resuming sex within 6 weeks, 54.8% reported inconsistent condom use.

Results from a static network deterministic transmission modelling exercise showed that even with early resumption of sex after wound healing, the net effect of MMC was a substantial reduction in the number of overall HIV infections ($n = 230$ fewer) over a 1-year period.²⁰ However, for women, early resumption of sex added risk. A study among HIV-serodiscordant couples in Rakai, Uganda, for instance, found that HIV infection rates among female partners of recently circumcised HIV-positive men rose steeply, especially when the men engaged in sex before the wound was fully healed.¹⁹ Combined data for the three African MMC trials showed that between 3.9% and 22.5% of circumcised men reported having sex <42 days after the procedure, but this was not found to be associated with HIV risk to men.²²

MMC has not been shown to provide direct protection for reducing women's risk of HIV acquisition.^{19,23} Misconceptions about the protective effect of MMC for women could increase female partners' risk by reducing their own implementation of protective strategies. A recently published mathematical modelling study using dynamical simulations examined the balance between protection and sexual risk compensation in women and men, and found that the long-term population-level effects on men and women were not strongly linked and the result of MMC combined with behavioural disinhibition could result in a benefit for men but prove harmful to women.²⁴ There is a dearth of research about women's HIV risk perceptions and concerns about having sex and the impact of MMC on their own risk. We have little insight into how well women understand the concept of partial efficacy of MMC, and the difference between direct protection for men and some indirect protection for women due to reduced exposure to HIV-infected men. Women have largely been left out of the discourse on MMC for HIV prevention, but they potentially could play an important role in encouraging male partners to get circumcised. In one South African study, 13.0% of circumcised men reported being circumcised because their female partners requested it.²⁵

In this paper, we use data from focus groups to explore how women enrolled in a higher education institution understood the concept of 'HIV prevention efficacy of MMC' and perceived the risks and benefits MMC poses to them. South Africa is an ideal venue for exploring women's concerns about MMC, as it has been scaling up MMC services as an HIV prevention strategy nationally since April 2010.⁴

Methods

Seven focus group discussions (FGDs) were conducted with a total of 66 participants in March 2010. These FGDs were part of a larger study, including a campus survey with higher education students and in-depth interviews with health care providers, which examined knowledge and understanding of MMC for HIV prevention. Of the seven FGDs, two were comprised of women only, three had men only and the remaining two had both men and women. All participants were tertiary students. There were 19 women in the two women-only groups, 28 men in the men-only groups, and 11 women and 8 men in the two mixed-gender groups. Our FGDs were exploratory, with the aim of obtaining a range of opinions and attitudes. The number of FGDs in this pilot study was limited by resource constraints. These qualitative data were supplemented with a quantitative survey (analysis underway).

Here, we present data on women's views from four FGDs (two women-only and two mixed-gender groups) with 30 female higher education students. (Comparison of men's and women's views about MMC will be reported elsewhere.) We focussed on students of higher education because they fall into the primary age group being targeted for MMC in KwaZulu-Natal, and also are future role models and leaders in South Africa. Women were included so as to explore women's understanding of MMC, especially since misconceptions about MMC's protection for women could increase their HIV risk. Each focus group

consisted of 7–12 participants. We chose FGDs as our data collection strategy, as they enabled us to explore general attitudes and normative beliefs about MMC and to obtain group perspectives. Interviewer-administered participant demographic data (24 items) were collected before the commencement of each FGD to describe the sample. We did not analyse the data by any of the demographic characteristics (e.g. whether sexually active or not, or knowledge of partner's MMC status) because of the small sample size and small numbers within cells. We examined women's views in the mixed-gender groups compared with those in the women-only groups and found no discernible differences that might reflect gender norm constraints of women in the presence of men in the mixed-gender groups.

Participants were recruited via convenience sampling from a tertiary institution in KwaZulu-Natal, South Africa, 1 week before scheduled group discussions. The research team approached women randomly in public venues on campus, gave them an information sheet describing the study and invited them to participate in the study. Six women declined to participate in the study and 16 who accepted the invitation did not present for the group discussions. Each woman had the opportunity to select her group of choice (i.e. mixed-gender or single-gender), as well as the date and time to attend the group. Participants spoke English and some *isiZulu* during all group discussions. Participants gave written informed consent before participation. Ethical approval was obtained from the New York State Psychiatric Institute – Columbia University Department of Psychiatry Institutional Review Board, the University of the Witwatersrand Human Research Ethics Committee and the University of KwaZulu-Natal Biomedical Research Ethics Committee.

Primary topics discussed included knowledge of and beliefs about HIV/AIDS prevention and treatment, awareness and understanding of the implications of MMC for women; and opinions about MMC scale-up, integration and policies. Focus groups lasted 1.5–2.0 hours and participants received 50 rand (approximately US\$6) as compensation for their time. Discussions were digitally recorded and transcribed verbatim, and *isiZulu* portions were translated into English.

Data were analysed using NVivo ver. 9 software (QSR International, Doncaster, Victoria, Australia). Analysis was an iterative process via discussions among the research team, resulting in the identification of common themes. Codes were created based on recognised patterns in the data and dialogue was grouped accordingly.

Results

Participant characteristics

Participants ($n = 30$) ranged in age from 18 to 24 years, with a mean age of 19.7 years (s.d. = 0.3). They had completed, on average, 2.3 years of tertiary education (not tabled). Twenty-three women were currently sexually active, and among those sexually active, the mean age at first intercourse was 17.7 years (range: 13–21 years). Of the 23 sexually active participants, 11 reported having had sex with a circumcised partner, six had a current partner who was uncircumcised and six were uncertain about their current partners' circumcision status. Nineteen of the sexually active women reported having had one sexual partner in the 3 months before the interview, and three reported no sexual partners during this interval (not tabled). Participants' race, home province, home language and religion are shown in Table 1.

Understanding of MMC and perceptions of protection for women

In all four focus groups, women demonstrated a clear understanding about the biological benefits of MMC and the mechanisms of protection against HIV:

[On television], *'they said that [fore] skin actually holds STIs... it is actually what causes [a man] to get infected and infect his partner. So without that skin, you reduce the chances of infection.'*

A minority, however, were unsure about the efficacy of MMC: *'They are not so sure... that circumcision prevents chances of HIV so I don't believe it.'*

Participants in every group noted that MMC affords no direct benefit to women:

'From my understanding, women [aren't] affected. The semen comes inside you, whether with the foreskin or without.'

A few, however, believed that women are afforded some protection by MMC:

'If it's 60.0% for the men not to get the virus, then [it's the] same for the women.'

However, some qualified their statements by explaining the benefits as indirect:

'If your [circumcised] partner... is going to have a casual partner and if that partner is HIV-positive, you are at less risk [of] getting HIV because [of] your partner.'

The majority of women in three groups expressed thorough knowledge of the concept of partial efficacy. Some noted that a focus on the partial efficacy of MMC might lead to increased focus on condoms:

'If [MMC] can only prevent or protect males up to 60.0%, this can... lead to more focus on... encouraging people to use condoms, which has a higher percentage of preventing HIV and for both women and men.'

However, as one woman cautioned, people may have false hope when they hear that MMC provides a 50.0–60.0% reduction in HIV transmission:

'...partial protection, so nobody thinks of the... other side; that it might not protect you. So we all are looking for positive information, [so] then we don't take... [the negative side of it]... but at the same time... we need to learn... that it [is] not fully effective. They will still need to use other protective methods.'

People may misconstrue the 50.0–60.0% reduction in HIV transmission afforded by MMC as 100.0% protection because they 'just take in what they want to hear'.

A few women offered biological and anatomical explanations of women's vulnerability to HIV:

'You know, women have more surface area than [men] so we [are] prone to get more stuff.'

'When he ejaculates into the womb, as this [is a] big space; it just goes all over and you can catch the disease because it does not come out.'

Perceptions of risk of MMC for women

In all groups, participants felt that rollout of MMC would increase women's risk of contracting HIV. Most believed that men would fully understand partial efficacy, but were concerned about the consequences of men's general disregard for women's sexual health.

'It's all about them. They will think, "If I get protected, I am OK. If you [are] not protected, that [is] your problem."'

'Guys just don't think about women; they are selfish. They think about themselves; they don't think about you [women] getting HIV.'

Some participants, however, believed that men would not understand the concept of partial protection and predicted that men will erroneously believe they are fully protected. They argued that newly circumcised men ‘wouldn’t know that having sex without a condom is dangerous’ and that circumcision ‘doesn’t mean that you are fully protected from getting HIV.’ Moreover, there was scepticism that MMC would reduce a man’s sexual risk behaviour. Risk reduction was attributed to individual control over sexual behaviour, rather than to the surgical procedure:

‘Control [over sex] depends on a person; it doesn’t depend on [whether or not there is] foreskin.’

Women also queried whether they should encourage sexual partners to get circumcised if it did not protect them:

‘It is saving him and you are not safe; it doesn’t make sense... Men won’t see MMC relating to their partners.’

Several women suggested that if a circumcised boyfriend cheated on them with an HIV-positive woman, he (and by extension them) would be protected because ‘he won’t catch it from the foreskin.’

Women’s safety was seen as being tied to male partners:

‘It still is the guys that have to do something in order for us to be safe.’

Some women reasoned that since most men don’t use condoms, why would men expose themselves to the pain of MMC if it does not confer 100.0% protection? In all four groups, the majority of women concurred that male condom use would decline among newly circumcised men, although a minority in two groups believed that MMC would have no effect on men already using condoms:

‘A person who is using a condom before circumcision will carry on using a condom.’

Condoms were still viewed by some women as a better HIV prevention option than MMC.

Some women believed that for men, the terrain of pleasure took precedence over their partner’s health.

‘Sex is... for the sake of having fun so you go at your own risk. Men will think they are protected.’

‘Ja, they will understand... they just see [it] as a chance to not use condoms, just do it without using any protection.’

In three of the four groups, the majority of women speculated that men would increase the number of their sexual partners after being circumcised:

‘When they come back, they get multiple partners because they think [about] all that lost time. They have to make up for it.’

They commented that men think that having one girlfriend is boring so they prefer to ‘taste’ different women. However, in one group, the majority did not share this belief, indicating that MMC would have no effect on how many partners a man had:

‘The number of partners that you [have] depends on your morals... You know, about sleeping around – why would you change when you get circumcised?’

Women also noted that men’s misunderstanding about the partial efficacy might encourage infidelity:

'The guy will be cheating because now they are safe... They take it as if it is 100.0% safe; they will go for circumcision and then say we are going to go after girls.'

In general, women questioned whether the recommended 6-week abstinence from sex was realistic. Many believed that men were simply incapable of resisting sexual desires and would succumb to temptation:

'You tell them they have to wait 6 weeks [and] they look at you as if you [are] crazy.'

Indifference, rather than lack of control, was seen as key in prompting men to have sex before their penises are fully healed:

'If men want to, they will do it anyway... They won't care about the wound. So, as a woman, you must make sure to protect yourself.'

Some stressed that men should inform their female partners they were just circumcised so that women could restrain their men from having sex. Others felt that it was their responsibility to support their partners during the initial 6 weeks after MMC. Still others suggested that men remain isolated from women until the wound heals. A minority of women were more concerned with their own sexual needs than the needs of their partners during the 6 weeks following their partners' MMC:

'You can't expect me to wait for 6 weeks if you can't wait 6 weeks.'

Discussion

The gender issues underlying MMC have been neglected²⁶ and concerns about the lack of direct protection afforded to women and sexual risk compensation have not been adequately considered. Our group discussions with female students, who are likely to be partners of men in an age group prioritised for MMC, indicate that women are concerned that MMC could actually increase their risk of HIV infection, bringing numerous gender issues to the forefront. HIV-uninfected circumcised men who stop using condoms consistently after MMC or who have unprotected sex before the wound has healed may increase their own risk of HIV acquisition from women; if infected, they increase risk of transmission to their female sexual partners. Meanwhile, HIV-infected men who become circumcised increase the likelihood of transmitting HIV to their female partners during the wound healing period if they do not use condoms consistently with their partners. With considerable knowledge of the partial efficacy of MMC, women believed in its potential benefit as an HIV prevention intervention. Simultaneously, they perceived MMC as a threat to them and expressed distrust of their partner's ability or willingness to aid in their protection. They also noted that despite MMC, women still need to rely on men for protection. Men still need to refrain from sexual risk behaviour to protect themselves and their partners. This paradox puts women in a precarious position, as the majority felt obliged to endorse a procedure that, at best, affords them only indirect protection.

Women with less education than the privileged women in our study may be less likely to understand the partial protection that MMC confers against HIV and cervical cancer, and the lack of proven direct effect in reducing women's HIV risk, such as in a study of MMC in Zambia.²⁷ In fact, in this Zambia study, nearly half of 62 participants in a semistructured interview reported that they lacked knowledge about MMC's effect on women. Similarly, in a study of 2915 men and 4549 women aged 15–29 years in Botswana, Namibia and Swaziland, 14.0–26.0% believed that HIV-positive circumcised men could not transmit HIV and 8.0–34.0% believed that circumcised men could expect to have sex without a condom.²⁸ Inaccurate perceptions about MMC by women as well as by men can lead to sexual risk

compensation and compromise women's willingness or ability to protect themselves against HIV infection.

Gender norms were also apparent in women's concerns that men's adherence to sexual abstinence during the 6-week postoperative period might be challenging. This was reflected in reference to men being unable to control their sexual desires, affirming that sex as a need is a hallmark of masculinity.²⁹ At the same time, women anticipated that men would be concerned that their sexual abstinence might encourage infidelity on the part of female partners, but also noted that women may be the ones to encourage early resumption of sex or look for other partners during this period.

These findings also suggest that MMC has done little to counter conservative gender norm ideology that constrains women's ability to protect themselves against HIV. MMC still allows men to retain a power advantage over sex relative to women. Because MMC has demonstrated only partial efficacy against HIV, consistent condom use is still recommended. However, if circumcised men falsely believe they are completely protected, women may find it more difficult to persuade their male partners to use condoms – even more so now than before the availability of MMC for HIV prevention. Women identified their risk as arising from a perceived decrease in male condom use and increases in men's number by sexual partners. If men interpret MMC to mean that they can have unprotected sex more frequently with more partners, MMC may actually place women at greater HIV risk. This speculation of women was based on experiences with unfaithful men who refused to use condoms. Even if there is no sexual risk compensation in real-world settings, MMC does not give women any additional direct protection, as they remain disadvantaged by the gender-based power differentials present in their sexual relationships.³⁰ As expressed by one participant at the 2008 AIDS Vaccine Advocacy Coalition meeting in Mombasa on the implications of MMC for women, 'Male circumcision doesn't alter relations; it helps the patriarchy to flourish.'³¹

Although many women were distressed about their submissive role in sexual decision-making, some voiced no objections to existing gender hierarchical norms. In South Africa, transition from apartheid to a democracy elicited resistance to patriarchal gender norms and greater public fluidity of gender identities.^{29,32} Although women have achieved full legal rights, including those pertaining to their reproductive health, gender-based power differentials are still deeply engrained in the fabric of South African society.^{33,34} Gender inequalities place women at a relative disadvantage to men in sexual decision-making and negotiation of sexual protection, and have been associated with increased risk for HIV infection among women.^{29,35–37} There is concern that there will be an escalation of gender-based violence if women refuse unprotected sex with circumcised men.³¹ A 2010 study in Africa exploring women's perceptions of MMC and its associated risks found that 54.0% thought that MMC could increase gender-based violence and 48.0% did not feel comfortable asking their partners to use a condom.³⁸ Many of the women in that study erroneously believed they would be directly protected if their partners were circumcised.

Some limitations of this study are noted. These include limited generalisability of findings due to the small convenience sample and perhaps the gender effects on discourse in the mixed-gender groups (also a potential strength). Furthermore, our sample was highly educated and therefore their beliefs and attitudes may not be representative of the general population in South Africa. Lastly, group dynamics may have led to over-representation of the views of certain participants and under-representation of others. Nevertheless, this study makes a contribution to the field as one of the few studies noting the gender dimensions of MMC and presenting women's perspectives in a high HIV prevalence context about this biomedical HIV prevention technology for men. Furthermore, the interviews took place

before the widespread promotion and roll-out of MMC in KwaZulu-Natal and thus provide an important baseline for comparison when looking at women's perspectives now that MMC has become more widely available.

MMC can provide a platform to promote gender equality.³⁹ The scale-up of MMC should be accompanied by systematic long-term efforts to address gender inequalities. Scale-up efforts must not eclipse the need for women-specific MMC interventions. Educational campaigns need to effectively promote messages about the partial protection of MMC and the lack of direct protection for women, clearly defining the risks and benefits for women.⁴⁰ These initiatives should help to mitigate the development of a false sense of security about MMC among women and their circumcised partners. MMC messages must also call for women to be actively engaged in discourse about MMC and strategies for promotion of MMC and prevention of compensation after MMC. After all, women have vested interests in MMC – as mothers, aunts, sisters and sexual partners of men who have been or are contemplating circumcision for HIV prevention. Finally, MMC offers an optimal opportunity to educate women about their sexual rights and infuse gender equality norms as components of a broader HIV prevention strategy.

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Table 1Participant characteristics ($n = 30$)

Characteristic	<i>n</i>	% ^A
Race		
African	27	90.0
Coloured	1	3.3
Indian	2	6.6
Age (mean and s.d.)	30	19.7 (0.3)
Religion		
United Church of Christ	15	50.0
Protestant	1	3.3
Zionist	5	16.7
Church of Nazareth	1	3.3
Roman Catholic	1	3.3
Hinduism	1	3.3
Other	4	13.3
Not religious	2	6.6
Home language ^{B,C}		
isiZulu	22	75.9
isiXhosa	3	10.3
English	2	6.9
Other	2	6.9
Home province		
KwaZulu-Natal	27	90.0
Eastern Cape	1	3.3
Free State	1	3.3
North-west	1	3.3
Sexually active		
Yes	23	76.6
No	7	23.3
Age of sexual debut (mean and s.d.) of sexually active women	23	17.7 (0.3)
Partner circumcised (of sexually active women)		
Yes	11	47.8
No	6	26.3
Not sure	6	26.3

^A Percent does not sum to 100% due to rounding error.^B Percents refer to percent of responses.^C One response missing.