

Quarterly Research Digest on Voluntary Medical Male Circumcision for HIV Prevention

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Combination HIV prevention and HIV testing

1. Nash, S., et al. **Combined HIV Adolescent Prevention Study (CHAPS): comparison of HIV pre-exposure prophylaxis regimens for adolescents in sub-Saharan Africa-study protocol for a mixed-methods study including a randomised controlled trial.** *Trials* 2020;21(1): 900.

Online at: <https://trialsjournal.biomedcentral.com/articles/10.1186/s13063-020-04760-x>.

BACKGROUND: HIV remains a major public health issue, especially in Eastern and Southern Africa. Pre-exposure prophylaxis is highly effective when adhered to, but its effectiveness is limited by cost, user acceptability and uptake. The cost of a non-inferiority phase III trial is likely to be prohibitive, and thus, it is essential to select the best possible drug, dose and schedule in advance. The aim of this study, the Combined HIV Adolescent PrEP and Prevention Study (CHAPS), is to investigate the drug, dose and schedule of pre-exposure prophylaxis (PrEP) required for the protection against HIV and the acceptability of PrEP amongst young people in sub-Saharan Africa, and hence to inform the choice of intervention for future phase III PrEP studies and to improve strategies for PrEP implementation.

METHODS: We propose a mixed-methods study amongst young people aged 13-24 years. The first component consists of qualitative research to identify the barriers and motivators towards the uptake of PrEP amongst young people in South Africa, Uganda and Zimbabwe. The second component is a randomised clinical trial (ClinicalTrials.gov NCT03986970, June 2019) using a novel ex vivo HIV challenge method to investigate the

optimal PrEP treatment (FTC-TDF vs FTC-TAF), dose and schedule. We will recruit 144 amongst HIV-negative uncircumcised men aged 13-24 years from voluntary male medical circumcision clinics in two sites (South Africa and Uganda) and randomise them into one of nine arms. One group will receive no PrEP prior to surgery; the other arms will receive either FTC-TDF or FTC-TAF, over 1 or 2 days, and with the final dose given either 6 or 20 h prior to surgery. We will conduct an ex vivo HIV challenge on their resected foreskin tissue.

DISCUSSION: This study will provide both qualitative and quantitative results to help decide the optimum drug, dose and schedule for a future phase III trial of PrEP. The study will also provide crucial information on successful strategies for providing PrEP to young people in sub-Saharan Africa.

TRIAL REGISTRATION: ClinicalTrials.gov NCT03986970 . Registered on 14 June 2019.

2. Lockman, S., et al. **Implementation of universal HIV testing and treatment to reduce HIV incidence in Botswana: the Ya Tsie Study [abstract].** *Curr HIV/AIDS Rep* 2020;17(5): 478-486.

Online at: <https://link.springer.com/article/10.1007%2Fs11904-020-00523-0>.

PURPOSE OF REVIEW: Antiretroviral treatment (ART) can dramatically reduce the risk of HIV transmission, but the feasibility of scaling up HIV testing, linkage and treatment to very high population levels, and its impact on population HIV incidence, were unknown. We review key findings from a community-randomized trial in which we evaluated the impact of "universal test and treat" (UTT) on population HIV incidence in Botswana, a resource-constrained country with both high HIV prevalence and high ART coverage before study inception.

RECENT FINDINGS: We conducted a community-randomized trial (the "Ya Tsie" trial or Botswana Combination Prevention Project (BCPP)) in 30 villages in Botswana from 2013 to 2018, with the goal of determining whether a combination of prevention interventions-with a focus on universal HIV testing and treatment-would reduce population-level HIV incidence. The intervention included universal HIV testing (home-based and mobile), active linkage to HIV care and treatment with patient tracing for persons not linking, universal ART coverage, rapid ART start (at the first clinic visit), and enhanced male circumcision services. Botswana had very high HIV diagnosis, treatment, and viral suppression levels (approaching the UNAIDS "90-90-90" targets) prior to intervention roll-out. By study end, we were able to exceed the overall 95-95-95 coverage target of 86%: an estimated 88% of all persons living with HIV were on ART and had viral suppression in the Ya Tsie intervention arm. In addition, annual HIV incidence was 30% lower in the intervention arm as compared with the control arm over a 29-month follow-up period.

SUMMARY: With universal HIV testing and relatively simple linkage activities, it was possible to achieve one of the highest reported population levels of HIV diagnosis, linkage to care, and viral suppression globally and to reduce population HIV incidence by about one-third over a short period of time (< 3 years). We were able to significantly increase population viral suppression and to decrease HIV incidence even in a resource-constrained setting with pre-existing very high testing and treatment coverage. Universal community-based HIV testing and tracing of individuals through the HIV care cascade were key intervention components.

3. Mudimu, E., et al. **Individual and community-level benefits of PrEP in western Kenya and South Africa: implications for population prioritization of PrEP provision.** *PLoS One* 2020;15(12): e0244761.

Online at: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0244761>.

BACKGROUND: Pre-exposure prophylaxis (PrEP) is highly effective in preventing HIV and has the potential to significantly impact the HIV epidemic. Given limited resources for HIV prevention, identifying PrEP provision strategies that maximize impact is critical.

METHODS: We used a stochastic individual-based network model to evaluate the direct (infections prevented among PrEP users) and indirect (infections prevented among non-PrEP users as a result of PrEP) benefits of PrEP, the person-years of PrEP required to prevent one HIV infection, and the community-level impact of providing PrEP to populations defined by gender and age in western Kenya and South Africa. We examined sensitivity of results to scale-up of antiretroviral therapy (ART) and voluntary medical male circumcision (VMMC) by comparing two scenarios: maintaining current coverage ("status quo") and rapid scale-up to meet programmatic targets ("fast-track").

RESULTS: The community-level impact of PrEP was greatest among women aged 15-24 due to high incidence, while PrEP use among men aged 15-24 yielded the highest proportion of indirect infections prevented in the community. These indirect infections prevented continue to increase over time (western Kenya: 0.4-5.5 (status quo); 0.4-4.9 (fast-track); South Africa: 0.5-1.8 (status quo); 0.5-3.0 (fast-track)) relative to direct infections prevented among PrEP users. The number of person-years of PrEP needed to prevent one HIV infection was lower (59 western Kenya and 69 in South Africa in the status quo scenario; 201 western Kenya and 87 in South Africa in the fast-track scenario) when PrEP was provided only to women compared with only to men over time horizons of up to 5 years, as the indirect benefits of providing PrEP to men accrue in later years.

CONCLUSIONS: Providing PrEP to women aged 15-24 prevents the greatest number of HIV infections per person-year of PrEP, but PrEP provision for young men also provides indirect benefits to women and to the community overall. This finding supports existing policies that prioritize PrEP use for young women, while also illuminating the community-level benefits of PrEP availability for men when resources permit.

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* 2020;10(4): 970-977.

Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7543081/>.

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.

Epidemiological studies

1. Masango, B. Z., et al. **Associations between early circumcision, sexual and protective practices, and HIV among a national sample of male adults in Eswatini [abstract].** *AIDS Behav* 2020 Oct 7. doi: 10.1007/s10461-020-03056-0.

Online at: <https://www.ncbi.nlm.nih.gov/pubmed/33025391>.

To reduce HIV incidence in countries such as Eswatini (Swaziland), UNAIDS has recommended male circumcision as one possible effective strategy. We analyzed the 2016s Swaziland HIV Incidence Measurement Survey to explore the association between early circumcision and HIV history among 2964 sexually active adult males aged 15 to 64 years old. Early circumcision was defined as circumcision practiced at an age of 15 years old or younger. Results from logistic regression and OLS regression found that male adults with early circumcision are more likely to have multiple sexual partners and to use condoms. Multiple partners and condom use at last sex encounter remained associated with a higher odds of being HIV positive after controlling for all factors.

Nevertheless, early circumcision is significantly associated with a lower odds of being HIV positive (AOR 0.53, $p < 0.01$). These findings suggest that HIV prevention may benefit when early male circumcision is carried out.

2. Kabapy, A. F., et al. **Attributes of HIV infection over decades (1982-2018): a systematic review and meta-analysis.** *Transbound Emerg Dis* 2020;67(6): 2372-2388.

Online at: <https://onlinelibrary.wiley.com/doi/10.1111/tbed.13621>.

Understanding the risk factors for HIV infection is the foundation of successful preventive strategies, which must bundle sociocultural, behavioural and biomedical interventions to halt disease transmission. We aimed in this study to provide a pooled estimation of HIV risk factors and trace changes across decades in order to drive consensus and accurate assessment of disease transmission risk. We comprehensively searched PubMed, ISI Web of Knowledge, Medline, EMBASE, ScienceDirect, Ovid, EBSCO, Google Scholar and the Egyptian Universities Library Consortium from October to December 2018. Two independent reviewers extracted data from eligible studies. Funnel plots were inspected to identify publication bias. Heterogeneity across studies was checked using the Q and I(2) statistics. The results were reported based on the pooled odds ratio (pOR) with 95% CI using a random-effects model. Meta-analysis of HIV risk factors revealed a superior role for risky sexual practices (unprotected vaginal/anal sex), injecting drug use (IDU), sharing needles, sexually transmitted infections (STIs), child sexual abuse and vertical transmissions. Trends across decades (1982-1999 and 2000-2018, respectively) showed rising evidence for prostitution [pOR (95% CI)= 2.3 (1.12-4.68) versus 2.69 (1.67-4.32)] and men who have sex with men (MSM) [pOR (95% CI)= 2.28 (1.64-3.17) versus 3.67 (1.88-7.17)], while transmission through IDU [pOR (95% CI)= 3.42 (2.28-5.12) versus 2.16 (1.74-2.70)], alcoholism [pOR (95% CI)= 2.35 (0.73-7.59) versus 1.71(1.08-2.72)], and sharing syringes [pOR (95% CI)= 6.10 (2.57-14.5) versus 2.70 (2.01-6.35)] showed notable decline. Harm reduction programs and condom use have been recognized as chief HIV prevention strategies, while male circumcision contributed a partial role. Collectively, sexual risk factors continue to be a key driver of the global HIV epidemic. Persistent and emerging risk factors identified in our analysis should constitute the forefront targets of HIV prevention programmes to accelerate efforts towards HIV elimination.

3. Carrasco, M. A., et al. **Left behind?: male clients of female sex workers in Zambia [abstract].** *AIDS Care* 2020;32(12): 1498-1505.

Online at: <https://pubmed.ncbi.nlm.nih.gov/31973578/>.

Male clients of female sex workers (CFSWs) are a key-affected group within the HIV epidemic. However, few studies have quantified HIV/STI burdens among CFSWs. This

study used nationally representative data from the 2013-14 Zambia Demographic and Health Survey to estimate proxies for HIV and STI prevalence among sexually active men aged 15-59 paying for sex recently (past 12 months) [5%, n = 679] or in their lifetime [15%, n = 1,887]. Chi-square tests were calculated to assess differences in prevalence estimates between CFSWs and non-clients. Multivariable logistic regression models were generated to identify sociodemographic factors associated with prevention characteristics. CFSWs had higher odds of reporting HIV infection (recent: aOR 1.413, $p < 0.05$; lifetime: aOR 1.604, $p < 0.001$) and past-year STI symptomology (recent: aOR 3.342, $p < 0.001$; lifetime: aOR 2.266, $p < 0.001$) than non-clients, irrespective of transactional sex recency. Compared to non-clients, CFSWs were more likely to be <25yo (42% vs. 29%, $p < 0.001$), have a cohabitating partner (43% vs. 35%, $p < 0.001$), use condoms at last sex (31% vs. 27%, $p < 0.001$), and never test for HIV (36% vs. 29%, $p < 0.001$). When comparing CFSWs to non-clients, marital status was an effect modifier of HIV testing, medical circumcision, and condom use at last sex. Findings suggest high HIV/STI burdens and highlight the urgent need for differentiated HIV prevention programming for CFSWs in Zambia including the provision of PrEP.

4. Edossa, Z. K., et al. **Male circumcision uptake and its predictors among sexually active men aged 15-59 years living in the highest HIV prevalence region of Ethiopia: evidence from 2016 Ethiopia Demographic and Health Survey.** *BMC Public Health* 2020;20(1): 1772.

Online at: <https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-020-09918-5>.

BACKGROUND: Pieces of evidence showed that the Gambella region of Ethiopia has remained HIV hotspot area for successive years. However, the magnitude of male circumcision uptake and its associated factors are not well studied in this region. Hence, the aim of the current study is to assess the magnitude of male circumcision uptake and its predictors among sexually active men in the region using the 2016 Ethiopian Demographic and Health Survey Data.

METHOD: Data on 868 sexually active men residing in the Gambella region were extracted from the 2016 Ethiopian Demographic and health Survey. Descriptive statistics and logistic regression were respectively used to summarize descriptive data and measure the statistical associations. Adjusted odds ratio and confidence intervals were respectively used to measure statistical associations between variables and their statistical significances.

RESULTS: The current study revealed that the overall prevalence of male circumcision uptake in the Gambella region was 61.2% (95% CI: 57.96,64.44). The results of multivariable logistic regression revealed that being Muslim (AOR = 9.54, 95% CI: 6.765-13.88), being Orthodox Christian (AOR = 8.5, 95%CI: 5.00-14.45), being from Poor household (AOR = 0.11, 95%CI: 0.06, 0.22), being from medium-income household (AOR

= .33, 95%CI: 0.15, 0.73), listening to radio (AOR = .29, 95%CI: .16, .54), having comprehensive HIV knowledge (AOR = .44, 95%CI: .27, .71) and ever been tested for HIV (AOR = .27, 95%CI: .16,.46) were independently associated with male circumcision uptake.

CONCLUSION: Despite all efforts made by different stakeholders to promote the provision of male circumcision in the Gambella region, its magnitude of uptake is still unacceptably low. The federal HIV prevention and Control Office and other stakeholders working on HIV prevention and control should give due emphasis to promoting HIV-related knowledge through community-based education and through religious leaders. Integrating and streamlining HIV-related education in the academic curricula, and expanding mass media coverage should also be given due consideration by the federal government and other stakeholders. The stakeholders should also give emphasis to strengthening and empowering poor sexually active men residing in the Gambella region.

Impact and coverage

1. Loevinsohn, G., et al. **Effectiveness of voluntary medical male circumcision for HIV prevention in Rakai, Uganda [abstract]**. *Clin Infect Dis* 2020 Oct 12. doi: 10.1093/cid/ciaa1533. Online ahead of print.

Online at: <https://academic.oup.com/cid/advance-article-abstract/doi/10.1093/cid/ciaa1533/5921021?redirectedFrom=fulltext>.

BACKGROUND: The efficacy of voluntary male medical circumcision (VMMC) for HIV prevention in men was demonstrated in three randomized trials. This led to the adoption of VMMC as an integral component of the President's Emergency Plan for AIDS Relief (PEPFAR) combination HIV prevention program in sub-Saharan Africa. However, evidence on the individual-level effectiveness of VMMC programs in real world, programmatic settings is limited.

METHODS: A cohort of initially uncircumcised, non-Muslim, HIV-uninfected men in the Rakai Community Cohort Study in Uganda were followed between 2009 and 2016 during VMMC scale-up. Self-reported VMMC status was collected and HIV tests performed at surveys conducted every 18 months. Multivariable Poisson regression was used to estimate the incidence rate ratio (IRR) of HIV acquisition in newly circumcised versus uncircumcised men.

RESULTS: 3,916 non-Muslim men were followed for 17,088 person-years (py). There were 1338 newly reported VMMCs (9.8/100 py). Over the study period, the median age of men adopting VMMC declined from 28 years (IQR 21-35) to 22 years (IQR 18-29; p-trend <0.001). HIV incidence was 0.40/100 py (20/4992.8 py) among newly circumcised men and 0.98/100 py (118/12095.1 py) among uncircumcised men with an adjusted IRR

of 0.47 (95%CI: 0.28-0.78). The effectiveness of VMMC was sustained with increasing time from surgery and was similar across age groups and calendar time.

CONCLUSIONS: VMMC programs are highly effective in preventing HIV-acquisition in men. The observed effectiveness is consistent with efficacy in clinical trials and supports current recommendations that VMMC is a key component of programs to reduce HIV incidence.

2. Toms, K., et al. **Efficacy of HIV interventions in African fishing communities: a systematic review and qualitative synthesis.** *Int J Infect Dis* 2020;101: 326-333.

Online at: [https://www.ijidonline.com/article/S1201-9712\(20\)32192-5/fulltext](https://www.ijidonline.com/article/S1201-9712(20)32192-5/fulltext).

OBJECTIVES: This systematic review aims to qualitatively synthesize existing evidence on the efficacy of HIV interventions in African fishing communities.

METHODS: Five databases (NCBI PubMed, EMBASE, Web of Science Core Collection, The Cochrane Library, and CABI Global Health Database) were searched in March 2019 for eligible studies. All peer-reviewed papers with a defined HIV intervention explicitly mentioning African fishing communities were included. Outcomes included any measure of the efficacy of HIV interventions.

RESULTS: Of 22,289 search results, data was extracted from 25 eligible studies that passed critical appraisal; seven involved HIV prevention, six HIV testing and counseling, three treatment, and nine combinations of more than one intervention. Findings include a high coverage of safe male circumcision (SMC) but low condom use among fisher folk, and a preference for PrEP over other HIV prevention services. Uptake of HIV testing and ART coverage are below levels required to reach UNAIDS 90-90-90 targets, and there is a high demand for ART and HIV self-testing kits.

CONCLUSIONS: Greater provision of services to combat HIV, specifically amongst fishing communities, is required; there is limited information on retaining fisher folk in care and achieving an undetectable viral load. Interventions tailored to individual fishing populations, offered in parallel to education or counseling services are likely to be most effective. Use of innovations, including mobile health and medical drones, could assist these hard-to-reach populations. Our findings will inform future HIV service provision in fishing communities.

3. Davis, S. M., et al. **Modeling the impact of voluntary medical male circumcision (VMMC) on cervical cancer in Uganda.** *J Acquir Immune Defic Syndr* 2020 Oct 23. doi: 10.1097/QAI.0000000000002552. Online ahead of print.

Online at:

https://journals.lww.com/jaids/Abstract/9000/Modeling_the_Impact_of_Voluntary_Medical_Male.96032.aspx.

In addition to providing millions of men with lifelong lower risk for HIV infection, voluntary medical male circumcision (VMMC) also provides female partners with health benefits including decreased risk for human papillomavirus (HPV) and resultant cervical cancer (CC).

SETTING: We modeled potential impacts of VMMC on cervical cancer incidence and mortality in Uganda as an additional benefit beyond HIV prevention.

METHODS: HPV and CC outcomes were modeled using the CC model from the Spectrum policy tool suite, calibrated for Uganda, to estimate HPV infection incidence and progression to CC, using a 50-year (2018-2067) time horizon. 2016 Demographic Health Survey data provided baseline VMMC coverage. The baseline (no VMMC scale-up beyond current coverage, minimal HPV vaccination coverage) was compared to multiple scenarios to assess the varying impact of VMMC according to different implementations of HPV vaccination and HPV screening programs.

RESULTS: Without further intervention, annual CC incidence was projected to rise from 16.9 to 31.2 per 100,000 women in 2067. VMMC scale-up alone decreased 2067 annual CC incidence to 25.3, averting 13,000 deaths between 2018-2067. With rapidly-achieved 90% HPV9 vaccination coverage for adolescent girls and young women, 2067 incidence dropped below 10 per 100,000 with or without a VMMC program. With 45% vaccine coverage, the addition of VMMC scaleup decreased incidence by 2.9 per 100,000 and averted 8,000 additional deaths. Similarly, with HPV screen-and-treat without vaccination, the addition of VMMC scaleup decreased incidence by 5.1 per 100,000 and averted 10,000 additional deaths.

CONCLUSIONS: Planned VMMC scale-up to 90% coverage from current levels could prevent a substantial number of CC cases and deaths in the absence of rapid scale-up of HPV vaccination to 90% coverage.

4. Morris, B. J. **Voluntary medical male circumcision proves robust for mitigating heterosexual HIV infection.** *Clin Infect Dis* 2020. Oct 12;ciaa1542. doi: 10.1093/cid/ciaa1542. Online ahead of print.

Online at: <https://academic.oup.com/cid/advance-article-abstract/doi/10.1093/cid/ciaa1542/5921027?redirectedFrom=fulltext>.

No abstract.

Male circumcision methods, including devices

1. Su, Q., et al. **A comparative study on the clinical efficacy of modified circumcision and two other types of circumcision.** *Urol J* 2020 Oct 10. doi: 10.22037/uj/v16i7.6193. Online ahead of print.

Online at: <https://journals.sbmu.ac.ir/urolij/index.php/uj/article/view/6193>.

PURPOSE: To compare the clinical effects of three methods of circumcision: modified circumcision, traditional circumcision, and disposable suturing device circumcision.

MATERIALS AND METHODS: Male patients (n = 241) with redundant prepuce and/or phimosis were included in a clinical trial from January 2019 to March 2020. Patients were divided into 3 groups based on the surgical method: group A, traditional circumcision (n = 79); group B, modified circumcision (n = 80); and group C, disposable suturing device circumcision (n = 82).

RESULTS: The operation times in groups A, B, and C were 25.2 +/- 3.3 min, 10.2 +/- 2.7 min, and 6.7 +/- 1.4 min, respectively. The volumes of intraoperative blood loss in groups A, B, and C were 12.7 +/- 2.3 mL, 8.1 +/- 3.4 mL, and 2.2 +/- 0.8 mL, respectively (P < 0.05). Groups A and B were superior to group C in terms of the 6-h postoperative visual analog scale score and appearance satisfaction (P < 0.05). There were no obvious differences in the 7-day postoperative pain score and total healing time (P > 0.05). The operating expenses in groups A and B were lower than that in group C (P < 0.05).

CONCLUSION: Modified circumcision, with its advantages of shorter operation time, less blood loss and pain, lower cost, and better postoperative penile appearance, is easily accepted by patients and deserves wide clinical application.

Safety and quality

1. Feldacker, C., et al. **Balancing competing priorities: quantity versus quality within a routine, voluntary medical male circumcision program operating at scale in Zimbabwe.** *PLoS One* 2020;15(10): e0240425.

Online at: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0240425>.

BACKGROUND: Since 2013, the ZAZIC consortium supported the Zimbabwe Ministry of Health and Child Care (MOHCC) to implement a high quality, integrated voluntary medical male circumcision (VMMC) program in 13 districts. With the aim of significantly lowering global HIV rates, prevention programs like VMMC make every effort to achieve ambitious targets at an increasingly reduced cost. This has the potential to threaten VMMC program quality. Two measures of program quality are follow-up and adverse event (AE) rates. To inform further VMMC program improvement, ZAZIC conducted a

quality assurance (QA) activity to assess if pressure to do more with less influenced program quality.

METHODS: Key informant interviews (KIIs) were conducted at 9 sites with 7 site-based VMMC program officers and 9 ZAZIC roving team members. Confidentiality was ensured to encourage candid conversation on adherence to VMMC standards, methods to increase productivity, challenges to target achievement, and suggestions for program modification. Interviews were recorded, transcribed and analyzed using Atlas.ti 6.

RESULTS: VMMC teams work long hours in diverse community settings to reach ambitious targets. Rotating, large teams of trained VMMC providers ensures meeting demand. Service providers prioritize VMMC safety procedures and implement additional QA measures to prevent AEs among all clients, especially minors. However, KIIs noted three areas where pressure for increased numbers of clients diminished adherence to VMMC safety standards. For pre- and post-operative counselling, MC teams may combine individual and group sessions to reach more people, potentially reducing client understanding of critical wound care instructions. Second, key infection control practices may be compromised (handwashing, scrubbing techniques, and preoperative client preparation) to speed MC procedures. Lastly, pressure for client numbers may reduce prioritization of patient follow-up, while client-perceived stigma may reduce care-seeking. Although AEs appear well managed, delays in AE identification and lack of consistent AE reporting compromise program quality.

CONCLUSION: In pursuit of ambitious targets, healthcare workers may compromise quality of MC services. Although risk to patients may appear minimal, careful consideration of the realities and risks of ambitious target setting by donors, ministries, and implementing partners could help to ensure that client safety and program quality is consistently prioritized over productivity.

Social and behavioural research

1. Keetile, M. **An assessment of sexual risk behaviours among circumcised and uncircumcised men before and after the implementation of the safe male circumcision programme in Botswana [abstract].** *AIDS Care* 2020;32(12): 1594-1601.

Online at:

<https://www.tandfonline.com/doi/abs/10.1080/09540121.2020.1769830?journalCode=caic20>.

HIV/AIDS prevalence is still high in Botswana. The main aim of this study was to assess and compare sexual risk behaviours of circumcised and uncircumcised men before and after the launch of the safe male circumcision programme. Data used for analyses were derived from the 2008 and 2013 Botswana AIDS Impact Surveys. Modified Poisson regression analysis was used to obtain prevalence ratios (PR) as measures of association

between circumcision status and multiple sexual partners, transactional sex, inconsistent condom use and intergenerational sex. The proportion of circumcised men increased two times between 2008 (12.5%) and 2013 (25.2%). Prevalence of multiple sexual partnerships was high among uncircumcised than circumcised (54.6% vs. 46.4%) men in 2008, but in 2013 after the introduction of the SMC programme it was slightly high among circumcised men than uncircumcised men (23.2 vs. 21.8%). In the adjusted analyses, being circumcised was significantly associated with having multiple sexual partners (2008=adjusted PR=1.31, CI=1.10-1.57; 2013= adjusted PR=1.12, CI=1.01-1.41) and transactional sex (2008=adjusted PR=1.98, CI=1.26-3.11; 2013=adjusted PR=1.60, CI=1.09-1.22) for both survey periods. These results indicate the need to continuously sensitise and encourage men to stop multiple sexual partnerships and transactional sex. Moreover, there is need to encourage all men to use condoms consistently.

2. Morris, B. J., et al. **The contrasting evidence concerning the effect of male circumcision on sexual function, sensation, and pleasure: a systematic review.** *Sex Med* 2020;8(4): 577-598.

Online at: [https://www.smoa.jsexmed.org/article/S2050-1161\(20\)30124-0/fulltext](https://www.smoa.jsexmed.org/article/S2050-1161(20)30124-0/fulltext).

INTRODUCTION: Active debate concerns whether male circumcision (MC) affects sexual function, penile sensation, or sexual pleasure.

AIM: To perform a systematic review examining the effect of MC on these parameters.

METHODS: PRISMA-compliant searches of PubMed, EMBASE, the Cochrane Library, and Google Scholar were performed, with "circumcision" used together with appropriate search terms. Articles meeting the inclusion criteria were rated for quality by the Scottish Intercollegiate Guidelines Network system.

MAIN OUTCOME MEASURE: Evidence rated by quality.

RESULTS: Searches identified 46 publications containing original data, as well as 4 systematic reviews (2 with meta-analyses), plus 29 critiques of various studies and 15 author replies, which together comprised a total of 94 publications. There was overall consistency in conclusions arising from high- and moderate-quality survey data in randomized clinical trials, systematic reviews and meta-analyses, physiological studies, large longitudinal studies, and cohort studies in diverse populations. Those studies found MC has no or minimal adverse effect on sexual function, sensation, or pleasure, with some finding improvements. A consensus from physiological and histological studies was that the glans and underside of the shaft, not the foreskin, are involved in neurological pathways mediating erogenous sensation. In contrast to the higher quality evidence, data supporting adverse effects of MC on function, sensation, or pleasure were found to be of low quality, as explained in critiques of those studies.

CONCLUSION: The consensus of the highest quality literature is that MC has minimal or no adverse effect, and in some studies, it has benefits on sexual functions, sensation, satisfaction, and pleasure for males circumcised neonatally or in adulthood.

3. Fleming, P. J., et al. **Integration of voluntary male medical circumcision for HIV prevention into norms of masculinity: findings from Kisumu, Kenya [abstract]**. *Cult Health Sex* 2020 Oct 5: 1-13. doi:10.1080/13691058.2020.1829057. Online ahead of print.

Online at:

<https://www.tandfonline.com/doi/abs/10.1080/13691058.2020.1829057?journalCode=tchs20>.

While it is clear that in many communities ideas about masculinity and circumcision are connected, it is still unclear how young Kenyan men in the former Nyanza province from the traditionally non-circumcising Luo people perceive voluntary medical male circumcision as connected to masculinity and the role of voluntary medical male circumcision in the transition from boyhood to manhood. The objective of this study was to explore norms of masculinity and the decision-making process among Luo young men to provide a better understanding of how circumcision and masculinity relate to cultural norms within this community. The methodology consisted of eight FGDs with male peer groups and 24 in-depth interviews to elicit young men's perceptions of masculinity and voluntary medical male circumcision. Findings from thematic analysis reveal that young men described several key characteristics of masculinity including responsibility, bravery and sexual attractiveness. For some young men, voluntary medical male circumcision has embedded itself into cultural norms of masculinity by being a step in the transition from boyhood to manhood and by being a marker of some of these masculine characteristics. In the case of voluntary medical male circumcision, there may be opportunities to integrate other programming that helps men transition into healthy adulthood.

4. Mavundla, T. R., et al. **Perceived influence of value systems on the uptake of voluntary medical male circumcision among men in Kweneng East, Botswana**. *SAHARA J* 2020;17(1): 22-29.

Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7682735/>.

Botswana is one of the countries in Eastern and Southern Africa significantly impacted by the Human Immunodeficiency Virus (HIV). To control the spread of HIV, the government in 2009 rolled out the voluntary medical male circumcision (VMMC) programme as an additional HIV prevention strategy with the goal of circumcising 80% of HIV negative men by 2016. However, the country failed to achieve this goal as less than 30% of the targeted men were circumcised by 2016. A study was therefore

conducted to explore and describe the factors that are perceived by men in Botswana to influence the uptake of VMMC in order to inform future policymaking and programming on VMMC. An exploratory descriptive, qualitative design was utilised to investigate perceived factors influencing the uptake of VMMC among men. Data were collected from 38 men, aged 18-49 years in Kweneng East, Botswana using semi-structured individual interviews and focus group discussions (FGDs). Tesch's method of qualitative data analysis was used to code and categorise transcribed data into meaningful themes. Upon analysis, three themes emerged as influencing the uptake of VMMC: (a) the influence of value systems associated with stakeholder consultation in the community; (b) the influence of value systems associated with cultural beliefs and (c) the influence of value systems associated with religious beliefs. The influence of value systems associated with stakeholder consultation in the community was found to manifest in the form of the lack of consultation with men at the inception of the VMMC; the lack of involvement of village elders during the service delivery process and the lack of involvement of women in VMMC. In addition, the influence of value systems associated with cultural beliefs was found to manifest in the form of the lack of openness between parents and children on sexual matters and the lack of traditional leadership support in VMMC. Lastly, the influence of value systems associated with religious beliefs was found to manifest in the form of religious views not in support of the VMMC and religious views in support of the VMMC. It is concluded that value systems associated with stakeholder consultation, cultural beliefs and religious beliefs were the factors influencing the uptake of VMMC among men in Kweneng East, Botswana, and these factors to a larger extent deterred men from using VMMC services. Based on these findings, it is therefore concluded that government and other providers of VMMC should consider the influence of value systems on the uptake of VMMC in order to provide culturally congruent VMMC services and boost of the uptake of VMMC among men in Kweneng East, Botswana.

5. Spees, L. P., et al. **Sexual risk compensation following voluntary medical male circumcision: results from a prospective cohort study amongst human immunodeficiency virus-negative adult men in Botswana.** *South Afr J HIV Med* 2020;21(1): 1157.

Online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7756904/>.

BACKGROUND: Circumcised men may increase sexual risk-taking following voluntary medical male circumcision (VMMC) because of decreased perceptions of risk, which may negate the beneficial impact of VMMC in preventing new human immunodeficiency virus (HIV) infections.

OBJECTIVES: We evaluated changes in sexual behaviour following VMMC.

METHODS: We conducted a prospective cohort study amongst sexually active, HIV-negative adult men undergoing VMMC in Gaborone, Botswana, during 2013-2015. Risky sexual behaviour, defined as the number of sexual partners in the previous month and ≥ 1 concurrent sexual partnerships during the previous 3 months, was assessed at baseline (prior to VMMC) and 3 months post-VMMC. Change over time was assessed by using inverse probability weighted linear and conditional logistic regression models.

RESULTS: We enrolled 523 men; 509 (97%) provided sexual behaviour information at baseline. At 3 months post-VMMC, 368 (72%) completed the follow-up questionnaire. At baseline, the mean (95% confidence interval) number of sexual partners was 1.60 (1.48, 1.65), and 111 (31% of 353 with data) men reported engaging in concurrent partnerships. At 3 months post-VMMC, 70 (23% of 311 with data) reported fewer partners and 19% had more partners. Amongst 111 men with a concurrent partnership at baseline, 52% reported none post-VMMC. Amongst the 242 (69%) without a concurrent partnership at baseline, 19% reported initiating one post-VMMC. After adjustment for loss to follow-up, risky sexual behaviour post-VMMC (measured as mean changes in a number of partners and proportion engaging in concurrency) was similar to baseline levels.

CONCLUSION: We found no evidence of sexual risk compensation in the 3 months following VMMC.

VMMC – general

1. Rennie, S., et al. **Ethics of pursuing targets in public health: the case of voluntary medical male circumcision for HIV-prevention programs in Kenya [abstract].** *J Med Ethics* 2020 Nov 4. doi: 10.1136/medethics-2020-106293. Online ahead of print.

Online at: <https://www.ncbi.nlm.nih.gov/pubmed/33148776>.

The use of targets to direct public health programmes, particularly in global initiatives, has become widely accepted and commonplace. This paper is an ethical analysis of the utilisation of targets in global public health using our fieldwork on and experiences with voluntary medical male circumcision (VMMC) initiatives in Kenya. Among the many countries involved in VMMC for HIV prevention, Kenya is considered a success story, its programmes having medically circumcised nearly 2 million men since 2007. We describe ethically problematic practices in Kenyan VMMC programmes revealed by our fieldwork, how the problems are related to the pursuit of targets and discuss possible approaches to their management. Although the establishment and pursuit of targets in public health can have many benefits, assessments of target-driven programmes tend to focus on quantifiable outcomes rather than the processes by which the outcomes are obtained. However, in order to speak more robustly about programmatic 'success', and to

maintain community trust, it is vital to ethically evaluate how a public health initiative is actually implemented in the pursuit of its targets.