



PSC Research Reports

Report 12-764

June 2012

Rachael Pierotti and Rebecca Thornton

Contemplating Circumcision for
HIV Prevention

Contemplating Circumcision for HIV Prevention

Rachael S. Pierotti
University of Michigan

Rebecca Thornton
University of Michigan

Population Studies Center Research Report 12-764
June 2012

Please do not cite without author permission.

Corresponding author: Rebecca Thornton, Department of Economics, University of Michigan, 213 Lorch Hall, 611 Tappan St. Ann Arbor MI, 48109-1220, USA; rebeccal@umich.edu

Funding for this study was provided by 3ie. The authors gratefully acknowledge use of the services and facilities of the Population Studies Center at the University of Michigan, funded by NICHD Center Grant R24 HD041028. One of the authors was supported by the National Science Foundation Graduate Research Fellowship [Grant No. DGE 0718128]. We are grateful for the hard work and cooperation of BLM and especially Brendan Hayes. We acknowledge the extensive contributions of the field team as well as Jobiba Chinkhumba, Susan Godlonton, Ernest Mlenga and Justin Schon. We also thank the Development Ideational Change Project at the University of Michigan Population Studies Center.

ABSTRACT

This paper presents evidence from 64 in-depth interviews with a sample of urban men who participated in a quantitative study of prospects for increasing medical male circumcision for HIV prevention in Malawi. Despite genuine interest in circumcision, stumbling blocks in the decision-making process deterred men from undergoing the surgery. The high cost of circumcision, including time off from income generation during the recovery period, forced men to choose between circumcision and other responsibilities. Men were often hesitant to give high priority to circumcision because of fear of the surgery. Moreover, men had limited access to accurate information on medical circumcision, which they could have used to allay their fears. Finally, inadequate service provision meant that some men who attempted to get circumcised were turned away by the clinic. Many of these barriers in the decision-making process were especially problematic because medical male circumcision is relatively rare in Malawi.

1. INTRODUCTION

Recent studies showing that medical male circumcision lowers the risk of HIV transmission by up to 60 percent prompted the World Health Organization (WHO) and UNAIDS to call for scale-up of circumcision in high HIV prevalence countries in Eastern and Southern Africa. Male circumcision is not a new practice in the region and acceptability studies give reasons to be optimistic about the prospects for the success of widespread circumcision campaigns; in these studies the majority of uncircumcised men (65 percent across 13 countries) express hypothetical willingness to get circumcised (Westercamp & Bailey 2007).

Given the high levels of reported willingness to get circumcised, and the large benefits for HIV prevention, many expect a rapid uptake of male circumcision when services are made available. In this current study, however, only a small percentage of men offered an opportunity to obtain a circumcision opted to undergo the procedure. The findings in this paper are part of a larger study combining qualitative and quantitative data from urban Malawi to examine the demand for medical male circumcision. The quantitative data indicate that among a large sample (approximately 1,700) of uncircumcised men, approximately 50 percent indicated hypothetical willingness for a circumcision, but only 8.9 percent actually did get circumcised after one year.

In this paper we use in-depth interviews with 64 men to examine the decision-making process of men who are contemplating circumcision. Interview participants were asked to describe their knowledge and opinions of circumcision, as well as how they decided whether or not to get circumcised and any efforts they undertook to get circumcised. Many of the men in our study described genuine motivation to get circumcised. At the same time, they needed time to contemplate the decision, consult with trusted sources, and logistically prepare for the surgical procedure. The majority of the respondents who did get circumcised explained that they had started the process of contemplating the surgery even before the arrival of the research team. These men had both a high level of motivation and a head start in the decision-making process.

While prior qualitative studies have examined barriers to male circumcision (Ngalande et al. 2006; Jung 2012), this paper is the first to our knowledge that combines quantitative data on *actual* circumcisions with qualitative data on *actual* barriers, rather than *hypothetical* willingness and *hypothetical* barriers. Our in-depth interviews allow us to examine respondents' narratives of their actions in response to information about male circumcision and HIV prevention as well as an offer of a reduced price circumcision at a local clinic. We are able, therefore, to examine

men's decisions about circumcision as complex and evolving; in other words, we are able to investigate the *actual process* of decision-making.

The paper proceeds as follows: Section 2 provides background on male circumcision and Malawi. Section 3 describes the data. Section 4 describes the study setting and the qualitative sample. Section 5 presents the results from the interviews. Finally, Section 6 concludes.

2. BACKGROUND: MALE CIRCUMCISION, HIV, AND MALAWI

Circumcision, one of the oldest surgical procedures in the world, has gained recent attention as a potential HIV prevention strategy. Randomized control trials in South Africa, Kenya, and Uganda provided overwhelming evidence that medical male circumcision can be up to 60 percent effective in reducing female to male HIV transmission risk (Auvert 2005; Bailey et al., 2007; Gray et al., 2007). Following the randomized control trials, recognized HIV/AIDS organizations such as the WHO and UNAIDS made official recommendations encouraging voluntary medical male circumcision as an HIV prevention strategy (WHO 2007).

Sub-Saharan Africa—with the greatest proportion of HIV/AIDS cases in the world—has varying rates of male circumcision. Up until the recent medical male circumcision trials, the main reasons for getting a circumcision were religious or cultural. In Malawi, where our study takes place, the patterns of male circumcision are similar. According to the Malawi Demographic Health Survey in 2010, an average of 19 percent of men reported that they were circumcised, which is correlated strongly with ethnicity and religion.¹

Studies examining the hypothetical acceptability of male circumcision in Malawi find consistent support for circumcision. Ngalande et al. (2006) conducted focus group discussions in Malawi in 2003 among men and women ages 16-80 and found that male circumcision is generally acceptable and many people would welcome the provision of male circumcision services. Bengo et al. (2010) found that nationwide 35 percent of uncircumcised men reported being hypothetically willing to be circumcised. However, the number of actual medical circumcisions being performed in Malawi is quite low. As of 2011, it was estimated that 3,119 medical male circumcisions were performed since 2008, reaching only 0.1 percent of its target (WHO 2011). While uptake of adult male circumcision for HIV prevention in Malawi is low, it

¹ Two ethnic groups in particular contain the majority of men who are circumcised – the Yao, with 86% of men who are circumcised, and the Lomwe, with 33% circumcised. Religion is also important: approximately 93 percent of Yao's in Malawi are Muslim, as opposed to less than 2 percent among other ethnic groups (DHS 2004).

is difficult to know if this is due to the lack of demand, or because of the limited supply. Circumcision services are not currently easily available in Malawi and the government did not outline a national policy for the promotion of circumcision until October, 2011.

3. DATA AND METHODS

The data for this paper come from qualitative in-depth interviews with uncircumcised men ages 18-35, who were randomly selected from a private clinic catchment area in Lilongwe, Malawi's capital city. The qualitative interviews were conducted as part of a larger quantitative survey experiment investigating prospects for scaling-up male circumcision for HIV prevention. The quantitative survey is described first below, followed by a description of the qualitative data collection.

Quantitative Survey

The quantitative survey consisted of two waves of data collected among a random sample of eligible men. Approximately 1,700 uncircumcised men were interviewed in March 2010. The sample was drawn from the catchment area of the private clinic that partnered with the research team to offer male circumcision services.² Approximately one year later, in June 2011, the study team attempted to re-contact all respondents for a follow-up survey and achieved a response rate of approximately 77 percent.

The quantitative study included two interventions that were randomly assigned at the end of the baseline interview. First, respondents were given a price subsidy voucher to cover a portion of the cost of a circumcision at the nearby private clinic. The vouchers were redeemable at the local partner clinic, a private clinic that primarily provides reproductive health care. The clinic has been expanding their services to include male circumcision. Men who wish to get circumcised may walk in at any time during regular business hours to undergo counseling and to schedule or undergo surgery. Although, as discussed further below, patients were often told that

² The catchment area included several census enumeration areas, which were further divided into blocks using landmarks such as roads, streams, and large footpaths. Two blocks were randomly selected from each enumeration area. Within each block selected into the study, a full household census was conducted in which all members of the household were listed. During this time men who were eligible for the study were identified. In particular, eligibility was defined as any man – regardless of circumcision status – who was a permanent resident in the household, aged 18 to 30. In households in which more than one eligible man resided, one man was randomly selected. Only uncircumcised men were included in the full interview.

the circumcision specialist was not available and were asked to return on another day. In 2010, the clinic offered male circumcision for 950 Malawian Kwacha (approximately \$6.75). The amount of the vouchers varied from a price reduction of 50 Kwacha (\$0.33) to a complete subsidy, making the service free. The second treatment was the provision of information: some of the respondents were informed that circumcision is partially protective against contraction of HIV.³

Qualitative Interviews

In-depth interviews were conducted with a total of 64 young men.⁴ Participants in the in-depth qualitative interviews were randomly selected from respondents in the quantitative study. Panel A in Table 1 shows the distribution of baseline survey respondents while Panel B shows the number of respondents approached and interviewed in the qualitative study. To sample men into the qualitative study, we grouped men into four distinct categories: 1) those who were circumcised as recorded by clinic records (41 men), 2) those who were not circumcised as recorded by clinic records, 3) those who were counseled at the clinic but not circumcised as recorded by clinic records (4 individuals), and 4) those who were circumcised – as recorded by self-report at the follow-up survey, but were not in the clinical records (70 men) .

Within the first two groups those recorded as either circumcised or not circumcised from the clinic records, respondents were randomly selected, stratified on their intervention treatment group (information and voucher amount). Within the third group, all four men were included in the qualitative sample, and within the fourth group, 14 men were randomly selected.

If one of the respondents selected for a qualitative interview was not successfully interviewed by the quantitative survey team at follow-up, he was removed from the qualitative sample and replaced with another randomly selected respondent from the same group. The response rates for the qualitative in-depth interviews within these groups are presented in Table 1, Panel B. Of the in-depth interview participants, 29, or 45 percent of the sample were circumcised.

³ With selected respondents, interviewers read through a standardized information sheet that explained the three randomized control trials in Uganda, South Africa, and Kenya, as well as the results from these trials. They also discussed some of the medical reasons why circumcision is partially protective against HIV.

⁴ In addition, 19 pilot interviews were conducted in one block of the clinic's catchment area.

Table 1: Sample Size and Stratification

Panel A: Baseline Survey Sample Size	
<i>Quantitative Baseline Survey</i>	1706
<i>Stratified by Circumcision Decision 3 months after Baseline:</i>	
Circumcised	37
Not Circumcised	1669
Panel B: Qualitative Sample	
<i>Number Approached for Participation in Qualitative Sample:</i>	
Circumcised	20
Not Circumcised	31
Counseled, Not Circumcised:	4
Circumcised, Not in Clinic Records:	16
<i>Proportion Successfully Interviewed for Qualitative Study:</i>	
Circumcised	0.90
Not Circumcised	0.90
Counseled, Not Circumcised:	1.00
Circumcised, Not in Clinic Records:	0.88

Respondents in the qualitative portion of the study participated in a semi-structured interview lasting between 45 minutes and 3 hours. The interviews were conducted in Chichewa by male Malawian interviewers. Before data collection, the interviewers were trained on the purpose of the study and the interview guide. The interview guide contained open-ended questions on knowledge and opinions of male circumcision, factors considered when deciding whether or not to get circumcised, and the circumcision experience for those who underwent the surgery. Interview guide translation from English to Chichewa was done as part of the interviewer training, which facilitated further discussion of the interview goals. A third party back-translated the guide into English, providing an additional check of the translation. The interview guide and the skill of the interviewers were tested in pilot interviews. Four interviewers were retained at the end of the training and piloting period.

Before each interview, respondents were informed of their rights as research participants and gave written informed consent. With additional consent, a digital audio recorder was used to record the interview. All respondents were offered 250 mobile phone airtime units (approx. value of \$1.67) at the end of the survey to thank them for their participation. Ethics board approvals for this study were obtained from the University of Michigan and the University of Malawi College of Medicine.

The interviews were transcribed into Chichewa and English. Each English transcript was read through once to identify common themes in respondents' decision-making processes. The common themes were then used as initial codes and all English transcripts were coded using a commercial software package designed for the analysis of qualitative data. After detailed coding, the transcripts were read a second time and macro codes indicating the respondent's level of interest in circumcision were assigned based on a holistic assessment of the interview. Finally, a research assistant also read and assigned macro codes to each interview transcript. Any differences in coding were deliberated and final coding was determined based on a collaborative review of the transcript. All the names used in this paper are pseudonyms to protect the identity of the respondents.

4. SETTING AND SAMPLE CHARACTERISTICS

The setting for this study is a neighborhood within Lilongwe, Malawi, with considerable heterogeneity in socio-economic conditions. Table 2 presents some of the summary statistics for the qualitative interview sample. The area is accessible by public transportation from the main bus depot and the two commercial and business centers of the city. The most densely populated section of the area contains a grocery, police station, and many small shops. This is where the partner clinic is located. The variety of house constructions provides visible evidence of the socio-economic heterogeneity. Houses range from mud constructions in disrepair with no privacy fence to structures made of cement with corrugated iron roofs, brick fences, and iron gates. The wealthier houses have electricity and water running directly to the house; others collect water from community water pumps. Most residents of the area are renting their accommodations; relatively few well-off families own their own homes.

The sample is ethnically diverse, although there were very few Yao interview participants since only respondents who were uncircumcised at baseline were eligible to participate in the survey experiment. Similarly, all respondents are Christian, since nearly all Muslims in the area were already circumcised as of the baseline survey.

Given the sample age restrictions for the survey of ages 18-35, the mean age of the sample was approximately 25 years old. Overall, respondents included in this sample are wealthier and better educated than the average Malawian citizen. Wealth was measured using an asset scale, an estimate of monthly expenditures, and a question capturing whether the respondent's household has electricity. Interview participants own an average of 3.4 assets.⁵ The median monthly expenditure total among interview participants was \$117. That the standard deviation of monthly expenditures is \$93 is an indication of the considerable variation in wealth among interview respondents.⁶ Almost two-thirds of the sample respondents have electricity in their household. Nearly all respondents are literate in both Chichewa and English. They have completed an average of more than 11 years of school.

Table 2 also includes indicators of respondents' health and sexual behaviors, as well as their knowledge and attitudes about circumcision. More than 90 percent of respondents have had sex in their lifetime with an average number of 2 sexual partners in the year before the survey. Just under half of the respondents had ever visited the study partner clinic for any reason. Of the in-depth interview participants, 48 percent had ever been tested for HIV. At the baseline survey, 60 percent of respondents said that they would be willing to get circumcised. Before any information was provided by the research team during the baseline survey, almost 60 percent of respondents reported that circumcised men have a lower risk of contracting HIV than uncircumcised men.

It is important to note that men in our sample are likely to be more comparable to other young men living in relatively large metropolitan areas in Malawi and other African countries than they are to rural Malawians.

⁵ Eight items are included on the asset scale: sofa, television, bicycle, car, computer, stereo system, hotplate/stove, and refrigerator. The scale is additive, with one point assigned to each asset that the respondent or the respondent's household owns.

⁶ Respondents were asked to estimate how much they personally spend every month on clothes, medical expenses, food, transportation, and mobile phone air time. These figures were added to derive the total monthly expenditure estimate, which is converted to U.S. dollars using an average exchange rate.

Table 2: Characteristics of the Sample

		Mean (std. deviation)
<u>Demographics:</u>	Age	25.30 (5.26)
	Years of education	11.03 (2.57)
	Literate in Chichewa	0.968
	Literate in English	0.937
<u>Ethnicity:</u>	Chewa	0.254
	Lomwe	0.175
	Ngoni	0.333
	Tumbuka	0.111
	Yao	0.032
	Other	0.095
<u>Religion:</u>	Christian	1.000
<u>Wealth:</u>	Assets scale (0-8)	3.365 (2.17)
	Median monthly expenditures (USD)	116.7 (93.51)
	Has electricity	0.607
<u>Health and Sexual Behavior:</u>	Ever had sex	0.919
	Number of sexual partners in past year	1.806 (2.65)
	Ever used a condom	0.787
	Ever been to the study partner clinic	0.460
	Ever been tested for HIV	0.476
	Perceived risk of HIV:	
	High	0.129
	Medium	0.081
	Low	0.371
	None	0.323
Never had sex/Don't know	0.097	
<u>Circumcision:</u>	Willing to be circumcised	0.603
	Reason(s) why not interested in circumcision:	
	Pain	0.160
	Bad for my health	0.320
	Don't agree with the religious practice	0.360
	Don't trust the doctors	0.040
	I am too old	0.280
	Afraid of dying	0.040
	Heard of someone circumcised at partner clinic	0.270
	Believes circumcised men have lower risk of HIV	0.587

5. RESULTS

Willingness to Undergo Circumcision

In the baseline survey data collection of this study in 2010, approximately 50 percent of the quantitative sample indicated that they would be willing to be circumcised. Despite this level of demand for male circumcision in Malawi, very few of the respondents in this study were actually circumcised within the year following the survey. One possible explanation is that survey respondents over-estimate their willingness to get circumcised, perhaps due to social desirability bias. This is especially plausible given that members of the survey research team are inevitably associated with efforts to promote circumcision, despite their best efforts and training to be neutral. Although this may explain part of the discrepancy between the hypothetical acceptability and the actual uptake, the qualitative data provide additional evidence that a substantial portion of the men in this study had genuine motivation to get circumcised.

As we read through the interview transcripts, three categories of respondents emerged from the data: 1) respondents who had gotten a circumcision, 2) those who had not gotten circumcised but still had interest in circumcision, and 3) those who expressed either no interest or outright opposition to circumcision for adult men. Of the 35 interview participants who had not gotten circumcised, 19 respondents, or 54 percent, were coded as genuinely interested in circumcision. Note that this figure approximates the proportion of men who reported at the baseline that they would be willing to undergo circumcision.

The most distinct group of interview participants were the men who clearly had no interest in becoming circumcised—approximately 46 percent of the respondents who did not undergo circumcision. They explained that circumcision was irrelevant in their lives. For example, an interview participant named Joseph said, *“I don’t even desire to do it in any way even though it is good and I know its advantage. But for me to go and get it, no, I don’t do that.”* He explained that circumcision is fine for younger people, but at his “old” age (Joseph is 30), he felt that circumcision would be too painful and he was not interested. A similar statement came from Matthews: *“In my heart I doubted that I could have gone there. I knew that I couldn’t have gone there because I do not take part in those things.”* He was unwilling to discuss his reasoning and instead continually reiterated his lack of interest. These respondents make it clear that regardless of any potential benefits, they do not believe that circumcision is for them. They are

unlikely to become circumcised in the near future, regardless of their circumstances or the design of potential interventions. Their answers are in stark contrast to the decision-making process described by other respondents who are more open to circumcision.

Those who did not get circumcised and who were coded as having interest in circumcision explicitly expressed a continued desire for the surgery. Moreover, some also explained why they wanted a circumcision despite the availability of other methods of preventing HIV. Two main issues were raised repeatedly: limitations of condoms for prevention and lack of trust in partners. Respondents explained that because of these issues, circumcision made sense as an additional strategy for preventing HIV transmission.

The commonly discussed problems with condoms were that they were not always appropriate, desirable, or available. Emmanuel explained that condom use in marriage is generally seen as inappropriate because it implies a lack of trust in your partner. He said, *“Condom use is also a better method, but people who are married see it as a problem. This is the case because if you are using that, it's like you are still untrusting each other.”* This concern is echoed in the findings of other studies on HIV and condom use in Malawi and beyond (e.g. Tavory and Swidler 2009; Hirsch et al. 2009). Peter described a general dislike of condoms, which is common in Malawi. He explained, *“A lot of young men hate using condoms because they do not feel anything. [They say,] ‘I may just lose my money by having sex while putting on a condom.’”* implying the futility of sex with a condom. Goodwin, who was circumcised, says he encourages his friends to do the same because he knows that they do not like using condoms: *“so I see that most of my friends have a tendency of having sex with different kinds of women, so I do take part in explaining to them to say; I think maybe the best thing is maybe if you can consider this circumcision. Maybe you can be half way protected. Because there are other people who don't like to use condoms but they want to have sex with a woman plain [no condom on].”* Condoms are generally disliked because they destroy the “sweetness” and the pleasure of sex (Watkins 2004).

Availability of condoms was also noted as a problem. In part, this may result from the other two commonly cited problems with condoms; men do not want to carry condoms because of what it would signal about their sex lives and because they do not always want to use them. Several men gave examples of situations where unprotected sex occurred because condoms were not available or were forgotten. Christopher, who was circumcised between the baseline and

follow-up surveys, illustrates, “*one may use protection against STIs, but you may not always be ready to do that [use a condom]. You may want to have sex when you do not have condoms. In my case, I travel quite a lot. I was in Zomba yesterday and I might be travelling to Karonga today. Such things happen. It may happen sometimes that we have a breakdown and you are found at an awkward place unexpectedly and forced to sleep. You may have sexual desires that you cannot control. You may not have an opportunity to use a condom.*” Edward also describes this problem, “*So, I am a man, [who thinks] ‘I should drink one here’ [Bottle of beer]. You may meet prostitutes, yeah. When you meet those prostitutes you do things under intoxication and you cannot remember a condom. You just say, ‘Ah, you, I will give you money. Let us have sex here.’ So, those things can cause a person... you will find that you will do that alright, but you will find that [after] three days, four days something has started itching in the body, yeah.*” In sum, condoms are not seen as a universal solution to the need for HIV prevention because they are not always appropriate, desirable, or available.

Remaining faithful to one partner is also not seen as adequate protection from HIV because many men feel unable to trust their partners. Emmanuel explains, “*As you know, our major problem is diseases. You may be in marriage and say you are trusting each other, but since we don't know what each other thinks... But this [circumcision] might be a better way to protect myself if my partner is not faithful.*” Joshua expresses that he wants a circumcision because his partners might not disclose their HIV status to him: “*Yeah, I was confident that male circumcision is significant in HIV prevention, because if one is circumcised then you can have a reduced chance of getting the HIV from someone, let's say your girlfriend, who in the first place hides from you that she is HIV positive.*” Daniel, who got circumcised, clearly summarizes this point, “*Ah, trusting one another on issues of health? It's like every one of us stays separate from the other. I cannot know the way she is conducting herself there and me here. We are people who when we meet, we chat, and then everybody goes to her home. But on the issue of health these days it is everybody takes care of their own affairs; you take care of yourself on issues of health.*”

By describing the limitations of other methods of HIV prevention, these men demonstrated a real interest in circumcision. Certainly, their degrees of motivation to get circumcised varied, but it is clear that on some level, many of them continue to consider undergoing the surgery. And yet, only a very small percentage of the men actually did get

circumcised in the year between the baseline and follow-up surveys. An examination of respondents' decision-making processes illuminates that simply removing the barrier of the cost of the surgery did not remove some of the other barriers that prevented them from getting circumcised. Opting for circumcision is a decision that requires time, planning, and courage. In an environment where few men are getting circumcised for HIV prevention, access to accurate information on circumcision, and to circumcision provider services is often limited or inadequate. These contextual factors make an already complicated decision even more difficult. Each of these barriers to circumcision is reviewed in the following sections.

The Decision Takes Time

Opting to get circumcised as an adult male is a big decision, even with the potential benefits of the surgery. The decision requires considerable planning for various costs and the accumulation of motivation and encouragement to overcome the fear and anticipated pain. A few of the respondents explicitly addressed the need for time to make the decision to get circumcised. When the interviewer asked Solomon what came to his mind when he received the subsidy voucher, the respondent explained, *“Ah, what came that time... I was still thinking to say; should I do this or not? I was thinking about it and it was found that I had not yet made the real decision until when he came the second time [the follow-up survey enumerator]; when you came in July, yeah. After he came this period in July this year I made a real decision to say, at least this thing is helpful, yeah.”* The interviewer probed, asking what helped him make the decision. And he responded, *“Ah, that time what I was thinking was that... since it was first time [learning about circumcision], it was something very confusing to me, but now I have grown a bit. I am able to know a lot of things. So that is what caused me to make the right decision, yeah.”*

Thomas used his voucher to get circumcised, but he admitted that he had wanted a circumcision for 1.5 years before the arrival of the research team and had never attempted to get the surgery. He explained his period of inaction by saying that it takes people time to accept a new social practice: *“Yes, there is something I would like to add and it is that when you people are doing research there is need for you to tell the people things “zogwira mtima” [that touch their heart]. We people have difficulty to understand what we knew a long time ago to be changed within a matter of a day; it is something difficult.”* Later he continues, *“Because when you are putting into the mind of a person something that you are saying is good, you have to*

oppose something that he knows before you tell him, you see that? Or what their parents told them, yeah.” He highlights the fact that when adult male medical circumcision is introduced as an HIV prevention strategy, circumcision suddenly becomes a relevant option for men who previously thought that circumcision did not apply to them. The new messages about circumcision conflict with previous understandings of circumcision, learned from older generations, as a practice that was conducted only on young Yao or Muslim boys. He explained that it takes time for people to change their minds.

Planning to Cover the Costs

Part of contemplating circumcision is considering the various costs that will be incurred during the process. As described above, the circumcision itself costs approximately the equivalent of between 1.5 and 2.5 days of average earnings (although many in the sample earn well below average). The subsidies offered by the vouchers varied, and many of the men in the study did not manage to make it to the clinic for circumcision during the three-month voucher validity period. Even more problematic to the majority of the respondents was the expectation that they would be out of work for approximately one week while their wound healed. Given that many of the respondents use their daily earnings to feed themselves and their families, taking this much time off of work required advance planning or external support. Edward explained the advanced preparation necessary: *“And also by the time I shall be going there, I should be ready, since I have a wife, I have children. For me to be home full time for one week, there is need for food. So, I will have to prepare very well to say, ‘If I will be home these will be sufficient for me up to the time I will get healed.’”*

An interview participant named Justice said at one point during the interview, *“I wish I was circumcised.”* But at another point he explained all of the costs involved:

“Yeah, money was just a problem but that circumcision is very important. Because for you to go to the hospital, then that means you should keep money, transport, K3000 so that they can circumcise you [3,000 Malawi Kwacha is the price of circumcision surgery at some clinics in Lilongwe]. And also when you get circumcised there is need that here in the home there should be some support. You should be using that money during the days

that you are not moving, but male circumcision is very important. It is very important; it is only the money for going to the hospital that is scarce for you to get circumcised."

David explained that his income supports many family members, so it is not easy for him to forgo earnings:

"The time was there to go to hospital, but because I was busy with work, because we get our wages at the end of each day. So I thought not to go because that would have taken me a lot of days without working, considering that the family relies on me now. If the money I get was enough, it could have been better. Currently I have my younger brother, who I support his education with the same money. So, I thought that if I go I will lose the money for several days that I could have used for supporting my family and my younger brother."

Echoing the concerns about caring for family while healing from the circumcision, Michael said, *"I have a family and one child, I pay rent, and everything I do it on my own. So I say; aah, with that, if I can go to the hospital to do that [get circumcised] how am I going to pay rent, what am I going to eat?"* Francis also worried about how he would find money for food if he was not working every day: *"like I have said that I really want that circumcision...even today I can go there [to the clinic], but like I have said that I do some piece works to find food...so for me to go there I may stay for about one week laying down but then what will I eat?"*

In the research site, most men have both low and uncertain incomes, as well as family members who rely on them. It was difficult, therefore, to prioritize circumcision over an income generating opportunity. Planning and saving for an elective loss of income during the recovery period necessitates prioritizing circumcision over other potential uses for those resources, which requires a high degree of commitment. When men are asked hypothetical questions about circumcision, they are usually asked whether they would be willing to undergo circumcision, but they are not asked what they would be willing to give up in order to undergo the surgery. The data presented here provide evidence that when making actual decisions about circumcision men consider these trade-offs.

Overcoming Fear and Anticipated Pain

As just described, to prepare for all of the costs, men had to prioritize circumcision over other ways they could spend their resources. At the same time, fear of potential damage that could result from botched surgery and fear of the pain discouraged men from making circumcision a priority. When asked what disadvantages of circumcision he considered, an interview participant named Blessing said, *“Okay, the problem that I thought of is... on the issue of circumcision, just hearing from people they say, but when you do that like that... when you get circumcised, you feel much pain. So, that was what I feared... the thing that I was fearing a lot was the pain.”* James echoed the same concerns when asked if he had fears, *“Yes. That cannot fail. I am a person. We expect that even when someone just touches the luggage [penis] you feel awkward just at the touch, so imagine someone cutting your foreskin; for sure you would have some fears so yes I had some fears.”*

Many of the respondents described their fears in vivid imagery, suggesting that they had spent time visualizing the worst-case scenarios. Zachariah explained his fears most succinctly: *“My only fears concerned the outcome of poor surgery, which would consequently lead to one being disabled and that would compel the surgeons to completely cut the whole thing off.”* When asked what he considered when deciding whether or not to get circumcised, Robert said, *“the other thing was that maybe as a person you might become abnormal, that's considering how they have done it there [circumcision]. The way they have done it maybe instead of doing things orderly they have rushed through the process...so maybe you might find yourself...I can say...maybe that organ is now having some abnormalities or complications like maybe swelling like that.”* Edward explained that he will get circumcised when he becomes “courageous:” *“the time I will be courageous I should go there and see how they will deal with me.”* He feared that, *“it happens that after they have circumcised you it [the penis] swells. So, it is found that you get destroyed; the entire sex organ gets destroyed.”*

Jonah, who was so afraid that he was coded as having no interest in circumcision, put it plainly during his interview. He pointed at his penis and said, *“You know, this is life.”* The men who told stories of circumcision gone terribly wrong acknowledged that their fears were based on unfounded rumors, but the rumors were scary. Their decisions about circumcision were not simply rational calculations; emotions played an important role. The difficulties of preparing for the material costs of circumcision were compounded by the fears associated with the surgery.

Moreover, in the Malawian context where few men have undergone circumcision as adults, there are relatively few first-hand accounts that men can rely on to allay their fears. The inadequate availability of accurate information about circumcision is the subject to which we turn next.

Availability of Accurate Information

Men in our study reported receiving both encouragement and discouragement from friends, partners, and families. Importantly, they also reported receiving a lot of conflicting information. So, in addition to the preparation necessary to cover the costs and the courage necessary to overcome the fear of circumcision, respondents were also confronted with uncertainty about the circumcision process itself. Many respondents were unsure of the unsubsidized cost of circumcision and the length of the healing period. This uncertainty led to stalling in the decision-making process.

Juma gave a detailed explanation of his decision-making. When he got the voucher for circumcision from the research team, he first went to his friends for advice. Some of his friends relayed rumors they had heard about circumcisions gone wrong, while others encouraged him to get the surgery. They also gave him a variety of responses to his questions about how much the circumcision would cost and the length of the recovery period. When asked what he considered when deciding whether or not to get circumcised, he said, *“Obviously the first thing was what my friends told me that once I get circumcised the wound would not heal and eventually my private parts will start to disintegrate up to the point that they will just cut them so as to prevent me from dying. Then I said to myself that it was not worth dying for. I said I was going to think deeply over this. And then I asked another person, then another one, and again another one, then I said I think the other one was telling me lies. Then I said this one is telling the truth, just like this one is also saying the truth. I said to myself that I was still going to get the real answer.”*

After searching for accurate information among his friends, he finally sought advice from a trusted advisor at a local youth center, who convinced him that circumcision was a good option. He went to the clinic for more information on the process, only to find the clinic closed for the day. Failing at the clinic after dealing with so much uncertainty from his friends led him to temporarily abandon his interest in circumcision.

An interesting contrast is provided by Andrew, who did get circumcised. He also had some friends tell him horror stories about the possible negative consequences of circumcision gone wrong, as well as some friends who encouraged him. In addition, however, he was friends

with a neighbor and many men from his work at the taxi rank (taxi stand) who had gotten circumcised as adults. Hearing their experiences helped him to disregard the fearful rumors he had heard elsewhere. He explained that while considering the horror stories relayed by his friends, he remembered, *“three quarters of the men at Kawale rank also got circumcised, and they would be saying that such such a person has been circumcised and such such a person has been circumcised. So I said if they did not die, why should I be the first person to die? So I said no, I will go and I will get circumcised.”* Also, he saw his neighbor the day after the neighbor’s circumcision and was reassured that the surgery itself is not a painful process. For him, having personal connections with several men who had been circumcised as adults convinced him that it was safe to get circumcised.

Many of the men in the sample did not have this level of access to first-hand information about the circumcision process. Moreover, as discussed in the next section, accessing information from official sources was often difficult as well.

Inadequate Service Provision

The availability of circumcision services from the clinic in the research site was often unreliable. Most of the interview respondents who were circumcised between the baseline and follow-up surveys had to go to the clinic more than once before they managed to get the surgery. Moreover, some respondents tried several times to get circumcised and finally gave up after a few failed visits to the clinic. The specialist who performed circumcisions was often unavailable and patients were asked to return another day. At other times, the number of men seeking circumcisions exceeded the clinic’s capabilities for one workday.

An interview participant named Prince went to the clinic three times to try to get circumcised and failed all three times. He was so discouraged by this experience that he has not attempted to go back. He explained, *“When I received the voucher, I managed to abide by the dates. I went there and I was told the doctor was not available. I waited for an hour and later left. I went there the following morning where I produced the voucher and had to wait again for an hour or so and the doctor did not show up. I was told to wait because the doctor was coming. I went there again. I really wanted to do it but the person [doctor] I was looking for was not available. This is what brought this whole thing to a halt.”* He had gotten as far as seeking the services and was dissuaded by the lack of availability of the doctor.

Francis went to the clinic to get circumcised shortly after receiving his voucher, but the specialist was not available that day. The interviewer asked if he had gotten counseling when he was at the clinic and the respondent said, *“Aah, they just told me to come again, they did not explain to me to say; this will be like this and that...”* After this attempt to get circumcised, his friends discouraged him, so he never went back to the clinic.

Blessing went to the clinic for circumcision and was turned away. He had to leave town shortly thereafter and did not manage to go back to the clinic before his subsidy voucher expired. He said, *“They said that, right now we are busy. So why don’t you come tomorrow? When the next day came I started to do what? It was like a sudden journey to the home village and to do other things. When I came back from there, I found that my voucher had expired. They told me that, your voucher has expired and it cannot be used.”* As discussed above, getting a circumcision requires courage and advanced planning to assemble the required resources. For many respondents, it was discouraging to get as far as the clinic reception only to find that they would have to return another day. The delay often led to further consideration of the resources required and of their fears of circumcision, which ultimately meant they did not make returning to the clinic a priority.

Previous Interest in Circumcision

The respondents who did undergo circumcision experienced many of the same challenges as those who did not get circumcised. They were concerned about the resources required to get circumcised, felt fear about the surgery, and faced inadequate service provision. The majority of them, however, had contemplated the pros and cons of circumcision before the arrival of the research team, and had already made their decision that they wanted to be circumcised. Out of the 29 interview respondents who were circumcised during the research project, 21 of them stated clearly that they knew before their first survey interview that they wanted a circumcision. This is the most distinguishing feature of the group of respondents who got circumcised. As described earlier, the decision to undergo circumcision is difficult and it takes time. These respondents had already taken the time to contemplate circumcision and had decided that it was in their best interest. When the research team arrived, therefore, and offered a substantial discount on the price of circumcision, many of them were eager to take advantage of the opportunity.

Nathaniel had a long-standing interest in circumcision, but he had been discouraged by the cost of the surgery, so he was excited when the research team offered him a voucher.

“What really drove me to this was.....I already had the interest, so when I went for other reasons... like I said, I was told that the cost of circumcision was one thousand something kwacha, but because at that time I did not really have a reliable source of income, I just went back home. So when these research guys came, the first ones they were giving out vouchers. I also asked about the cost of the circumcision at that time I went to the hospital, by the way. They said that if one was lucky they could get a voucher that would mean that they would have to pay less money towards the cost of the circumcision. After they did their random selection, I was given a 950 kwacha voucher, which meant that I could just go to the clinic and get circumcised free of charge because the voucher was catering for the whole cost. So for me it was something like a chance because now what I had wanted all along would become possible...”

Paul had a similar story. When the interviewer asked him about the factors he considered when contemplating circumcision, he said, *“You know what? When you have wanted something for some time and when you find it free of charge it is priceless to you and you immediately want to go for it. That also drove me to make the decision because it was also free of charge. I did not want to even tell my friends for fear of them making me afraid again by telling me that circumcision is painful so I went.”* He clearly faced fear of pain and financial constraints, but having already made up his mind that he wanted a circumcision, he did not want to miss the chance to get circumcised for free. Thomas was also happy to receive the voucher: *“I received it happily because that time I also had the thoughts to do things like these [to get circumcision], yeah. So, when I received that voucher I was very happy to say, ‘Maybe now I can do the things I wanted freely,’ yeah.”* The vouchers made it possible for these respondents to meet their goals of getting circumcised.

Other respondents described how they had been interested in circumcision and the arrival of the research team provided the final incentive they needed to make the circumcision happen. Nile explained that receiving the voucher was the motivation he needed and he used the voucher to get circumcised: *“So, it was like we found a better opportunity to do that because [before] we lacked a certain pressure from some people or advice to say, ‘Let's go.’ So, because a voucher was available I saw that this is the opportunity.”* Paul clarified that the research team’s arrival

helped him decide to ignore his fears, *“Since my Standard eight [school] days, I wanted to go to the Central Hospital to get circumcised, but I was discouraged by my friends. They made me afraid. That time for one to get circumcised they had to pay four hundred and fifty kwacha. They told me that it would be very painful, so I decided not to get circumcised, up to the point you came and gave me a voucher, and I said to myself that a chance had availed itself to me. Then I said to myself that I will go there and experience the pain myself. That was when I went to get circumcised...”*

Steven hypothesized that the people who got circumcised were those who were already interested when the research team arrived. He said, *“Like for me I feel that the goodness was that that thing found me when I already had the thought, you see? Yeah, so when the person [researcher] came and gave me the voucher, it was like he was just adding onto the thought that I already had.”* After describing the difficulty of introducing the idea of circumcision to someone for the first time, he continued, *“But I see that we people who went maybe we already had those thoughts, yeah.”*

The majority of the interview respondents who had previous interest in circumcision got circumcised. This finding fits with the results presented earlier that the decision to get circumcised takes time. Having already decided that they wanted circumcisions, these men were motivated by the price reduction to find the courage and resources necessary to get the surgery.

Of course, previous interest in circumcision is not a perfect predictor of the interview participant's decision regarding circumcision. Some respondents who got circumcised and did not talk about having interest before the arrival of the research team seemed particularly fearful of HIV/AIDS, which provided their motivation. Mark says he *“cannot trust a woman.”* He trusts his girlfriend *“0.5 percent”* and says, *“That is the highest percentage I have ever trusted a woman in my life.”* His motivation is extra protection from HIV that does not rely on the cooperation of a partner. Another interview participant, Benjamin, who got circumcised, expressed his fear of HIV by saying, *“These days, things are not okay.”* He continued, *“Most of the people that are being found to be HIV positive these days are the youth. Most of them are less than 25 years old, which is our group, we youth.”* His heightened sense of vulnerability to HIV seems to have provided a high level of motivation for circumcision. As he says, *“Things are not ok, so without circumcision, eishh! So for me I support circumcision.”* These cases show that interested men with enough support and motivation can overcome the challenges of resource constraints and fear and can make a decision in favor of circumcision within a reasonable time frame.

A few men who clearly indicated that they were interested in circumcision before the research team arrived and yet they still did not manage to get circumcised after they were given the subsidy voucher. For them, cost issues primarily prevented them from getting circumcised. Zachariah had wanted a circumcision since he was young because his mother was from a circumcising ethnic group and because some of his friends had experienced the protective power of circumcision against sexually transmitted infections. His precarious financial situation prevented him from getting circumcised despite his motivation. Even with the subsidy voucher, he could not manage to pay the remainder that was due to the clinic. He explained, *“The only problem I had on that day was that I had a K500 voucher. I did not have enough money to pay for the difference.”* He tried going to the clinic for a circumcision in the hopes that they would assist him even if he couldn’t pay, but they turned him away: *“As for me, I completely had nothing on me. I returned home even after having filled the forms. I was told I could not be assisted.”*

David learned about the benefits of circumcision in school. He had gone to the clinic before the arrival of the research team to enquire about the cost of a circumcision and he decided that he could not afford it. At that time he was a student and he relied on his mother for support. Although she favored his decision to get circumcised, she was unable to provide him with the required funds. Several years later when the research team arrived and gave him a voucher to cover most of the cost of the circumcision, he had become the income earner for his family and he was unable to take time off of work for the circumcision and the healing period. He explained, *“What actually happens is that when our work is in progress, it goes as far as working the whole day until morning. I understand if you get circumcised it takes about 7 days, so I took it as a long period, considering that it's a work that is more like wage labor, not the kind of work that you get monthly salary.”* He could not justify forgoing a week’s worth of income for a circumcision. Both Zachariah and David faced such large financial constraints that they were unable to act on their desires for a circumcision.

In sum, the majority of respondents who got circumcised were those who had decided before the arrival of the research team that they wanted a circumcision. They had had time to contemplate how they would overcome the material and emotional barriers to circumcision. When the subsidy voucher made the surgery cheaper, they took advantage of the opportunity.

6. CONCLUSION

The results described in this paper come from in-depth interviews with a sub-sample of the men in a survey experiment designed to investigate prospects for scaling-up male circumcision for HIV prevention in urban Malawi. The research project was innovative because its longitudinal and experimental design allowed us to measure actual acceptability of adult male circumcision, rather than hypothetical acceptability. The participants were offered an opportunity to obtain a subsidized circumcision at the private clinic in their neighborhood and their decisions were captured in a follow-up survey approximately one year later. The quantitative survey results indicate that while approximately half of the survey respondents indicated in the baseline survey that they would be willing to get circumcised, less than ten percent of them actually did get circumcised.

The in-depth interviews provide critical insights into the complex decision-making processes of the research participants. We found, first, that about half of the respondents had no real interest in circumcision, corresponding with the fifty percent who reported in the quantitative survey that they would not be willing to get circumcised. The other half of the respondents who did not get circumcised continued to express some level of interest in undergoing circumcision. Many of them demonstrated their motivations by describing the flaws in other HIV prevention methods.

However, even with genuine interest, very few managed to get the circumcisions that they claimed to want. We found that it takes time to contemplate the pros and cons of circumcision. Many of the men in our sample had both low and uncertain incomes making it difficult for them to prioritize circumcision over potential income generating opportunities. To prepare for circumcision, they would need to have saved not only enough money to pay for the surgery, but also enough money to maintain their households (pay rent, buy food, etc.) during the one-week recovery period. Thus, even with expressed interest in response to hypothetical questions, men may not be willing to prioritize getting circumcised over other responsibilities in their lives.

Fear of the wounds and pain from the surgery often attenuated men's level of commitment. Many of the respondents described, in vivid detail, worst-case scenarios that could result from a surgery gone wrong, including disfiguration, amputation, or death. This emotional

reaction to the idea of circumcision led to hesitancy, even among those who had calculated that circumcision might be good option for them.

The relative inaccessibility of accurate information on the medical circumcision process from either first-hand sources or medical experts meant that men had limited means to assuage their fears. Because adult male circumcision is still relatively rare in Malawi, many men were unable to get a first-hand account of the process. Men sought general information about circumcision from their friends who had been circumcised as youth during a rite of passage, but they often did not trust these friends to give them the whole truth or correct information about the process of circumcision at the clinic. Quite a few interview respondents stalled in their decision-making process because they did not know basic facts about the surgery, such as the price and the estimated length of the recovery period. Moreover, men usually received conflicting advice from different friends and relatives; some encouraged circumcision while others discouraged the practice, usually by emphasizing rumors of circumcision gone wrong.

Finally, men's choices about circumcision were influenced by the inadequacy of circumcision service provision. Men trying to get circumcised had to return repeatedly to the clinic, and some gave up after multiple failed attempts. For some men, it was discouraging to get as far as the clinic reception only to find that they would have to return another day. The delay often led to further consideration of the resources required and of their fears of circumcision, which ultimately meant they did not make returning to the clinic a priority.

Choosing to undergo circumcision is a complex and difficult decision that is a dynamic process involving preparation, acquiring information, and choosing what makes sense given a man's individual concerns. During this process, men often lose interest before ultimately committing to undergo the surgery. This finding was underscored by the discovery that the majority of the interview participants who got circumcised had decided before the arrival of the research team that they wanted a circumcision. They had already contemplated how to prepare for the material and emotional costs of circumcision. When offered a chance to get circumcised at a reduced price, they eagerly took advantage of the opportunity.

It must be noted that these results are representative of young men in urban Malawi, but they may not generalize to more rural areas or different settings. As urban dwellers, these men have more access to healthcare services, more access to media, and higher educational attainment than their rural counterparts. In addition, they live in more socially heterogeneous

communities and they may be more removed from the customs and influence of their elders. Further research on decision-making regarding adult male medical circumcision in a variety of settings is needed.

Another important characteristic of the research setting is that adult male medical circumcision is relatively rare and the process and barriers described by these Malawian men may be specific to this type of context. In other settings, male circumcision for HIV prevention has been introduced with extensive community mobilization efforts and campaigns. For example, in the township of Orange Farm, South Africa, an intensive pilot intervention introduced a center for medical male circumcision and within two years almost 40 percent of previously uncircumcised men over the age of 15 had undergone circumcision (Lissouba *et al.* 2010). In Kenya, more than 230,000 circumcisions have been performed in target communities since the launch of a national program in late 2008 (Herman-Roloff *et al.* 2011). These efforts to provide medical male circumcision were accompanied by community-wide public awareness campaigns.

In Malawi, national efforts to promote circumcision have been limited thus far. It is likely that the decision-making processes of men who are contemplating circumcision vary substantially between low-uptake and high-uptake environments. Most obviously, men in communities where adult circumcision has become a common choice would not face the barriers to accurate information on the circumcision process that were faced by the respondents in our research site. Moreover, ready access to accurate information may help to assuage some of the fears associated with circumcision, which are generally fueled by rumors of the ill effects of botched surgeries.

The calculations regarding whether to prioritize circumcision over productive activities would also be different in an environment where circumcision is a common practice for adult men. Men would not need to worry as much that their decision would be criticized. Also, in a community where adult male circumcision is common, it is easy to imagine that there would be more social support for men and their families that would sustain them during the circumcision recovery period. Finally, a more robust system of circumcision service delivery would mean that men who decide to have the surgery are able to obtain the desired service.

The results of this study indicate that there are many stumbling blocks in the decision-making process that prevent men from ultimately choosing to undergo circumcision surgery.

Some of the decision-making hurdles likely result from the fact that adult male circumcision is not currently common in Malawi. And yet, we find that there is genuine interest in circumcision for HIV prevention among a substantial portion of the study participants. Successful interventions will need to tap into this latent demand. If the supply of circumcision services can be expanded and uptake of circumcision increased, there may be a reduction in some of the barriers in the decision-making process that now prevent men with moderate levels of interest in circumcision from choosing to undergo the surgery.

REFERENCES

- Auvert B, T. D., Lagarde E, Sobngwi-Tambekou J, Sitta R, et al. 2005. "Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: The ANRS 1265 trial." *PLoS Med.* 2: e298.
- Bailey, Robert C., Stephen Moses, Corette B. Parker, Kawango Agot, Ian Maclean, John N. Krieger, Carolyn F.M. Williams, Richard T. Campbell, Jeckoniah O. Ndinya-Achola. 2007. "Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomised controlled trial." *Lancet.* 369(9562): 643-656.
- DHS, M. 2004. "Demographic and Health Surveys, Malawi."
- Gray, Ronald H., Godfrey Kigozi, David Serwadda, Frederick Makumbi, Stephen Watya, Fred Nalugoda, Noah Kiwanuka, Lawrence H. Moulton, Mohammad A. Chaudhary, Michael Z. Chen, Nelson K. Sewankambo, Fred Wabwire-Mangen, Melanie C. Bacon, Carolyn F.M. Williams, Pius Opendi, Steven J. Reynolds, Oliver Laeyendecker, Thomas C. Quinn, Maria J. Wawer. 2007. "Male circumcision for HIV prevention in men in Rakai, Uganda: a randomised trial." *Lancet.* 369(9562): 657-666.
- Herman-Roloff A., Llewellyn E., Obiero W., Agot K., Ndinya-Achola J., et al. 2011. "Implementing Voluntary Medical Male Circumcision for HIV Prevention in Nyanza Province, Kenya: Lessons Learned during the First Year." *PLoS ONE.* 6(4): e18299. doi:10.1371/journal.pone.0018299.
- Hirsch, Jennifer S., Holly Wardlow, Daniel Jordan Smith, Harriet M. Phinney, Shanti Parikh, and Constance A. Nathanson. 2009. *The Secret: Love, Marriage, and HIV*. Nashville, TN: Vanderbilt University Press.
- Jung, Jaehyun. 2012. "Male Circumcision Pilot Program in Lilongwe, Malawi." *Consilience: The Journal of Sustainable Development* 7(1): 103-114.
- Lissouba, P., D. Taljaard, D. Rech, S. Doyle, D. Shabangu, et al. 2010. "A Model for the Roll-Out of Comprehensive Adult Male Circumcision Services in African Low-Income Settings of High HIV Incidence: The ANRS 12126 Bophelo Pele Project." *PLoS Med* 7(7): e1000309. doi:10.1371/journal.pmed.1000309.
- Nagelkerke, Nico J.D., Stephen Moses, Sake J. de Vlas, and Robert C. Bailey. 2007. "Modelling the public health impact of male circumcision for HIV prevention in high prevalence areas in Africa." *BMC Infectious Diseases.* 7(16): 1-15.
- Ngalande, Rebecca C., Judith Levy, Chrissie P.N. Kapondo, Robert C. Bailey. 2006. "Acceptability of Male Circumcision for Prevention of HIV Infection in Malawi." *AIDS Behavior.* 10: 377-385.
- Stannus, H. S. and J. B. Davey. 1913. "The Initiation Ceremony for Boys Among the Yao of Nysaland." *The Journal of the Royal Anthropological Institute of Great Britain and Ireland.* 43: 119-123.
- Tavory, Iddo and Ann Swidler. 2009. "Condom Semiotics: Meaning and Condom Use in Rural Malawi." *American Sociological Review* 74: 171-189.
- UNAIDS. 2007. "Country Situation Analysis: Malawi." Available at: www.unaids.org.
- Watkins, Susan. 2004. "Navigating the AIDS Epidemic in Rural Malawi." *Population and Development Review* 30(4): 673-705.

- Westercamp, N. and R.C. Bailey. 2007. "Acceptability of Male Circumcision for Prevention of HIV/AIDS in Sub-Saharan Africa: A Review." *AIDS Behavior*. 11: 341-355.
- WHO. 2007. "WHO and UNAIDS announce recommendations from expert consultation on male circumcision for HIV prevention". Press release available at: <http://www.who.int/hiv/mediacentre/news68/en/index.html>.
- Williams, Brian G., James O. Lloyd-Smith, Eleanor Gouws, Catherine Hankins, Wayne M. Getz, John Hargrove, Isabelle de Zoysa, Christopher Dye, and Bertran Auvert. 2006. "The Potential Impact of Male Circumcision on HIV in Sub-Saharan Africa." *PLoS Medicine* 3(7): e262. doi:10.1371/journal.pmed.0030262.



PSC Research Reports

The **Population Studies Center** (PSC) at the University of Michigan is one of the oldest population centers in the United States. Established in 1961 with a grant from the Ford Foundation, the Center has a rich history as the main workplace for an interdisciplinary community of scholars in the field of population studies.

Currently PSC is one of five centers within the University of Michigan's Institute for Social Research. The Center receives core funding from both the Eunice Kennedy Shriver National Institute of Child Health and Human Development (R24) and the National Institute on Aging (P30).

PSC Research Reports are **prepublication working papers** that report on current demographic research conducted by PSC-affiliated researchers. These papers are written for timely dissemination and are often later submitted for publication in scholarly journals.

The **PSC Research Report Series** was initiated in 1981.

Copyrights for all Reports are held by the authors. Readers may quote from this work (except as limited by authors) if they properly acknowledge the authors and the PSC Series and do not alter the original work.

Population Studies Center
University of Michigan
Institute for Social Research
PO Box 1248, Ann Arbor, MI 48106-1248 USA
www.psc.isr.umich.edu