"Perceptions of Risk and Sexual Behavior Change following Adult Male Circumcision in Urban Swaziland"

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ABSTRACT

Background: Male circumcision has been shown to reduce the risk of heterosexual transmission of HIV infection in men by up to 60% in three randomized controlled trials. However, little is known about the sexual behavior change of men who have been circumcised and whether the protective effect of circumcision leads to riskier sexual behavior. **Objectives**: To understand Swazi men's perceptions of their sexual risk following circumcision and to establish whether they take part in riskier sexual behavior after being circumcised as adults. **Methods**: This study uses qualitative in-depth interviews to understand men's sexual behavior after circumcision. Men in urban Swaziland, circumcised in the last 12 months, were recruited and asked about their perceptions of sexual risk, and sexual behavior post-circumcision. **Results**: Although behavioral disinhibition was investigated, results show that men report greater sexual responsibility and sexual satisfaction after the procedure. Results also indicate that HIV counseling and testing may act as a barrier to men seeking circumcision, which reinforces the need for consistent messaging supporting HIV counseling and testing practices with male circumcision scale-up. **Conclusion**: Contrary to concerns about men participating in riskier sexual behaviors following adult male circumcision, reducing one's the risk of HIV acquisition does not directly lead to riskier behaviors. Men decide to undergo the procedure primarily for the health-related benefits, as their main intention is to make themselves safer during sexual intercourse.

INTRODUCTION

AIDS is one of the most devastating public health crises in history, with approximately 33 million people living with HIV in 2007[1]. Male circumcision (MC) is now one of the newest HIV prevention strategies and is one of the most commonly performed operations globally. An estimated 665 million men, or 30% of all men, have undergone MC.

Three randomized controlled trials have shown that MC reduces the risk of heterosexually acquired HIV infection by up to 60% in men[2]. Several countries in sub-Saharan Africa with low levels of MC and high HIV prevalence are scaling up MC services. Swaziland, which has an HIV adult prevalence rate of 26.1%[3] and where it is estimated that 90% of all HIV transmission is through heterosexual intercourse[4], is one

such country[5]. It is estimated that the prevalence of MC in Swaziland's capital is approximately 14%, as infant MC is not routinely practiced[6].

As MC is not 100% effective at reducing the risk of HIV, there has been discussion that behavioral disinhibition* among newly circumcised men could potentially mitigate some of the procedure's protective benefits[7]. The three MC clinical trials investigated many of the same sexual behaviors, including condom use, number of partners, non-marital partners, alcohol use and sex, etc. The trial data show no consistent evidence of any substantial behavioral disinhibition.

Among these sexual behaviors evaluated in the Rakai, Uganda trial, significant differences were only shown in inconsistent condom use and alcohol use. Inconsistent condom use was higher in the circumcised group at the 6-month follow up visit, but uncircumcised men were more likely to report no condom use than circumcised men[8]. Though alcohol use with sexual intercourse was the same for the two groups at enrollment of the trial, it was higher among uncircumcised men at the 6, 12, and 24 month follow-up visit[9].

In the trial in Kisumu, Kenya, sexual behaviors among the two groups were similar, with the exception of significantly more circumcised men reported having two or more sexual partners in the previous 6 months and more unprotected sexual intercourse at 24 months[10]. Risk behaviors declined for both circumcised and uncircumcised men, and this can likely be attributed to the counseling that participants received during the trial[11]. In fact, it was suggested that the circumcised men actually reduced their sexual risk after circumcision[12], but the uncircumcised men reduced their sexual risk even more, which indicates that behavioral disinhibition was not operative during this study.

The trial from Orange Farm, South Africa found only minimal evidence of any behavioral disinhibition[13]. The mean number of sexual contacts showed statistically significant increases between the circumcised group and the uncircumcised group, though both arms showed increases in sexual partners (5.9 vs. 5.0, respectively, at the 12 month follow-up visit and 7.5 vs. 6.4, respectively, at the 21 month follow-up visit)[14]. This could possibly suggest that men who have undergone MC have more sexual contacts at enrollment, or prior to the debut of the trial, than men who had not undergone the procedure. This could also suggest that MC is unrelated to the number of sexual contacts, and that the two arms of the trial were simply different. The comparison between control and intervention groups following MC does not adequately address the question of whether MC is responsible for the increase in partners, or if the men in each group are practicing the same degree of risk-taking behavior as they were prior to the trial.

* If circumcised men believe that circumcision offers them protection from acquiring HIV, then they may take part in riskier sexual behaviors. These effects could mitigate some of the benefits of male circumcision. This reduced inhibition (or "disinhibition") refers to this phenomenon. This is also referred to as "risk compensation" in the literature, but in this paper, it will be referred to as behavioral disinhibition.

Behavioral disinhibition is difficult to identify in clinical trial settings, especially in trials powered to detect efficacy that were stopped early, which prevented long-term follow-up. Further analysis using a "risk scale" to characterize "sexual risk propensity" among the same men from the trial in Kisumu found no evidence that circumcised men engaged in increased sexual risk behavior following circumcision[15]. In fact they found that both circumcised and uncircumcised men reduced their sexual risk behavior over 12 months, which is consistent with other experimental studies of behavioral disinhibition and male circumcision[16,17].

There have been very few studies that evaluated behavioral disinhibition using qualitative methods, such as in-depth interviews. There is a strong need to better determine perceptions of risk and sexual behavior change following MC. Qualitative studies, as opposed to experimental study designs, may explore this topic in more depth and allow for descriptive understanding of the components involved in sexual behavior and male circumcision. This area of research is critical, given the continued concern that behavioral disinhibition could mitigate the protective benefits of MC.

AIMS

Research Question

Given the clinical evidence that MC is effective in reducing heterosexual HIV transmission among men[18], those who have undergone the procedure will consequently participate in riskier sexual behaviors.

Primary Objective

- To establish whether men in Swaziland take part in riskier sexual behavior after being circumcised as adults.

Specific Aims I

1) Understand men's perceptions of their sexual risk following MC.
2) Examine the current and prior sexual behavior among men who have recently undergone MC.
3) Evaluate whether men are resuming sexual activity prior to the recommended 6-week period of post-MC.

Secondary Objective

- To determine whether men's degree of satisfaction with the aesthetic results of the circumcision could act as a barrier to MC for other men

Specific Aims II

4) Establish men's overall level of acceptability, including their aesthetic satisfaction with the procedure in relation to their expectations.
5) Identify potential aspects of dissatisfaction with MC that could act as a barrier for uncircumcised men.

METHODS

Study Sites

The study was conducted in three urban sites, Mbabane, Matsapha, and Manzini, as they comprise the main urban corridor of Swaziland, and this study specifically targets urban Swazi men. These study sites were selected because they form the nation's central commercial and residential areas, and are among the most populated regions in the country. Most of the country's hospitals and clinics conducting male circumcision are also located within these areas.

Study Population

The target population for this study was men aged over 18 years residing in the greater Mbabane region who have undergone medically-performed MC within the last 12 months. Twelve months post circumcision was chosen as the timeframe, as this would allow sufficient time for participants to establish new patterns of sexual behavior or to resume their sexual behavior. It also allows sufficient recall of behaviors prior and post circumcision. Urban men were targeted for this study because most male circumcision clinics and services have focused on men residing in these urban areas.

Data Collection Methods

There are three primary reasons why in-depth interviews were chosen for this study. Firstly in-depth interviews involve open-ended questions that explore personal accounts of sensitive information, such as sexual behavior. Secondly in-depth interviews offered the highest level of confidentiality and privacy for the participants as they were disclosing their sexual experiences. Lastly in-depth interviewing collects personal narratives that allow comprehensive understanding of sexual experiences following MC. This study is focused on understanding men's sexual behavior change and their perceptions of risk following the procedure, so in-depth interviews were the optimal method to obtain such detailed data.

Participant Recruitment

Two purposive recruitment strategies were used in this study to ensure a diverse range of participants were included in the study. First, venue-based recruitment was used, whereby men were contacted at different venues in the communities of the study sites. Researchers were instructed to visit locations where men tended to congregate, such as: popular lunchtime restaurants, shopping centers, bus depots, taxi drivers, etc. Different areas of the cities were selected to avoid overlap in recruitment and provide greater diversity in participants. Second, the snowball technique was used to supplement recruitment. Snowballing can be limited by only focusing on one social network, so this study maintained an appropriate mixture by varying geographical locations and socio-economic areas of recruitment. Once interviewed, men felt comfortable encouraging friends to participate, which provided a type of trusted recommendation. Given that this study sought diversity in the selection of interviewed men, it employed different strategies to ensure participant variation.

Participants were purposively recruited into three broad categories following the procedure: those who were a) circumcised 6 weeks prior to the interview, b) circumcised 6 months prior to the interview and c) circumcised 12 months prior to interview. These time intervals were chosen to identify whether men have early resumption of sexual behavior after the procedure (i.e., 6 weeks), whether men's perceptions of acceptability of circumcision changes as healing occurs (i.e., 6 months), and whether their perceptions of risk and risk behavior change over a longer time since circumcision (i.e., 12 months), and to identify and evaluate any new patterns of sexual behavior.

Data Collection Process

Local research assistants were trained in ethical conduct of research, in-depth interviewing skills, and the overall objectives of this study. The training included topics such as informed consent, beneficence, confidentiality, and supervision of research and incorporated substantive discussions of male circumcision scale-up in Swaziland. Two weeks following the initial training, a refresher course was held to discuss improvement strategies for probing techniques to ensure that the full depth and detail was being explored during the interviews. Research assistants conducted pilot interviews to become more familiar with the interview guide and to test the suitability of certain questions. Following the pilot interviews, certain questions on the interview guide were modified for clarity, and once the questions were finalized, the guide was translated into siSwati. Research assistants conducted a total of thirty-three in-depth interviews. Data collection continued until the point of "saturation", when the issues raised in interviews begin to be repeated, this is a well accepted indicator for ceasing data collection in qualitative research[19].

Participants were given the option of conducting the interviews in the language in which they were most comfortable conversing, English or siSwati. Participants meeting inclusion criteria, such as being aged at least 18 years, resident of greater Mbabane, and undergone circumcision in the previous 12 months, were reimbursed 25 Rand (approximately 3 USD) for their time and transport expenses. The interviews were conducted in private conference rooms, participants' workplaces, and counseling rooms at HIV counseling and testing centers.

Data Analysis

After digitally recording the interviews, the audio files were transcribed verbatim. The interviews conducted in siSwati were translated and transcribed into English by the research assistants and checked for accuracy by an independent bilingual source. Transcripts were entered into MAXQDA, a qualitative data analysis software package to assist with data manipulation for analysis. Text from the transcriptions was coded using inductive and deductive codes. A grounded theory approach was used in the data analysis to group codes into themes and conceptual categories.

Data Quality and Study Limitations

One potential limitation of this study is that it focuses on the perceptions of urban men only and residing in the greater Mbabane region of Swaziland. It was not within the

scope of this study to include the perspectives of man from rural areas. However, the bulk of male circumcision scale-up in Swaziland has been primarily based in clinics in Mbabane or Manzini, so experiences with rural clinics have the potential to be quite different than those of men in urban areas, especially concerning reduced access to male circumcision services and education concerning the procedure.

RESULTS

Study results showed several main themes including increased responsible sexual behavior following MC, enhanced sexual pleasure, HIV counseling and testing as a potential barrier to MC, resumption of sexual activity, and alternative reasons for undergoing MC. These themes provide further understanding of men's sexual behavior following their circumcision, as well as their overall level of satisfaction with the procedure.

1 - Responsibility Several of the interviewed men described the risk involved in having unprotected, casual sex. The draw of riskier sex now that they are circumcised is clear, but the majority of men realize that that sort of behavior is counter-productive in regards to the procedure that they endured. One participant plainly stated that: "I still am very cautious so as not to get infected. I can't just say that now that I have been circumcised, I can behave wildly." When asked about their feelings concerning their individual risk of HIV now that they are circumcised, by far the most common responses related to a new sense of responsibility and a new resolve to abstain or limit sexual partners. Men referred to this as an "awareness" that they did not have before the procedure. When asked about keeping the risk of HIV low, one man replied:

> PARTICIPANT: Yeah, I want to keep the risk low. If the reason I circumcised is because I wanted to reduce the risk, it would be a waste to circumcise and then go and get the HIV afterwards. I would have gone through some unnecessary pains.

Other men expressed similar ideas, that circumcision will help to prevent the acquisition of HIV, but it is not the final solution to maintaining sexual health. The men indicated practical understanding concerning the benefits of male circumcision: "even though I now have 60% [protection], it's not 100 because the 40% [risk] is still there. I still have to run away from this thing (HIV)." In general participants realize that circumcision will reduce their chances of contracting the virus, though it will not eliminate them. The men in this study insist that they are improving their likelihood of avoiding STIs and HIV.

> PARTICIPANT: Okay the honest truth, I think I can say it is more or less to reduce STIs. Being exposed like the virus because everyone I think is just scared of it, but even the STDs…because the virus is not curable. More or less it [MC] reduces the chances of being infected with STIs, if it happens that I have a sexual relationship with a person.

2 - Sexual pleasure Another common theme from this research is the notion that circumcision increases sexual pleasure. Most men referred to being able to have sex for longer prior to ejaculation. The overwhelming majority of men in this study referred to the ability to "last longer," especially during consecutive sexual encounters. They do not describe the actual feeling of sexual intercourse to be improved per se, but their descriptions of having more sexual stamina suggests that this is pleasurable, as it may alleviate some concerns about quick ejaculation.

> PARTICIPANT: Yah there was a difference because at first when you are not circumcised you release sperms quickly. And then when you are circumcised you take longer, yeah it really takes a longer time. That was the only difference I felt.

Men often link this change with a greater ability to please their female partners during sex. This leads to being able to keep their girlfriends happy and consequently faithful. Men did not appear to discuss this directly with their female sexual partners, but they seemed to be aware that longer sessions of sexual intercourse translated into better sex. As one participant said in response to his reasons for getting circumcised:

> PARTICIPANT: I did it because I wanted to satisfy my girl, I didn't want her to leave. If you are circumcised, they say she enjoys. Then I decided to do it. Also they say that you take longer... you see, to finish early when your girl is not satisfied. So I decided to do it so I would feel like the man so that the lady does not go. So really that is it. I wanted to please my girl and satisfy her. Yeah that's it.

Men frequently mentioned that their girlfriends prefer having sex with men who are circumcised. Though they do not present any evidence of this, they suggest that as boyfriends, if they were to opt against circumcision, then it seems completely possible to them that their girlfriends may pursue sexual relations with other men who are circumcised. This sense of "duty" among recently these men acts as another reason why men would choose to pursue male circumcision.

3 - HIV Counseling and Testing According to the interviewed men, HIV counseling and testing has an interesting and complicated relation to male circumcision, as men are routinely offered tests prior to the circumcision. Interviewed participants often referred to HIV counseling and testing as a difficult but necessary step in the process of getting circumcised. They described the experience of getting tested as giving them the information to become more focused on their status, and the circumcision provides them with the biomedical procedure to help them maintain a low risk: "if you get your results that you're negative, then you have a new strength to want to stay negative".

Though refusal to test is officially not grounds for denial of male circumcision services in Swaziland[20], interview participants regularly mentioned that it is in fact required, and they discussed the mandatory nature of HIV counseling and testing in order to get circumcised. For most, the decision of getting an HIV test is very difficult and a "challenge", but this is made easier because the fact that one is then permitted to pursue circumcision:

> PARTICIPANT: P: OK for example, people have to get tested for a circumcision; people want the benefits of being circumcised, so in order to get those benefits, they have to test. So that's one way, when the test is not the end results, it is something you are pursuing. For example…when you want to be a soldier, you have to be tested. So it's not like people want to get tested, but they want to be soldiers..."

More often, however, HIV counseling and testing was seen as a barrier to more men pursuing circumcision. When asked if they think that men are discouraged from getting circumcised because they fear the HIV test, the overwhelming response was yes. Though previous studies have indicated a high demand for male circumcision in Swaziland, data from these interviews suggest that fear of learning one's HIV status is enough to prevent men from actually getting the procedure.

4 - Resumption of Sexual Activity According to WHO's guidelines about male circumcision, men undergoing circumcision need to abstain from all sexual activity for at least six weeks after the procedure. The wound needs time to heal in order to withstand sexual intercourse, and taking part in sexual activity prior to six weeks, especially without a condom, could actually increase the likelihood for contracting HIV due to open wounds. When participants were asked about this topic specifically, they offered wide ranges for how long they chose to wait before resuming sexual activity. Some claim that they were told to wait until they were fully healed, and many men took it upon themselves to determine how many days after the procedure this meant. Men said that they were told that they needed to abstain anywhere from a couple of weeks to several months. Many men described determining themselves when they were healed by saying how well they felt and whether the stitches had all fallen out. One participant described waiting for three weeks after circumcision before resuming sex because:

> PARTICIPANT: Really I was afraid of this thing of not healing properly. I was afraid of getting sick, so I waited for it to fully heal. That would not be good. Yeah, I wanted to get healed completely.

5 – Alternative Reasons for Male Circumcision When asked why they were interested in pursuing male circumcision as adults, the overwhelming majority of men involved in this study suggested that HIV prevention and the reduction of STIs was their primary reason. Several men also suggested that they had been experiencing preexisting problems with their penis or foreskin and that circumcision could be a way to resolve these problems. These problems ranged from the difficulty of keeping a condom in place on the penis during sexual intercourse to more physically painful experiences. Among this subgroup, many of the men described getting hurt from sexual intercourse due to foreskin that would roll down during sex and cause pain. Others said that the foreskin that was not wide enough to fully retract during an erection, which is commonly referred to as phimosis. One participant described his predicament:

> PARTICIPANT: Okay what happened is my gland, I think it was attached to the foreskin, so the hole at the front was small, so whenever I got an erection whereby the foresgland has to come out, it was sort of like tight, you see, it was tight. So it couldn't come out whenever I had an erection. When it was normal, I was okay, but whenever I had an erection whereby the foresgland had to come out, that's when it was painful. It was like I had to remove the whole foreskin and everything would be okay.

Some men even discussed getting cuts on their foreskin during sex and having severe bleeding as well. When probed on the origins of these problems, the men suggested that their doctors told them that it was due to an unresolved STI, though these men claimed that they did not believe that this was a plausible diagnosis because they had never had risky sex. A few of these men claimed that they were told by friends that sexual intercourse can just be painful at times, and it gets more enjoyable over time. One participant describes his conversation with his father about his painful foreskin. His father suggests that these painful experiences are common for younger men and that men are just supposed to wait until they are older for the sex to become more enjoyable:

> PARTICIPANT: OK, I was telling you about that part that sex is uncomfortable, and he told me that no, no, no, it's because you're still a bit young. But as you grow older, it's not uncomfortable at all. So he thought it was unnecessary to get circumcised.

DISCUSSION

Male circumcision is becoming more accessible to many young men throughout Swaziland, especially in urban areas. Men have largely reported more satisfying sexual intercourse following male circumcision, and generally they have not been participating in riskier sexual behaviors. Though men indicate acting more "responsibly" after the procedure—and therefore minimizing much of the concern associated with behavioral disinhibition—data from these interviews suggest that HIV counseling and testing may act as a barrier to access, due to the fear of a potential positive result. HIV stigma is high in Swaziland, and both HIV counseling and testing providers and male circumcision implementers should work more closely to communicate more precise messaging. Likewise the vast differences in reported periods of abstaining after MC should also indicate the need for refined messaging and post-operative counseling. Male circumcision may also remedy men's preexisting problems with their foreskin and/or penis (possibly from unresolved STIs), which suggests that pre-circumcision counseling may be an opportunity for clinicians to discuss problems that men may be experiencing and address other personal health concerns. As Swaziland continues to scale up its circumcision services for men, these issues take on additional importance.

CONCLUSION

This study examined the perceptions of sexual risk and potential increased sexual risk taking among urban men in Swaziland who had undergone adult MC in the previous 12 months. Though most men choose to undergo MC for the benefits associated with a reduced risk of certain STIs and HIV, other health related reasons are also major components of the decision-making process. Other benefits, such as improved sexual pleasure and stamina, may also play a considerable role as well. The findings from this study suggest that though men are not engaging in riskier sexual behaviors following MC, continued communication and counseling efforts are required to ensure that men do not engage in riskier sexual behavior. This type of counseling could begin during the HIV counseling and testing sessions that precede the MC counseling to reiterate messaging about the partial of MC. It is clear that broad scale-up of adult MC services can lead to more responsible sexual behaviors among men, which can eventually reduce the burden of HIV throughout Swaziland.

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