

Quarterly Research Digest on Voluntary Medical Male Circumcision for HIV Prevention

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1. Velloza, J., et al. **Comprehensive HIV risk reduction interventions for 2020 and beyond: product choices and effective service-delivery platforms for individual needs and population-level impact.** *Curr Opin HIV AIDS* 2019 June 28. [Epub ahead of print]

PURPOSE OF REVIEW: This review summarizes key HIV prevention strategies in the 2020 toolkit and discusses opportunities to maximize the public health impact of these prevention interventions at a population level.

RECENT FINDINGS: HIV prevention has relied on counseling, HIV testing, and condom distribution for the past three decades. Recent exciting work has provided evidence on effective HIV prevention interventions, including antiretroviral therapy for HIV prevention, expanding preexposure prophylaxis modalities, and voluntary medical male circumcision which all reduce individual-level HIV risk. Efficient service-delivery approaches are necessary to deliver these products at scale while addressing population-specific needs. These approaches include: making it easier to get individuals HIV tested and linked to prevention services; de-medicalization to increase access to prevention products; creating welcoming clinic service-delivery environments; and integrating HIV prevention products into existing clinical platforms to support ongoing care engagement.

SUMMARY: The 2020 HIV prevention toolkit includes powerful HIV prevention options, and product choice will be increasingly imperative. Meeting ambitious global HIV reduction targets in the next decade will require improved service-delivery platforms to get prevention choices to persons at risk while layering prevention coverage to achieve population-level impact.

2. Heffron, R., et al. **Implementation of a comprehensive safer conception intervention for HIV-serodiscordant couples in Kenya: uptake, use and effectiveness.** *J Int AIDS Soc* 2019;22(4): e25261.

Online at: <https://onlinelibrary.wiley.com/doi/full/10.1002/jia2.25261>

INTRODUCTION: Safer conception strategies minimize HIV risk during condomless sex to become pregnant. Gaps remain in understanding the acceptability, feasibility and choices HIV-serodiscordant couples make when multiple safer conception options are available.

METHODS: We conducted a pilot study of a comprehensive safer conception package for HIV-serodiscordant couples with immediate fertility desires in Kenya from March 2016 to April 2018. The intervention package included antiretroviral therapy (ART) for HIV-positive partners, oral pre-exposure prophylaxis (PrEP) for HIV-negative partners, daily fertility and sexual behaviour tracking via short message service (SMS) surveys, counselling on self-insemination, and referrals for voluntary medical male circumcision and fertility care. Couples attended monthly visits until pregnancy with HIV testing for negative partners at each visit. We estimated the number of expected HIV seroconversions using a counterfactual cohort simulated from gender-matched couples in the placebo arm of a previous PrEP clinical trial. We used bootstrap methods to compare expected and observed seroconversions.

RESULTS: Of the 74 enrolled couples, 54% were HIV-negative female/HIV-positive male couples. The 6 and 12-month cumulative pregnancy rates were 45.3% and 61.9% respectively. In the month preceding pregnancy, 80.9% of HIV-positive partners were virally suppressed, 81.4% of HIV-negative partners were highly adherent to PrEP, and SMS surveys indicated potential timing of condomless sex to peak fertility (median of sex acts = 10, interquartile range (IQR) 7 to 12; median condomless sex acts = 3.5, IQR 1 to 7). Most (95.7%) pregnancies were protected by ≥ 2 strategies: 57.4% were protected by high PrEP and ART adherence, male circumcision with or without timed condomless sex; 10 (21.3%) were protected by viral suppression in the HIV-positive partner and male circumcision with or without timed condomless sex; 8 (17.0%) were protected by high PrEP adherence and male circumcision with or without timed condomless sex. We observed 0 HIV seroconversions (95% CI 0.0 to 6.0 per 100 person years), indicating a 100% reduction in HIV risk ($p = 0.04$).

CONCLUSIONS: The use of multiple safer conception strategies, primarily PrEP, ART, male circumcision and/or tracking fertility, was acceptable and feasible for African HIV-serodiscordant couples and significantly reduced HIV transmission risk. It is important to increase the availability of and counselling about safer conception services in regions with HIV epidemics involving heterosexual transmission and high fertility.

Costs and costing

1. Sarkar, S., et al. **Cost-effectiveness of HIV prevention interventions in Sub-Saharan Africa: a systematic review.** *EClinicalMedicine* 2019;10: 10-31.

Online at:

<https://www.sciencedirect.com/science/article/pii/S2589537019300677?via%3Dihub>

BACKGROUND: Sub-Saharan Africa carries the highest HIV burden globally. It is important to understand how interventions cost-effectively fit within guidelines and implementation plans, especially in low- and middle-income settings. We reviewed the evidence from economic evaluations of HIV prevention interventions in sub-Saharan Africa to help inform the allocation of limited resources.

METHODS: We searched PubMed, Web of Science, Econ-Lit, Embase, and African Index Medicus. We included studies published between January 2009 and December 2018 reporting cost-effectiveness estimates of HIV prevention interventions. We extracted health outcomes and cost-effectiveness ratios (CERs) and evaluated study quality using the CHEERS checklist.

FINDINGS: 60 studies met the full inclusion criteria. Prevention of mother-to-child transmission interventions had the lowest median CERs (\$1144/HIV infection averted and \$191/DALY averted), while pre-exposure prophylaxis interventions had the highest (\$13,267/HIA and \$799/DALY averted). Structural interventions (partner notification, cash transfer programs) have similar CERs (\$3576/HIA and \$392/DALY averted) to male circumcision (\$2965/HIA) and were more favourable to treatment-as-prevention interventions (\$7903/HIA and \$890/DALY averted). Most interventions showed increased cost-effectiveness when prioritizing specific target groups based on age and risk.

INTERPRETATION: The presented cost-effectiveness information can aid policy makers and other stakeholders as they develop guidelines and programming for HIV prevention plans in resource-constrained settings.

2. Glaubius, R., et al. **Dapivirine vaginal ring for HIV prevention: modelling health outcomes, drug resistance and cost-effectiveness.** *J Int AIDS Soc* 2019;22(5): e25282.

Online at: <https://onlinelibrary.wiley.com/doi/full/10.1002/jia2.25282>

INTRODUCTION: A vaginal ring containing dapivirine is effective for HIV prevention as pre-exposure prophylaxis (PrEP). We evaluated the potential epidemiological impact and cost-effectiveness of dapivirine vaginal ring PrEP among 22- to 45-year-old women in KwaZulu-Natal, South Africa.

METHODS: Using mathematical modelling, we studied dapivirine vaginal ring PrEP implementation, either unprioritized, or prioritized based on HIV incidence ($\geq 3\%$ per year), age (22 to 29 years) or female sex worker status, alongside the implementation of

voluntary medical male circumcision and antiretroviral therapy scaled-up to UNAIDS Fast-Track targets. Outcomes over the intervention (2019 to 2030) and lifetime horizons included cumulative HIV infections, life-years lived, costs and cost-effectiveness. We assessed the incremental cost-effectiveness ratios against the revealed willingness to pay (\$500) and the standard (2017 per capita gross domestic product; \$6161) cost-effectiveness thresholds for South Africa.

RESULTS: Compared to a reference scenario without PrEP, implementation of dapivirine vaginal ring PrEP, assuming 56% effectiveness and covering 50% of 22 to 29-year-old or high-incidence women, prevented 10% or 11% of infections by 2030 respectively. Equivalent, unprioritized coverage (30%) prevented fewer infections (7%), whereas 50% coverage of female sex workers had the least impact (4%). Drug resistance attributable to PrEP was modest (2% to 4% of people living with drug-resistant HIV). Over the lifetime horizon, dapivirine PrEP implementation among female sex workers was cost-saving, whereas incidence-based PrEP cost \$1898 per life-year gained, relative to PrEP among female sex workers and \$989 versus the reference scenario. In a scenario of 37% PrEP effectiveness, PrEP had less impact, but prioritization to female sex workers remained cost-saving. In uncertainty analysis, female sex worker PrEP was consistently cost-saving; and over the lifetime horizon, PrEP cost less than \$6161 per life-year gained in over 99% of simulations, whereas incidence- and age-based PrEP cost below \$500 per life-year gained in 61% and 49% of simulations respectively. PrEP adherence and efficacy, and the effectiveness of antiretroviral therapy for HIV prevention, were the principal drivers of uncertainty in the cost-effectiveness of PrEP.

Enhancing uptake of VMMC

1. Rodriguez, V. J., et al. **Identifying factors associated with successful implementation and uptake of an evidence-based voluntary medical male circumcision program in Zambia: the Spear and Shield 2 Program.** *Transl Behav Med* 2019 May 16. pii: ibz048. [Epub ahead of print]

Voluntary medical male circumcision has been shown to provide a 50%-70% reduction in the risk of HIV infection without contributing to behavioral disinhibition of safer sexual practices. This study examined the interim implementation and dissemination data of Spear and Shield 2, an HIV risk-reduction program in Zambia. The purpose of this interim review was to identify contextual challenges to implementation and implement midcourse corrections associated with sustainability of program delivery. Using a mixed-methods design, quantitative evaluations of organizational functioning, barriers to implementation, burnout, and organizational readiness, as well as qualitative data utilizing the Consolidated Framework for Implementation Research (CFIR), were examined to evaluate program implementation. Participants were 184 health care providers from 46 clinics in Zambia. Successful implementation was associated with

better community and leader support, and employee readiness and motivation. Quantitative assessments were not related to implementation and provided a limited picture of implementation outcomes. Results suggest that the qualitative data underlying the CFIR constructs provided a nuanced, contextual assessment of implementation, and dissemination outcomes. The CFIR may be valuable in informing the implementation of evidence-based interventions in other parts of Zambia.

2. Ong, J. J., et al. **Use of lotteries for the promotion of voluntary medical male circumcision service: a discrete-choice experiment among adult men in Tanzania.** *Med Decis Making* 2019 Jun 10: 272989X19852095. [Epub ahead of print]

Voluntary medical male circumcision (VMMC) is effective in reducing the risk of human immunodeficiency virus (HIV). However, countries like Tanzania have high HIV prevalence but low uptake of VMMC. We conducted a discrete-choice experiment to evaluate the preferences for VMMC service attributes in a random sample of 325 men aged 18 years or older from the general population in 2 Tanzanian districts, Njombe and Tabora. We examined the preference for financial incentives in the form of a lottery ticket or receiving a guaranteed transport voucher for attendance at a VMMC service. We created a random-parameters logit model to account for individual preference heterogeneity and a latent class analysis model for identifying groups of men with similar preferences to test the hypothesis that men who reported sexually risky behaviors (i.e., multiple partners and any condomless sex in the past 12 months) may have a preference for participation in a lottery-based incentive. Most men preferred a transport voucher (84%) over a lottery ticket. We also found that offering a lottery-based financial incentive may not differentially attract those with greater sexual risk. Our study highlights the importance of gathering local data to understand preference heterogeneity, particularly regarding assumptions around risk behaviors.

Epidemiological studies

1. Pintye, J., et al. **Benefits of male circumcision for MSM: evidence for action.** *Lancet Glob Health* 2019;7(4): e388-e389.
Online at: [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(19\)30038-5/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(19)30038-5/fulltext)

Some previous reviews have concluded that a randomised clinical trial might be needed to answer definitively whether voluntary medical male circumcision prevents HIV acquisition among MSM. We argue that the global HIV prevention response for MSM, particularly in countries of low and middle income, is already belated and needs rapid sustained commitment and action. These new data should extinguish concerns that the benefits of voluntary medical male circumcision for MSM are too ambiguous to drive

programmatic action. The option for voluntary medical male circumcision should be a part of robust prevention services for MSM, along with high-quality HIV testing, antiretroviral therapy and pre-exposure prophylaxis, STI screening and treatment, counselling about prevention options, and provision of condoms and lubricant.

2. Yuan, T., et al. **Circumcision to prevent HIV and other sexually transmitted infections in men who have sex with men: a systematic review and meta-analysis of global data.** *Lancet Glob Health* 2019;7(4): e436-e447.
Online at: [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(18\)30567-9/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(18)30567-9/fulltext).

BACKGROUND: Men who have sex with men (MSM) are disproportionately affected by HIV and other sexually transmitted infections (STIs) worldwide. Previous reviews investigating the role of circumcision in preventing HIV and other STIs among MSM were inconclusive. Many new studies have emerged in the past decade. To inform global prevention strategies for HIV and other STIs among MSM, we reviewed all available evidence on the associations between circumcision and HIV and other STIs among MSM.

METHODS: In this systematic review and meta-analysis, we searched PubMed, Web of Science, BioMed Central, Scopus, ResearchGate, Cochrane Library, Embase, PsycINFO, Google Scholar, and websites of international HIV and STI conferences for studies published before March 8, 2018. Interventional or observational studies containing original quantitative data describing associations between circumcision and incident or prevalent infection of HIV and other STIs among MSM were included. Studies were excluded if MSM could not be distinguished from men who have sex with women only. We calculated pooled odds ratios (ORs) and their 95% CIs using random-effect models. We assessed risk of bias using the Newcastle-Ottawa scale.

FINDINGS: We identified 62 observational studies including 119 248 MSM. Circumcision was associated with 23% reduced odds of HIV infection among MSM overall (OR 0.77, 95% CI 0.67-0.89; number of estimates [k]=45; heterogeneity I(2)=77%). Circumcision was protective against HIV infection among MSM in countries of low and middle income (0.58, 0.41-0.83; k=23; I(2)=77%) but not among MSM in high-income countries (0.99, 0.90-1.09; k=20; I(2)=40%). Circumcision was associated with reduced odds of herpes simplex virus (HSV) infection among MSM overall (0.84, 0.75-0.95; k=5; I(2)=0%) and penile human papillomavirus (HPV) infection among HIV-infected MSM (0.71, 0.51-0.99; k=3; I(2)=0%).

INTERPRETATION: We found evidence that circumcision is likely to protect MSM from HIV infection, particularly in countries of low and middle income. Circumcision might also protect MSM from HSV and penile HPV infection. MSM should be included in campaigns promoting circumcision among men in countries of low and middle income. In view of the substantial proportion of MSM in countries of low and middle income

who also have sex with women, well designed longitudinal studies differentiating MSM only and bisexual men are needed to clarify the effect of circumcision on male-to-male transmission of HIV and other STIs.

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3. Shi, C., et al. **Traditional male circumcision is associated with sexual risk behaviors in sub-Saharan countries prioritized for male circumcision.** *AIDS Behav* 2019 Apr 6. [Epub ahead of print]

To understand the sexual risk behavior of men with traditional male circumcision and medical male circumcision in the context of the World Health Organization's (WHO) campaign for voluntary medical male circumcision (VMMC) scale-up, we investigated ten countries prioritized for the scale-up from the Demographic and Health Surveys. Male respondents aged 15-49 were selected. Ordinal regression was used to analyze the relationship between three sexual risk behaviors-condom use with non-cohabiting partners, number of non-cohabiting partners, and partner type-and circumcision status (traditionally circumcised before and after the VMMC scale-up, medically circumcised before and after the scale-up, and not circumcised), while controlling for social demographic covariates. We found evidence that some sexual risky behavior, specifically lower condom use and higher number of sexual partners, was associated with traditional circumcision. This finding suggests that messages about the protective effect of male circumcision may not have reached men with traditional circumcision. We suggest that WHO's VMMC campaign should include communities where traditional male circumcision is popular. We looked for, but did not find, evidence of differences between groups circumcised at different times, which could have indicated sexual risk compensation.

Impact and coverage

1. Stegman, P., et al. **Voluntary medical male circumcision to prevent HIV: modelling age prioritization in Namibia.** *AIDS Behav* 2019 Jun 18. [Epub ahead of print]
Online at: <https://link.springer.com/article/10.1007%2Fs10461-019-02556-y>

Voluntary Medical Male circumcision (VMMC) has been part of prevention in Namibia since 2009. Yet, as of 2013, VMMC coverage among 15- to 24-year-olds was estimated at less than 22%. Program data suggests uptake of VMMC below age 15 is lower than expected, given the age distribution of the eligible population. Nearly 85% of VMMCs were for males between ages 15 and 29, while boys 10-14 years were referred outside

the program. This analysis uses the Decision Makers Program Planning Tool to understand the impact of age prioritization on circumcision in Namibia. Results indicate that circumcising males aged 20-29 reduced HIV incidence most rapidly, while focusing on ages 15-24 was more cost effective and produced greater magnitude of impact. Providing services to those under 15 could increase VMMC volume 67% while introducing Early Infant Medical Circumcision could expand coverage. This exercise supported a review of VMMC strategies and implementation, with Namibia increasing coverage among 10- to 14-year-olds nearly 20 times from 2016 to 2017.

Safety and quality

1. Gyan, T., et al. **Health service provider education and/or training in infant male circumcision to improve short- and long-term morbidity outcomes: A systematic review.** *J Paediatr Child Health* 2019 Jun 10. [Epub ahead of print]

AIM: To systematically review the effectiveness of education and/or training for traditional (informal) and formal health service providers in infant male circumcision on morbidity or mortality outcomes.

METHODS: We searched Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, CINAHL, Global Health, Cochrane Database of Systematic Reviews and Database of Abstracts of Reviews of Effects and clinical trial registries in all languages from January 1985 to June 2018. Our primary outcomes were all-cause morbidity and all-cause mortality.

RESULTS: We identified 1399 publications. Only four non-controlled before and after studies from the USA and Uganda satisfied our criteria, all of which examined the effect of training on the skills and knowledge of medical doctors, midwives and clinical officers. No study involved informal traditional circumcision providers. All included studies were low quality.

CONCLUSIONS: High-quality studies of simple training packages to improve education and training of circumcision providers, especially informal non-medical providers in low income countries are needed.

2. Marongwe, P., et al. **Trust but verify: Is there a role for active surveillance in monitoring adverse events in Zimbabwe's large-scale male circumcision program?** *PLoS One* 2019;14(6): e0218137.

Online at: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0218137>

INTRODUCTION: Ensuring quality service provision is fundamental to ZAZIC's voluntary medical male circumcision (MC) program in Zimbabwe. From October, 2014 to September, 2017, ZAZIC conducted 205,847 MCs. Passive surveillance recorded a combined moderate and severe adverse event (AE) rate of 0.3%; reported adherence to

follow-up was 95%, suggesting program safety. Despite encouraging passive surveillance data, verification of data quality and accuracy would increase confidence in AE identification.

METHODS: From May to August, 2017, ZAZIC implemented a focused quality assurance (QA) study on AE ascertainment and documentation at 6 purposively-selected, high-volume MC sites. ZAZIC Gold-Standard (GS) clinicians prospectively observed 100 post-MC follow-ups per site in tandem with facility-based MC providers to confirm and characterize AEs, providing mentoring in AE management when needed. GS clinicians also retrospectively reviewed site-based, routine MC data, comparing recorded to reported AEs, and held brief qualitative interviews with site leadership on AE-related issues.

RESULTS: Observed AE rates varied from 1-8%, potentially translating to thousands of unidentified AEs if observed AE rates were applied to previous MC performance. Most observed AEs were infections among younger clients. Retrospective review found discrepancies in AE documentation and reporting. Interviews suggest human resource and transport issues challenge MC follow-up visit attendance. Post-operative self-care appears to produce generally good results for adults; however, younger clients and guardians need additional attention to ensure quality care. There was no evidence of missed severe AEs resulting in permanent impairment or morbidity.

CONCLUSIONS: Although results cannot be generalized, active surveillance suggests that AEs may be higher and follow-up lower than reported. In response, ZAZIC's Quality Assurance Task Force will replicate this QA study in other sites; increase training in AE identification, management, and documentation for clinical and data teams; and improve post-operative counseling for younger clients. Additional nurses and vehicles, especially in rural health clinics, could be beneficial.

Social and behavioural research

1. Grund, J. M., et al. **Association of male circumcision with women's knowledge of its biomedical effects and with their sexual satisfaction and function: a systematic review.** *AIDS Behav* 2019;23(5): 1104-1114.
Online at: <https://link.springer.com/article/10.1007%2Fs10461-018-2313-0>

Male circumcision (MC) is a key HIV prevention intervention for men in countries with high HIV prevalence. Women's understanding of MC is important but poorly understood. We conducted a systematic review including women's knowledge of MC's biomedical impacts and its association with female sexual satisfaction and function through October 2017. Thirty-eight articles were identified: thirty-two with knowledge outcomes, seven with sexual satisfaction, and four with sexual function (N = 38). Respondent proportions aware MC protects men from HIV were 9.84-91.8% (median 60.0%). Proportions aware

MC protects men from STIs were 14.3-100% (72.6%). Proportions aware MC partially protects men from HIV were 37.5-82% (50.7%). Proportions aware MC is not proven to protect women from infection by an HIV-positive partner were 90.0-96.8% (93.0%). No increases over time were noted. Women's MC knowledge is variable. Education could help women support MC and make better-informed sexual decisions.

2. Speers, L.P., et al. **Immediate motivators to seeking voluntary medical male circumcision among HIV-negative adult men in an urban setting in Botswana.** *AIDS Educ Prev* 2019;31(2): 136-151.

Randomized trials have shown that voluntary medical male circumcision (VMMC) significantly reduces HIV acquisition risk in men. We sought to identify subpopulations of Botswanan men with high levels of VMMC uptake by comparing an observational cohort of men presenting for circumcision services at two high-volume clinics in Botswana's capital city, Gaborone, with a matched, population-based random sample of uncircumcised men. Among these high uptake VMMC subpopulations, we then examined the immediate factors that play a role in men's decision to seek VMMC services. As compared to their population-based controls, men choosing to undergo circumcision were more likely to be ages 24-34, more highly educated, to have a religious affiliation, and in a serious relationship. Our results suggest that married men and highly educated men were more likely to pursue circumcision for personal hygiene reasons. These findings have direct implications for targeted demand creation and mobilization activities to increase VMMC uptake in Botswana.

3. Mangombe, K., et al. **Knowledge about male circumcision and perception of risk for HIV among youth in Harare, Zimbabwe.** *South Afr J HIV Med* 2019;20(1): 855.

Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6556916/>

BACKGROUND: Male circumcision will require high uptake among previously non-circumcising countries to realise the impact of circumcising in preventing HIV. Little is known about whether youths are knowledgeable about male circumcision and its relationship with HIV prevention and their perception of risk of HIV infection.

OBJECTIVE: This article aimed to ascertain youth's knowledge about male circumcision and perception of risk of HIV infection.

METHODS: A quantitative study on 784 youth (men aged 15-35 years) was conducted in Harare, Zimbabwe, after obtaining their consent. Multivariate analysis examined the associations between background characteristics and knowledge about male circumcision and the perception of risk of HIV infection.

RESULTS: The results revealed that age was a significant predictor of knowledge about male circumcision among youth in Harare, as was educational attainment and ever having tested for HIV. In addition, youth who had heard of voluntary medical male

circumcision were more likely to have high knowledge of male circumcision compared to those who had never heard of it. The results also showed that male circumcision status was associated with higher knowledge about male circumcision compared to those who were not circumcised. The study also found that educational attainment, belonging to the Shona ethnic group, never having tested for HIV and disapproval of voluntary counselling and testing prior to male circumcision were associated with the perception of risk of HIV infection.

CONCLUSION: The study provides two recommendations: the need to strengthen perceived susceptibility to HIV among the youth and the need for advocacy on the health benefits of male circumcision.

4. Morris, B. J., et al. **Sex and male circumcision: women's preferences across different cultures and countries: a systematic review.** *Sex Med* 2019;7(2): 145-161.

Online at: [https://www.smoa.jsexmed.org/article/S2050-1161\(19\)30031-5/fulltext](https://www.smoa.jsexmed.org/article/S2050-1161(19)30031-5/fulltext)

INTRODUCTION: Women's choices for a sexual partner are influenced by numerous personal, cultural, social, political and religious factors, and may also include aspects of penile anatomy such as male circumcision (MC) status.

AIM: To perform a systematic review examining (i) whether MC status influences women's preference for sexual activity and the reasons for this, and (ii) whether women prefer MC for their sons.

METHODS: PRISMA-compliant searches were conducted of PubMed, Google Scholar, Embase, and the Cochrane Database of Systematic Reviews. Articles that met the inclusion criteria were rated for quality using the SIGN system.

RESULTS: Database searches identified 29 publications with original data for inclusion, including 22 for aim (i) and 4 of these and 7 others pertaining to aim (ii). In the overwhelming majority of studies, women expressed a preference for the circumcised penis. The main reasons given for this preference were better appearance, better hygiene, reduced risk of infection, and enhanced sexual activity, including vaginal intercourse, manual stimulation, and fellatio. In studies that assessed mothers' preference for MC of sons, health, disease prevention, and hygiene were cited as major reasons for this preference. Cultural differences in preference were evident among some of the studies examined. Nevertheless, a preference for a circumcised penis was seen in most populations regardless of the frequency of MC in the study setting.

CONCLUSION: Women's preferences generally favor the circumcised penis for sexual activity, hygiene, and lower risk of infection. The findings add to the already well-established health benefits favoring MC and provide important sociosexual information on an issue of widespread interest.

5. Mndzebele, S., et al. **Sexual behaviours, awareness and perceptions towards voluntary medical male circumcision among students in Dr Kenneth Kaunda District, South Africa.** *South Afr J HIV Med* 2019;20(1): 846.

Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6556943/pdf/HIVMED-20-846.pdf>

BACKGROUND: Voluntary Medical Male Circumcision (VMMC) is regarded as the most cost-effective intervention in reducing female-to-male transmission of HIV in countries where heterosexual transmission is the most prevalent mode of infection. Objectives: The aim of the study was to determine the awareness, sexual behaviours and perceptions of college students in Dr Kenneth Kaunda District, South Africa.

METHOD: A cross-sectional design was engaged among a sample of 400 students selected using a stratified random sampling method. Descriptive data analysis was engaged to analyse data using STATA 13.

RESULTS: The mean age of the respondents was 23 years. About 50% of the respondents were below the age of 23 years. The majority among the ethnic groups were black people and or African people (87.5%), followed by people of mixed race (8.1%). Most of the students belonged to the Christian religion (94.7%), and about 91.3% were single, while only 6.0% lived with their partners. Among those who were circumcised, a majority (78.0%) had undergone the MMC. About 76.5% of those residing in urban areas, and 80.6% residing in rural areas were circumcised. About 90.3% of the participants had good awareness about VMMC. About 77.3% of the participants disagreed that VMMC reduces the size of the penis, while 57.0% felt that VMMC provides an individual with the status of being a real man in society. Only 14.3% felt that VMMC exposes the penis to environmental hazards. While almost half (47.7%) of the cohort had one sexual partner, about 20.9% had three or more sexual partners.

CONCLUSION: The findings suggest that there is a high level of awareness on VMMC among college students in relation to its positive role towards reducing STIs and the enhancement of penile hygiene.

6. Nakyanjo, N., et al. **Women's role in male circumcision promotion in Rakai, Uganda.** *AIDS Care* 2019;31(4): 443-450.

Medical male circumcision (MMC) has expanded in sub-Saharan Africa, yet uptake remains sub-optimal. We sought to understand women's perceptions of and influence on MMC in Rakai, Uganda. We conducted in-depth interviews with 27 women in fishing and trading communities, including women married to circumcised and uncircumcised men, single women, and sex workers. Data analysis followed a team-based framework approach. All female participants preferred circumcised men because of perceived reduced HIV and sexually transmitted infection (STI) risk, improved penile hygiene, and increased sexual pleasure. Perceived negative aspects included abstinence during

wound healing, potentially increased male sexual risk behaviors, fear of being blamed for HIV acquisition, and economic insecurity due to time off work. Participants felt women could persuade their partners to be circumcised, accompany them to the clinic, refuse sex with uncircumcised men, and participate in community MMC activities. Findings support women's important role in MMC acceptance.