

## RESPONDING TO RISK: HIV PREVENTION AND MALE CIRCUMCISION

In rural Malawi, providing information about voluntary medical male circumcision and HIV transmission risk reduced risky sexual behavior among uncircumcised men, but did not increase take-up of circumcision. A subsequent evaluation of a voucher program in urban Malawi found that providing information and reducing the price of circumcision only slightly increased take-up.

Featuring evaluations by Jobiba Chinkhumba, Susan Godlonton, Alister Munthali, and Rebecca Thornton.

Seventy percent of the two million people newly infected with HIV in 2014 live in sub-Saharan Africa. In the 2000s, three medical trials found that male circumcision was up to 60 percent effective in reducing HIV transmission risk for heterosexual men.<sup>1</sup> Based on this evidence, the World Health Organization (WHO) made scaling up voluntary medical male circumcision (VMMC) a key component of its HIV prevention strategy in priority African countries with a high HIV prevalence.<sup>2</sup> Simulated projections in 2011 suggested that reaching 80 percent circumcision coverage in these countries by 2015 could result in net savings of more than US\$16 billion over fifteen years.<sup>3</sup> In 2015, priority countries had reached approximately 44 percent VMMC coverage, compared to the targeted 80 percent, and Malawi had only reached 8 percent of its target.<sup>4</sup>



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Two strategies for increasing VMMC are to provide men with information about its benefits and to subsidize its cost. However, little is known about the effectiveness of these interventions. One concern is that information could lead circumcised men to adopt riskier sexual behavior. Another important question is whether there is enough demand for circumcision to make high rates of coverage possible.

To address these questions, J-PAL affiliate Rebecca Thornton (University of Illinois at Urbana-Champaign) and Susan Godlonton (Williams College and IFPRI) ran two randomized evaluations in 2008 and 2010 with Alister Munthali (University of Malawi) and Jobiba Chinkhumba (University of Malawi). The first evaluation examined the impact of a VMMC information campaign on beliefs and sexual behavior in rural Malawi. The second evaluated a program in urban Malawi that provided vouchers for subsidized VMMC to measure demand at different prices.

**In the first evaluation in 2008, the rural information campaign reduced risky sexual behavior among uncircumcised men and had no impact on the behavior of circumcised men.** Uncircumcised men who received VMMC information reported using 1.1 more condoms in the past month, a 65.2 percent increase over the comparison group. Circumcised men who received information reported no difference in sexual behavior.

**Yet men who received information were more likely to incorrectly believe that VMMC also protects against female HIV infection.** Men who received information were 50 percent more likely to incorrectly believe that VMMC lowers a woman's HIV infection risk.

**In the second evaluation in 2010, providing information or lowering the price of VMMC only slightly increased take-up of circumcision in urban Malawi.** The most commonly cited reasons for being unwilling to be circumcised included cultural or religious reasons and fear of pain.

**In both evaluations, take-up of VMMC was very low.** One year after the first evaluation, only seven men reported having been circumcised. After the voucher program in urban Malawi, clinic records showed that only 2.6 percent of all VMMC vouchers were redeemed.

# EVALUATION

In 2007, the WHO named Malawi a high priority country for the scale-up of VMMC because of its high HIV prevalence (10.6 percent of adults aged 15-49 in 2010), and because 81 percent of men were not circumcised as of 2011.<sup>5</sup> By 2015, the number of circumcisions performed in the country only reached 8 percent of the target set by the WHO in 2011.<sup>6</sup> As in many African countries, male circumcision has deep cultural and religious roots in Malawi. For example, some ethnic groups conduct circumcision as part of initiation into adulthood for adolescent boys, while others do not.

## EVALUATION 1: INFORMATION CAMPAIGN IN RURAL ZOMBA, 2008–2009

Researchers evaluated an information campaign in the district of rural Zomba to examine the impact of providing information about VMMC on beliefs and sexual behavior. Prior to this campaign, information about circumcision had not been widely disseminated in the area. In seventy randomly selected villages, researchers conducted a baseline survey with 1,228 randomly selected men. The men were on average 31.6 years old with 5.9 years of schooling, earning an average of MWK 14,978 (US\$105.51 in 2008) a month. Most were married and over half were farmers. At the time, the nearest VMMC provider was a private hospital about 15 km away that offered adult circumcisions for MWK 900 (US\$6.34).

The seventy villages were randomly divided into two groups to receive informational visits from surveyors, as described in Evaluation 1 below. Consistent with most VMMC campaigns, no information was provided about the relationship between male circumcision and female HIV risk, as there is currently no conclusive evidence about how it affects women's risk. One year later, researchers revisited all survey participants, as well as a randomly selected sample of the men's spouses.

## EVALUATION 1

### Treatment

- Participant received an information session on the protective benefits of VMMC for men (approximately 10 minutes)
- Participant was given opportunity to ask questions about VMMC
- Participant received a general HIV prevention brochure

### Comparison

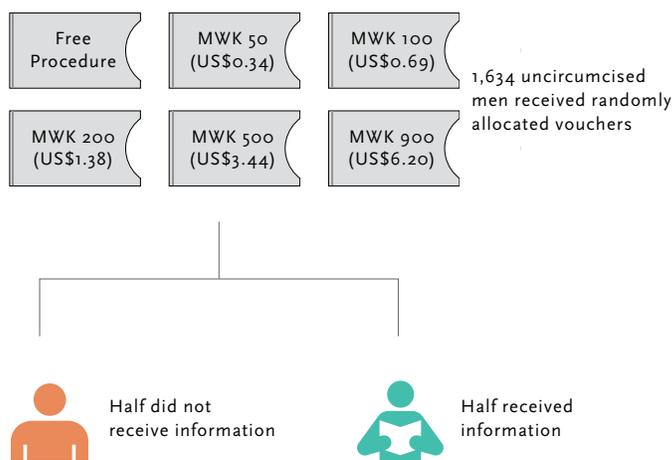
- Participant received a general HIV prevention brochure

## EVALUATION 2: VOUCHER AND INFORMATION PROGRAM IN URBAN LILONGWE, 2010

In 2010, researchers partnered with a private health clinic in Lilongwe to examine the impact of information and prices on demand for VMMC. That year, the clinic began offering the procedure for MWK 950 (US\$6.54 in 2010)—a significant cost for men in Lilongwe. The circumcision procedure itself is a simple outpatient surgery. Clients often report that the most painful part is the initial local anesthetic injection. After surgery, they are given painkillers to take for several days, and most men resume work within 2–3 days.

Among men aged 18–35 living in the clinic's catchment area, 1,634 uncircumcised men were randomly chosen to participate in a program that provided vouchers, valid for three months, for a subsidized circumcision at the clinic. As described in Figure 1, the value of these vouchers were randomly allocated. Half of these men were also randomly allocated to receive in-depth information about VMMC. Compared to the men in the first study, these men were younger (26.7 years on average), more educated (11 years of schooling on average), and wealthier. To measure demand, researchers used clinic records as well as follow-up surveys one year later.

FIGURE 1. EVALUATION 2



<sup>1</sup> Auvert B et al. 2005. "Randomized, Controlled Intervention Trial of Male Circumcision for Reduction of HIV Infection Risk: the ANRS 1265 Trial." *PLoS Med* 2(11):e298.

Bailey, Robert et al. 2007. "Male Circumcision for HIV Prevention in Young Men in Kisumu, Kenya: A Randomised Controlled Trial." *The Lancet* 369(9562):643–656.  
Gray, Ronald H. et al. 2007. "Male Circumcision for HIV Prevention in Men in Rakai, Uganda: A Randomised Trial." *The Lancet* 369(9562):657–666.

<sup>2</sup> World Health Organization (WHO). 2007. "New Data on Male Circumcision and HIV Prevention: Policy and Programme Implications." In *WHO/UNAIDS Technical Consultation on Male Circumcision and HIV Prevention: Research Implications for Policy and Programming*. Montreux: WHO/UNAIDS.

<sup>3</sup> Njeuhmeli E et al. 2011. "Voluntary Medical Male Circumcision: Modeling the Impact and Cost of Expanding Male Circumcision for HIV Prevention in Eastern and Southern Africa." *PLoS Med* 8(11): e1001132.

<sup>4,6</sup> World Health Organization. 2015. *WHO Progress Brief: Voluntary Medical Male Circumcision for HIV Prevention in 14 Priority Countries in East and Southern Africa*. Geneva: World Health Organization.

<sup>5</sup> World Health Organization. 2010. *Progress in Male Circumcision Scale-up: Country Implementation and Research Update*. Geneva: World Health Organization.  
National Statistical Office (NSO) and ICF Macro. 2011. *Malawi Demographic and Health Survey 2010*. Zomba, Malawi, and Calverton, Maryland, USA: NSO and ICF Macro.

# RESULTS

## EVALUATION 1

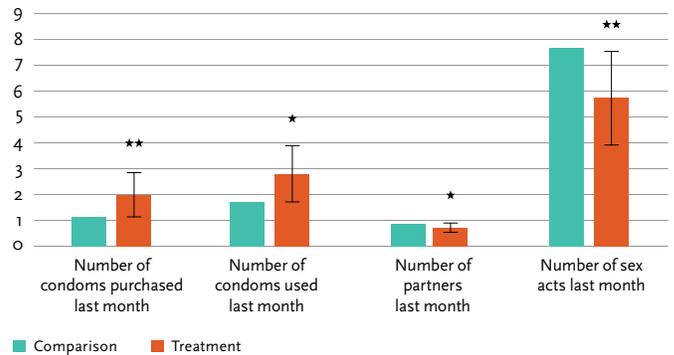
**The rural information campaign reduced risky sexual behavior among uncircumcised men and did not increase risky sexual behavior among circumcised men.** Uncircumcised men who participated in the rural information campaign in 2008 reported engaging in 2.0 fewer acts of sex in the past month relative to men in the comparison group (a 25.5 percent reduction); they also reported using 1.1 more condoms in the past month (a 65.2 percent increase). Importantly, circumcised men who received information did not report any difference in sexual behavior compared to circumcised men who did not receive information, suggesting that providing information can reduce risky sexual behavior among uncircumcised men without necessarily leading circumcised men to engage in riskier sex.

**Yet as a result of the information campaign, men were more likely to incorrectly believe that VMMC protects against female HIV infection.** Relative to their peers in the comparison group, men who participated in the rural information campaign were 50 percent more likely to incorrectly believe that VMMC lowers a woman’s risk of HIV infection. Female spouses held similar beliefs: 82 percent of the women who believed in the protective benefits of VMMC for men also believed it lowers a woman’s risk of HIV infection. Given that the information campaign made no mention of male-to-female HIV infection risks, these results suggest that individuals incorrectly inferred this from a public health message that only applied to men.

## EVALUATION 2

**Providing information or lowering the price of circumcision only slightly increased take-up.** Participants in the 2010 voucher program in Lilongwe who also received information about VMMC were 1.4 percentage points (66.7 percent) more likely to get circumcised than those who did not receive information. Those who were offered a free VMMC were 3.1 percentage points more likely to get circumcised than those offered the MWK 900 (US\$6.20) price. The likelihood of getting circumcised

**FIGURE 2. UNCIRCUMCISED MEN REDUCED RISKY SEXUAL BEHAVIOR ONE YEAR AFTER EVALUATION 1**



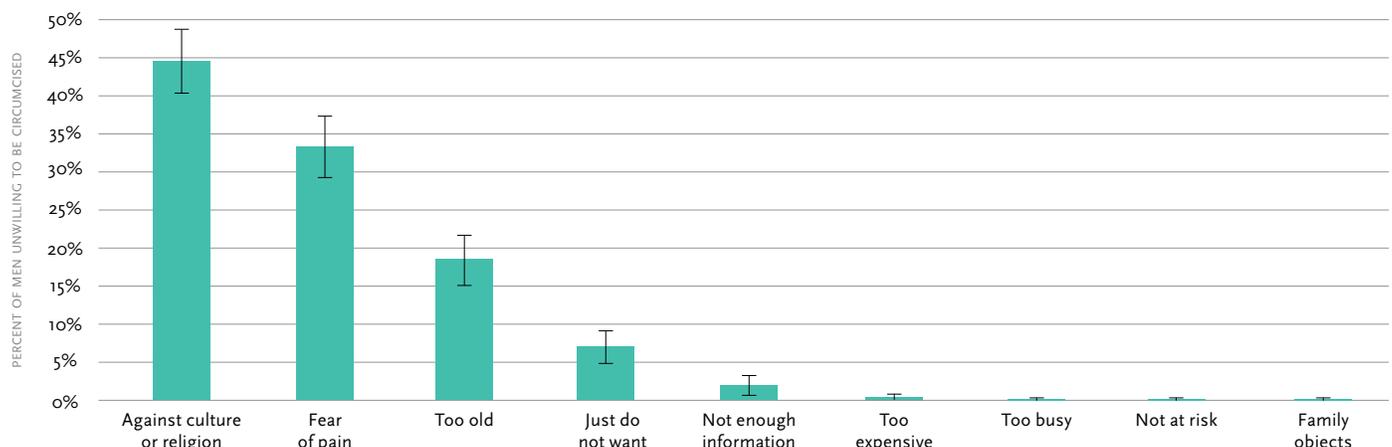
Note: Error bars represent 95% confidence intervals. Statistically significant difference relative to the comparison group is noted at the 5% (\*\*) or 10% (\*) level.

decreased as the price of the procedure increased, and no one took up the offer at the MWK 900 (US\$6.20) price. In the baseline survey for this study, researchers found that the most commonly cited reasons for being unwilling to be circumcised included cultural or religious reasons, fear of pain, or being too old. Follow-up surveys after the program showed that information and price had little impact on these attitudes.

### In both evaluations, overall demand for VMMC was very low.

One year after the 2008 information campaign, only seven men reported having been circumcised. One significant barrier to take-up in this context may have been that the nearest clinic was 15 km away. Uncircumcised men who participated in the rural information campaign were 25.1 percentage points (34.1 percent) more likely to express willingness to circumcise their male children, but there was no significant impact on the actual number of adult or child circumcisions during the study period. After the 2010 voucher program in Lilongwe, clinic records demonstrated that only 43 vouchers, or 2.6 percent of all vouchers, were redeemed within the three months after they were distributed.

**FIGURE 3. AT BASELINE IN EVALUATION 2, MEN MOST OFTEN GAVE CULTURAL OR RELIGIOUS REASONS FOR BEING UNWILLING TO BE CIRCUMCISED**



# POLICY LESSONS

**Providing men with information about male circumcision and HIV risk can encourage safer sexual behavior among uncircumcised men, and fears that information will lead to riskier behavior among circumcised men may be overstated.** The 2008 information campaign led uncircumcised men to adopt safer sexual behavior one year after a short information session, suggesting that VMMC information can have longer-term effects on sexual behavior. Importantly, there was no evidence that circumcised men increased their risky sexual behavior after receiving this information.

However, the impact of information may vary depending on context. For example, the circumcised men in this study were circumcised at young ages for cultural reasons. Their sexual behavioral response to VMMC information may thus be different from the potential response of men who choose to get circumcised as adults for HIV prevention reasons.

**VMMC information campaigns should state that there is no evidence that male circumcision reduces female risk of HIV transmission.** Men who participated in the 2008 information campaign were more likely to incorrectly believe that male circumcision reduces a woman's HIV infection risk, though the campaign did not provide any information about female risk. Their spouses also held similar beliefs. To mitigate this misconception, information campaigns should explicitly state that, at present, researchers have found no significant relationship between male circumcision and women's HIV risk. However, these messages need to be designed so that they do not reduce VMMC demand. More research is needed on how to effectively deliver information so that people gain an accurate understanding about VMMC's benefits.

**Reducing prices or providing information can increase demand for circumcision, but these interventions alone are not enough to substantially increase take-up.** The low demand for circumcision in both studies could offer one explanation for why progress towards the targeted 80 percent coverage has been slow in Malawi, and imply that large-scale VMMC campaigns could be less cost-effective than previously projected there. Targeting certain high-risk groups, such as young men and injecting drug users, may be more cost-effective.

The 2010 voucher program demonstrated that, while price and information matter, other significant barriers exist that future interventions in low-demand contexts should try to address. Qualitative results from the 2010 study indicate that the most common reasons for not getting circumcised include cultural or religious beliefs and fear of pain. Offering financial incentives could increase take-up by compensating men for the costs associated with surgery and recovery. While these studies did not examine the impact of incentives, research on cash or in-kind compensation may be an important next step.

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**Suggested Citation:** J-PAL Policy Briefcase. 2015. "Responding to Risk: HIV Prevention and Male Circumcision." Cambridge, MA: Abdul Latif Jameel Poverty Action Lab.

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