

Quarterly Research Digest on Voluntary Medical Male Circumcision for HIV Prevention

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Combination HIV prevention

1. Herrera, C., et al. **Dose finding study for on-demand HIV pre-exposure prophylaxis for insertive sex in sub-Saharan Africa: results from the CHAPS open label randomised controlled trial.** *EBioMedicine*. 2023;93:104648.

Online at: [https://www.thelancet.com/journals/ebiom/article/PIIS2352-3964\(23\)00213-X/fulltext](https://www.thelancet.com/journals/ebiom/article/PIIS2352-3964(23)00213-X/fulltext).

BACKGROUND: The efficacy of on-demand HIV pre-exposure prophylaxis (PrEP) for men in sub-Saharan Africa has not been evaluated, and the on-demand PrEP dosing requirement for insertive sex remains unknown.

METHODS: HIV-negative males 13-24 years, requesting voluntary medical male circumcision (VMMC), were enrolled into an open-label randomised controlled trial (NCT03986970), and randomised 1:1:1:1:1:1:1:1 to control arm or one of eight arms receiving emtricitabine-tenofovir disoproxil fumarate (F/TDF) or emtricitabine-tenofovir alafenamide (F/TAF) over one or two days, and circumcised 5 or 21 h thereafter. The primary outcome was foreskin p24 concentrations following ex vivo HIV-1(BaL) challenge. Secondary outcomes included peripheral blood mononuclear cell (PBMC) p24 concentration, and drug concentrations in foreskin tissue, PBMCs, plasma and foreskin CD4+/CD4-cells. In the control arm, post-exposure prophylaxis (PEP) activity of non-formulated tenofovir-emtricitabine (TFV-FTC) or TAF-FTC was assessed with ex vivo dosing 1, 24, 48 or 72 h post-HIV-1 challenge.

FINDINGS: 144 participants were analysed. PrEP with F/TDF or F/TAF prevented ex vivo infection of foreskins and PBMCs both 5 and 21 h after PrEP dosing. There was no difference between F/TDF and F/TAF (p24(day15) geometric mean ratio 1.06, 95% confidence interval: 0.65-1.74). Additional ex vivo dosing did not further increase inhibition. In the control arm, PEP ex vivo dosing was effective up to 48 post-exposure diminishing thereafter, with TAF-FTC showing

prolonged protection compared to TFV-FTC. Participants receiving F/TAF had higher TFV-DP concentrations in foreskin tissue and PBMCs compared with F/TDF, irrespective of dose and sampling interval; but F/TAF did not confer preferential TFV-DP distribution into foreskin HIV target cells. FTC-TP concentrations with both drug regimens were equivalent and approximately 1 log higher than TFV-DP in foreskin.

INTERPRETATION: A double dose of either F/TDF or F/TAF given once either 5 or 21 h before ex vivo HIV-challenge provided protection across foreskin tissue. Further clinical evaluation of pre-coital PrEP for insertive sex is warranted.

FUNDING: EDCTP2, Gilead Sciences, Vetenskapsradet.

Cost and costing

1. McBain, R. K., et al. **National evaluation of HIV service resource allocation in Tanzania.** *AIDS Behav.* 2023:1–10.

Online at: <https://link.springer.com/article/10.1007/s10461-023-04065-5>.

Using time-driven activity-based costing (TDABC), we examined resource allocation and costs for HIV services throughout Tanzania at patient and facility levels. This national, cross-sectional analysis of 22 health facilities quantified costs and resources associated with 886 patients receiving care for five HIV services: antiretroviral therapy, prevention of mother-to-child transmission, HIV testing and counseling, voluntary medical male circumcision, and pre-exposure prophylaxis. We also documented total provider-patient interaction time, the cost of services with and without inclusion of consumables, and conducted fixed-effects multivariable regression analyses to examine patient- and facility-level correlates of costs and provider-patient time. Findings showed that resources and costs for HIV care varied significantly throughout Tanzania, including as a function of patient- and facility-level characteristics. While some variation may be preferable (e.g., needier patients received more resources), other areas suggested a lack of equity (e.g., wealthier patients received more provider time) and presented opportunities to optimize care delivery protocols.

LEVEL OF EVIDENCE: Level 1.

Infant male circumcision

1. Palmer, E., et al. **Black women's perceptions towards infant and child male circumcision.** *Matern Child Health J.* 2023;27(8):1370–81.

Online at: <https://link.springer.com/article/10.1007/s10995-023-03693-6>.

OBJECTIVE: The objective of this article was to analyse women's perceptions of ICMC and to propose a framework for ICMC decision-making that can inform ICMC policies.

METHOD: Using qualitative interviews, this study investigated twenty-five Black women's perceptions of ICMC decisionmaking in South Africa. Black women who had opted not to circumcise their sons, were selected through purposive and snowball sampling. Underpinned by the Social Norms Theory, their responses were analysed through in-depth interviews and a

framework analysis. We conducted the study in the townships of Diepsloot and Diepkloof, Gauteng, South Africa.

RESULTS: Three major themes emerged: medical mistrust, inaccurate knowledge leading to myths and misconceptions, and cultural practices related to traditional male circumcision. Building Black women's trust in the public health system is important for ICMC decision-making.

CONCLUSIONS FOR PRACTICE: Policies should address misinformation through platforms that Black women share. There should be an acknowledgement of the role that cultural differences play in the decision-making process. This study developed an ICMC perception framework to inform policy.

Impact and coverage

1. Shapiro, S. B., et al. **Association between male circumcision and human papillomavirus infection in males and females: a systematic review, meta-analysis, and meta-regression (abstract).** *Clin Microbiol Infect.* 2023 Apr 1;S1198–743X(23)00149-0.

Online at: <https://www.ncbi.nlm.nih.gov/pubmed/37011808>.

BACKGROUND: Previous studies have suggested a protective effect of male circumcision on human papillomavirus (HPV) infections in males, and that this protection may be conferred to their female sexual partners.

OBJECTIVES: To synthesize the available evidence on the association between male circumcision and HPV infections in males and females.

DATA SOURCES: We searched MEDLINE, Embase, Scopus, Cochrane, LILACS, and ProQuest Dissertations & Theses Global for records published up to 22 June 2022.

STUDY ELIGIBILITY: We considered observational and experimental studies that assessed male circumcision status and HPV prevalence, incidence, or clearance in males or females for inclusion.

PARTICIPANTS: Males and their female sexual partners who were tested for genital HPV infection.

INTERVENTIONS: Male circumcision compared with no circumcision.

THE RISK-OF-BIAS ASSESSMENT: The Newcastle-Ottawa scale was used for observational studies, and the Cochrane risk-of-bias tool was used for randomized trials.

DATA SYNTHESIS: We estimated summary measures of effect and 95% CIs for the prevalence, incidence, and clearance of HPV infections in males and females using random-effects meta-analysis. We assessed the effect modification of circumcision on HPV prevalence by the penile site in males using random-effects meta-regression.

RESULTS: Across 32 studies, male circumcision was associated with decreased odds of prevalent HPV infections (odds ratio, 0.45; 95% CI, 0.34-0.61), a reduced incidence rate of HPV infections (incidence rate ratio, 0.69; 95% CI, 0.57-0.83), and an increased risk of clearing HPV infections (risk ratio, 1.44; 95% CI, 1.28-1.61) at the glans penis among male subjects. Circumcision conferred greater protection against infection at the glans than the shaft (odds ratio, 0.68; 95% CI, 0.48-0.98). Females with circumcised partners were protected from all outcomes.

CONCLUSIONS: Male circumcision may protect against various HPV infection outcomes, suggesting its prophylactic potential. Understanding the site-specific effects of circumcision on HPV infection prevalence has important implications for studies of HPV transmission.

2. Giddings, R., et al. **Infectious disease modelling of HIV prevention interventions: a systematic review and narrative synthesis of compartmental models.** *Pharmacoeconomics*. 2023;41(6):693–707.

Online at: <https://link.springer.com/article/10.1007/s40273-023-01260-z>.

BACKGROUND: The HIV epidemic remains a major public health problem. Critical to transmission control are HIV prevention strategies with new interventions continuing to be developed. Mathematical models are important for understanding the potential impact of these interventions and supporting policy decisions. This systematic review aims to answer the following question: when a new HIV prevention intervention is being considered or designed, what information regarding it is necessary to include in a compartmental model to provide useful insights to policy makers? The primary objective of this review is therefore to assess suitability of current compartmental HIV prevention models for informing policy development.

METHODS: Articles published in EMBASE, Medline, Econlit, and Global Health were screened. Included studies were identified using permutations of (i) HIV, (ii) pre-exposure prophylaxis (PrEP), circumcision (both voluntary male circumcision [VMMC] and early-infant male circumcision [EIMC]), and vaccination, and (iii) modelling. Data extraction focused on study design, model structure, and intervention incorporation into models. Article quality was assessed using the TRACE (TRANSPARENT and Comprehensive Ecological modelling documentation) criteria for mathematical models.

RESULTS: Of 837 articles screened, 48 articles were included in the review, with 32 unique mathematical models identified. The substantial majority of studies included PrEP (83%), whilst fewer modelled circumcision (54%), and only a few focussed on vaccination (10%). Data evaluation, implementation verification, and model output corroboration were identified as areas of poorer model quality. Parameters commonly included in the mathematical models were intervention uptake and effectiveness, with additional intervention-specific common parameters identified. We identified key modelling gaps; critically, models insufficiently incorporate multiple interventions acting simultaneously. Additionally, population subgroups were generally poorly represented-with future models requiring improved incorporation of ethnicity and sexual risk group stratification-and many models contained inappropriate data in parameterisation which will affect output accuracy.

CONCLUSIONS: This review identified gaps in compartmental models to date and suggests areas of improvement for models focusing on new prevention interventions. Resolution of such gaps

within future models will ensure greater robustness and transparency, and enable more accurate assessment of the impact that new interventions may have, thereby providing more meaningful guidance to policy makers.

3. Gao, Y., et al. **Voluntary medical male circumcision and incident HIV infection among men who have sex with men in China (The CoM Study): protocol for a randomized controlled trial.** *JMIR Res Protoc.* 2023;12:e47160.

Online at: <https://www.researchprotocols.org/2023/1/e47160>.

BACKGROUND: Systematic reviews and meta-analyses based on observational studies have shown voluntary medical male circumcision (VMMC) may reduce HIV risk among men who have sex with men (MSM). There is a lack of randomized controlled trial (RCT) data assessing the efficacy of VMMC.

OBJECTIVE: The primary objective of this study was to assess the efficacy of VMMC for preventing HIV acquisition among MSM who primarily engage in insertive anal sex.

METHODS: A multicenter RCT will be conducted among MSM in 8 cities in China. Eligible participants are men aged 18-49 years who self-report ≥ 2 male sex partners in the past 6 months, predominantly practice insertive anal sex, and are willing to undergo circumcision. Interested men who satisfy inclusion criteria will be tested for HIV 1 month before enrollment and at enrollment, and only those who are HIV negative will be enrolled. At baseline, all enrolled participants will be asked to report sociodemographic characteristics and sexual behaviors; provide a blood sample for HIV, syphilis, and herpes simplex virus type 2 testing; and provide a penile swab for human papillomavirus testing. Participants will be randomly assigned to the intervention or control group. Those in the intervention group will receive VMMC and undergo a web-based weekly follow-up assessment of postsurgery healing for 6 consecutive weeks. All participants will be tested for HIV at 3-, 6-, 9-, and 12-month follow-ups. All participants will also be asked to report sexual behaviors and undergo repeat herpes simplex virus type 2 and human papillomavirus testing at 6- and 12-month follow-ups. The primary end point is HIV seroconversion. Secondary end points are the safety and satisfaction with VMMC and the changes in sexual behaviors after VMMC. The grouped censored data will be analyzed by intention-to-treat approach.

RESULTS: Recruitment for the RCT began in August 2020 and continued through July 2022. Data collection is expected to be completed by July 2023, and full data analysis is going to be completed by September 2023.

CONCLUSIONS: This study will be the first RCT to assess the efficacy of VMMC in preventing HIV infection among MSM. Results from this trial will provide preliminary evidence for the potential efficacy of VMMC to reduce incident HIV infection among MSM.

TRIAL REGISTRATION: Chinese Clinical Trial Registry ChiCTR2000039436; <https://www.chictr.org.cn/showproj.html?proj=63369>.

Safety and quality

1. Feldacker, C., et al. **Expanding the evidence on the safety and efficiency of 2-way text messaging-based telehealth for voluntary medical male circumcision follow-up compared with in-person reviews: randomized controlled trial in rural and urban South Africa.** *J Med Internet Res.* 2023;25: e42111.

Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10206620/>.

BACKGROUND: There is a dearth of high-quality evidence from digital health interventions in routine program settings in low- and middle-income countries. We previously conducted a randomized controlled trial (RCT) in Zimbabwe, demonstrating that 2-way texting (2wT) was safe and effective for follow-up after adult voluntary medical male circumcision (VMMC).

OBJECTIVE: To demonstrate the replicability of 2wT, we conducted a larger RCT in both urban and rural VMMC settings in South Africa to determine whether 2wT improves adverse event (AE) ascertainment and, therefore, the quality of follow-up after VMMC while reducing health care workers' workload.

METHODS: A prospective, unblinded, noninferiority RCT was conducted among adult participants who underwent VMMC with cell phones randomized in a 1:1 ratio between 2wT and control (routine care) in North West and Gauteng provinces. The 2wT participants responded to a daily SMS text message with in-person follow-up only if desired or an AE was suspected. The control group was requested to make in-person visits on postoperative days 2 and 7 as per national VMMC guidelines. All participants were asked to return on postoperative day 14 for study-specific review. Safety (cumulative AEs \leq day 14 visit) and workload (number of in-person follow-up visits) were compared. Differences in cumulative AEs were calculated between groups. Noninferiority was prespecified with a margin of -0.25%. The Manning score method was used to calculate 95% CIs.

RESULTS: The study was conducted between June 7, 2021, and February 21, 2022. In total, 1084 men were enrolled (2wT: n=547, 50.5%, control: n=537, 49.5%), with near-equal proportions of rural and urban participants. Cumulative AEs were identified in 2.3% (95% CI 1.3-4.1) of 2wT participants and 1.0% (95% CI 0.4-2.3) of control participants, demonstrating noninferiority (1-sided 95% CI -0.09 to infinity). Among the 2wT participants, 11 AEs (9 moderate and 2 severe) were identified, compared with 5 AEs (all moderate) among the control participants—a nonsignificant difference in AE rates ($P=.13$). The 2wT participants attended 0.22 visits, and the control participants attended 1.34 visits—a significant reduction in follow-up visit workload ($P<.001$). The 2wT approach reduced unnecessary postoperative visits by 84.8%. Daily response rates ranged from 86% on day 3 to 74% on day 13. Among the 2wT participants, 94% (514/547) responded to ≥ 1 daily SMS text messages over 13 days.

CONCLUSIONS: Across rural and urban contexts in South Africa, 2wT was noninferior to routine in-person visits for AE ascertainment, demonstrating 2wT safety. The 2wT approach also significantly reduced the follow-up visit workload, improving efficiency. These results strongly suggest that 2wT provides quality VMMC follow-up and should be adopted at scale. Adaptation of the 2wT telehealth approach to other acute follow-up care contexts could extend these gains beyond VMMC.

TRIAL REGISTRATION: ClinicalTrials.gov NCT04327271;
<https://www.clinicaltrials.gov/ct2/show/NCT04327271>.

2. White, L. A., et al. **An evaluation of local implementing partner performance during the first 2 years of the USAID/PEPFAR transition.** *Glob Health Sci Pract.* 2023;11(3):e2200337.

Online at: <https://www.ghspjournal.org/content/11/3/e2200337.long>.

INTRODUCTION: Locally led and owned development is considered the best practice for international aid. As an implementing agency for the U.S. President's Emergency Plan for AIDS Relief (PEPFAR), the U.S. Agency for International Development (USAID) supported the goal of transitioning 70% of its portfolio funding directly to local organizations by 2020, including partner country governments. However, limited evidence or evaluation exists on how such a transition can help achieve HIV-related health outcomes.

METHODS: We evaluated monitoring, evaluation, and reporting performance; calculated indicators; and quality of service across the HIV/AIDS treatment cascade for local and international partners in the USAID/PEPFAR portfolio implementing similar programs during the U.S. Government fiscal years (FY) 2019 to 2020 (October 1, 2018-September 30, 2020). We compared results aggregated globally, by country, and across individual partners.

RESULTS: Globally, local partners met a lower proportion of their treatment targets than international partners and did not meet targets for pre-exposure prophylaxis or voluntary medical male circumcision in FY2020. However, local partners exceeded targets in programs supporting orphans, vulnerable children, and key populations affected by HIV/AIDS. Local partners also had testing positivity, linkage rates, and viral load suppression that were equivalent to or higher than that of international partners. Based on available assessments, local partners displayed quality of service delivery comparable to international partners.

CONCLUSION: Local partners faced challenges, including unfamiliarity with USAID funding, increasing targets across several indicators, and the syndemics of HIV/AIDS and COVID-19. A higher percentage of targets and funding led South African local partners to yield an outsized effect on global percent target achievement. While these findings should be interpreted cautiously due to limited sample size and short time horizon, they are a key first step in evaluating the local partner transition support of the long-term goal of sustained epidemic control of HIV/AIDS.

3. Ugwu, J. O., et al. **Post-circumcision urethrocutaneous fistulae: presentations, repairs and outcomes in a tertiary centre.** *Afr J Paediatr Surg.* 2023;20(2):93–96.

Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10209757/>.

BACKGROUND: Circumcision is regarded as the most common surgical procedure world over. It is also perceived to be a simple and safe procedure; however, it could be fraught with major urological complications such as urethrocutaneous fistula (UCF). Repair of these fistulae poses a great reconstructive challenge to the paediatric surgeon/urologist with varied outcomes.

AIM: We seek to review the presentations, repair and outcome of post-circumcision UCFs managed in a tertiary centre.

PATIENTS AND METHODS: This is a retrospective review of all the consecutive cases of repaired post-circumcision UCFs in Nnamdi Azikiwe University Teaching Hospital, Nnewi, South-East Nigeria, over a period of 9 years (January 2012-December 2020). Data on demography, size of fistula, type of repair and outcome were retrieved from the Records Department and patients' case notes and were analysed using SPSS (version 22, Chicago, Illinois).

RESULTS: A total of 22 boys had post-circumcision UCF repair within the period, and they were aged between 2 weeks and 108 months with a median age of 4 months at presentation and aged between 8 months and 144 months with a median age of 24 months at the time of surgery. Circumcisions were by freehand technique in 21 (95.5%). Nurses performed most of the circumcisions in 19 (86.4%), and most of the circumcisions were performed in private hospitals 7 (31.8%), maternity homes 3 (13.6%) and general hospitals in 10 (45.5%) each, respectively. Most 17 (77.3%) fistulae were coronal, and the size of defect ranged from 1 mm to 10 mm. The most commonly employed technique of repair was simple closure in 16 (72.2%). Meatal stenosis and re-fistulation occurred in 2 (9.1%) and 4 (18.2%), respectively. Only two (12.5%) required reoperation. There was no relationship between the size of defect and re-fistulation, $P = 0.377$.

CONCLUSION: Majority of the Post-circumcision urethrocutaneous fistulae were from free hand technique of circumcisions. These were performed mostly by nurses in general, private hospitals and maternity homes. Hence, there is a need to ramp up training of providers of neonatal circumcision in our environment. Most UCF in children could be repaired with simple closure technique reinforced with dartos flap.

4. Jindai, K., et al. **Systematic review: Safety of surgical male circumcision in context of HIV prevention public health programmes.** *Gates Open Res.* 2022;6:164.

Online at: <https://gatesopenresearch.org/articles/6-164/v2>.

BACKGROUND: Since the recommendation of voluntary medical male circumcision (VMMC) to reduce the risk of heterosexually acquired HIV, a number of adolescent boys and men in 15 priority countries in Africa have been circumcised. Our primary goal was to identify the incidence of adverse events (AEs) associated with VMMC and to assess the safety profile among adolescent boys 10 - 14 years.

METHODS: We searched the databases MEDLINE and Embase, WHO, and conference abstracts from 2005 to 2019. The incidence of AEs was estimated by type of AE, size of study and age.

RESULTS: We retained 40 studies. Severe and moderate AEs overall were estimated at 0.30 per 100 VMMC clients with wide variability per study type. A higher rate was noted in small and moderate scale programmes and device method research studies compared with larger scale programmes. There was a limited number of studies reporting AEs among younger adolescent boys and they had higher infection-related AEs than those aged 20 years and older. Case studies noted rare AEs such as necrotizing fasciitis, tetanus, and glans injury.

CONCLUSIONS: As VMMC services are sustained, patient safety surveillance systems and promoting a patient safety culture are crucial to identify and mitigate potential harms from medical male circumcision.

Sociobehavioural research

1. Sun, Y., et al. **Barriers and facilitators to, and experience of, voluntary medical male circumcision among men who have sex with men in China: a mixed-methods study (abstract).** *Arch Sex Behav.* 2023;52(5):2065–81.

Online at: <https://www.ncbi.nlm.nih.gov/pubmed/37296334>.

Voluntary medical male circumcision (VMMC) may be incorporated into HIV prevention services for men who have sex with men (MSM). We conducted a mixed-methods study to elucidate barriers and facilitators to, and experience of, VMMC among MSM. Participants were MSM aged 18 years and older who were enrolled in an ongoing multicenter randomized controlled trial (RCT) to evaluate VMMC to prevent HIV among MSM in China. RCT participants completed a questionnaire before and after VMMC to assess perceptions of and complications after the procedure. A subset of RCT participants were selected for in-depth interviews. Interviewees answered open-ended questions about barriers and facilitators to and experience of undergoing VMMC. Six-step thematic analysis incorporating inductive and deductive approaches was used to interpret interview responses. A total of 457 MSM completed the pre-VMMC survey, 115 circumcised MSM completed post-VMMC surveys, and 30 MSM completed an interview. Main barriers to VMMC uptake were concerns about pain, length of wound healing, cost, lack of knowledge about or misconceptions of VMMC, and stigma related to surgery. Facilitators to VMMC could be categorized as internal factors (foreskin) and external factors (motivation and follow-up care). Interestingly, the VMMC experiences of others could be transformed from a barrier into a facilitator to VMMC in some circumstances. After VMMC participants transitioned from a negative state of pain, remorse, difficulty sleeping, and discomfort to a positive state of symptom alleviation and personal hygiene improvement. Optimizing facilitators and addressing barriers may encourage VMMC among MSM. Joint efforts should be made by relevant stakeholders to improve the awareness and uptake of VMMC among MSM.

2. Bernaschina-Rivera, S. A., et al. **Circumcision and sexual medicine (abstract).** *Sex Med Rev.* 2023 Apr 21;qead009. doi:10.1093/sxmrev/qead009. Online ahead of print.

Online at: <https://academic.oup.com/smr/advance-article-abstract/doi/10.1093/sxmrev/qead009/7135857?redirectedFrom=fulltext&login=false>.

INTRODUCTION: Male circumcision is one of the most frequently performed and debated urological procedures due to its possible implications for sexual health.

OBJECTIVES: The objective of this article is to review the literature on male circumcision and reconcile the scientific evidence to improve the quality of care, patient education, and clinician decision-making regarding the effects on sexual function of this procedure.

METHODS: A review of the published literature regarding male circumcision was performed on PubMed. The criteria for selecting resources prioritized systematic reviews and cohort studies pertinent to sexual dysfunction, with a preference for recent publications.

RESULTS: Despite the conflicting data reported in articles, the weight of the scientific evidence suggests there is not sufficient data to establish a direct association between male circumcision and sexual dysfunction.

CONCLUSION: This review provides clinicians with an updated summary of the best available evidence on male circumcision and sexual dysfunction for evidenced-based quality of care and patient education.

3. Ashipala, D. O., et al. **Facilitators and barriers to voluntary medical male circumcision as an HIV prevention strategy in Kavango East, Namibia.** *S Afr Fam Pract* (2004). 2023;65(1):e1–e9.

Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10244934/>.

BACKGROUND: Voluntary medical male circumcision (VMMC) is a strategy used to try to limit new human immunodeficiency virus (HIV) infections, as it has the potential to reduce HIV and/or AIDS transmission from women to men by up to 60%. However, in spite of efforts by the Ministry of Health and Social Services, only a few men in Namibia have been circumcised. The objective of this study was to explore and describe the facilitators of, and barriers to, medical male circumcision for HIV prevention in Kavango East, Namibia.

METHODS: A qualitative, explorative, descriptive and contextual design was employed. The accessible population in this study comprised 18 health professionals who were selected for the study using a purposive sampling technique.

RESULTS: Participants reported numerous barriers to VMMC in Namibia. Barriers to VMMC included 'myths' and misconceptions attached to VMMC, age limitations, fear of pain and stigma associated with HIV, small VMMC team and long distances from health facilities. Facilitators to VMMC included family support, having experienced genital sores and genital warts or phimosis and paraphimosis.

CONCLUSION: The study revealed that a number of barriers must be overcome before VMMC before the desired number of men take advantage of VMMC. Multiple factors act as constraints to VMMC, including fear, myths and misconceptions, small VMMC teams and the long distance between clients' homes and VMMC services.

CONTRIBUTION: The study's findings can be used to develop targeted interventions and strategies that can be used by VMMC providers to address the identified barriers.

4. Perkins, J. M., et al. **Perceived norms about male circumcision and personal circumcision status: a cross-sectional, population-based study in rural Uganda.** *medRxiv* 2023 Apr 26;2023.04.24.23288996. doi: 10.1101/2023.04.24.23288996. Preprint.

Online at: <https://www.medrxiv.org/content/10.1101/2023.04.24.23288996v1.full-text>.

INTRODUCTION: Over the past decade, 15 high-priority countries in eastern and southern Africa have promoted voluntary medical male circumcision for HIV and STI prevention. Despite male circumcision prevalence in Uganda nearly doubling from 26% in 2011 to 43% in 2016, it

remained below the target level by 2020. Little is known about perceived norms of male circumcision and their association with circumcision uptake among men.

METHODS: We conducted a cross-sectional study targeting all adult residents across eight villages in Rwampara District, southwestern Uganda in 2020-2022. We compared what men and women reported as the adult male circumcision prevalence within their village (perceived norm: >50% (most), 10% to <50% (some), <10%, (few), or do not know) to the aggregated prevalence of circumcision as reported by men aged <50 years. We used a modified multivariable Poisson regression model to estimate the association between perceived norms about male circumcision uptake and personal circumcision status among men.

RESULTS: Overall, 167 (38%) men < 50 years old were circumcised (and 27% of all men were circumcised). Among all 1566 participants (91% response rate), 189 (27%) men and 177 (20%) women underestimated the male circumcision prevalence, thinking that few men in their own village had been circumcised. Additionally, 10% of men and 25% of women reported not knowing the prevalence. Men who underestimated the prevalence were less likely to be circumcised (aRR = 0.51, 95% CI 0.37 to 0.83) compared to those who thought that some village men were circumcised, adjusting for perceived personal risk of HIV, whether any same-household women thought most men were circumcised, and other sociodemographic factors.

CONCLUSIONS: Across eight villages, a quarter of the population underestimated the local prevalence of male circumcision. Men who underestimated circumcision uptake were less likely to be circumcised. Future research should evaluate norms-based approaches to promoting male circumcision uptake. Strategies may include disseminating messages about the increasing prevalence of adult male circumcision uptake in Uganda and providing personalized normative feedback to men who underestimated local rates about how uptake is greater than they thought.

Traditional male circumcision

1. Asa, G. A., et al. **Traditional male circumcision and the risk for HIV transmission among men: a systematic review.** *BMJ Open.* 2023;13(5):e072118.

Online at: <https://bmjopen.bmj.com/content/13/5/e072118.long>.

OBJECTIVES: To synthesise evidence to determine whether, in contrast to medical male circumcision, traditional male circumcision (TMC) practices may contribute to HIV transmission and what the impacts of TMC are on the initiates, their families and societies.

DESIGN: Systematic review.

DATA SOURCE: PubMed, CINAHL, SCOPUS, ProQuest, Cochrane database and Medline were searched between 15 and 30 October 2022.

ELIGIBILITY CRITERIA: (1) Studies involving young men, young male adults, male adults and mixed male and female participants; (2) studies on TMC involving men living with HIV (married and non-married); (3) studies on TMC, HIV transmission and impact in low-income and middle-income countries; (4) qualitative, quantitative and mixed-method studies and (5) studies aimed

at exploring TMC and how it contributes to HIV transmission and the impacts of HIV on circumcised men and their families.

DATA EXTRACTION: Data were extracted based on study details, study design, characteristics of participants and results.

RESULT: A total of 18 studies were included: 11 were qualitative studies, five were quantitative studies and two were mixed-method studies. All the studies included were conducted in areas where TMC was performed (17 in Africa and one in Papua New Guinea). The review's findings were categorised into themes: TMC as a cultural practice, consequences of not being traditionally circumcised on men and their families and TMC-related risk of HIV transmission.

CONCLUSION: This systematic review highlights that TMC practice and HIV risk could negatively impact men and their families. Existing evidence suggests that little attention has been paid to men and their families experiencing the impacts of TMC and HIV risk factors. The findings recommend the need for health intervention programmes such as safe circumcision and safe sexual behaviours following TMC and efforts to address psychological and social challenges in communities practising TMC.

PROSPERO REGISTRATION NUMBER: CRD42022357788.

INTERNATIONAL REGISTERED REPORT IDENTIFIER (IRRID): DERR1-10.2196/47160.

VMMC – general

1. Zulu, J. M., et al. **Community engagement for the Voluntary Medical Male Circumcision (VMMC) program: an analysis of key stakeholder roles to promote a sustainable program in Zambia.** *Gates Open Res.* 2022;6:50.

Online at: <https://gatesopenresearch.org/articles/6-50/v2>.

BACKGROUND: Within the Voluntary Medical Male Circumcision (VMMC) programme, community engagement has been central in facilitating the acceptance of VMMC, especially in non-circumcising communities. We used the case of the development of community engagement plans for sustainability of VMMC in Zambia to illustrate diversity of stakeholders, their power, roles, and strategies in community engagement.

METHODS: Data were collected using document review, in-depth interviews (n=35) and focus group discussions (n=35) with community stakeholders, health workers, health centre committees, counsellors, teachers, community volunteers and parents/caregivers. Data were analysed using thematic analysis. The analysis was guided by the power and interest model.

RESULTS: Differences were noted between the rural and urban sites in terms of power/influence and interest rating of community stakeholders who could be involved in the sustainability phase of the VMMC response in Zambia. For example, in the urban setting, neighbourhood health committees (NHCs), health workers, leaders of clubs, community health workers (CHWs), radio, television and social media platforms were ranked highest. From this list, social media and television platforms were not highly ranked in rural areas. Some stakeholders had more sources

of power than others. Forms or sources of power included technical expertise, local authority, financial resources, collective action (action through schools, churches, media platforms, other community spaces), and relational power. Key roles and strategies included strengthening and broadening local coordination systems, enhancing community involvement, promoting community-led monitoring and evaluation, through the use of locally recognised communication spaces and channels, facilitating ownership of VMMC, and improving local accountability processes in VMMC activities.

CONCLUSIONS: By consulting with the most relevant stakeholders, and considering community needs in programme development, the VMMC programme may be able to leverage the community structures and systems to reduce long term demand generation costs for VMMC and increase the acceptability and frequency of male circumcision.