

Medical Male Circumcision Is Associated With Improvements in Pain During Intercourse and Sexual Satisfaction in Kenya



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ABSTRACT

Background: Two cohort studies using data from randomized controlled trials in Africa offer the best evidence to date on the effects of voluntary medical male circumcision (VMMC) on male sexual function and satisfaction, suggesting no significant impairments in sexual function or satisfaction and some improvements in sexual function after male circumcision.

Aim: To assess the effects of VMMC on sexual function and satisfaction in a large population-based cohort of men circumcised as adults and uncircumcised controls in Kenya.

Methods: Sexual function and satisfaction of young (median age = 20 years) sexually active men (1,509 newly circumcised men and 1,524 age-matched uncircumcised controls after 5% loss to follow-up) were assessed at baseline and 6, 12, 18, and 24 months, with data collected in 2008 to 2012. Self-reported data on lack of sexual interest or pleasure, difficulty getting or maintaining erections, orgasm difficulties, premature ejaculation, pain during intercourse, and satisfaction with sexual intercourse were analyzed with mixed-effect models to detect differences between circumcised and uncircumcised men and changes over time.

Outcomes: Changes over time in sexual interest, desire and pleasure, erectile and ejaculatory function, and pain during intercourse (dyspareunia) in circumcised and uncircumcised men; group differences in time trends; satisfaction with sexual performance; and enjoyment of sex before and after circumcision.

Results: Sexual dysfunctions decreased in the two study groups from 17% to 54% at baseline to 11% to 44% at 24 months ($P < .001$), except dyspareunia, which decreased only in circumcised men ($P < .001$). Sexual satisfaction outcomes increased in the two study groups from 34% to 82% at baseline to 66% to 93% at 24 months ($P < .001$), with greater improvements in circumcised men ($P < .001$). On average, 97% of circumcised men were satisfied with sexual intercourse and 92% rated sex as more enjoyable or no different after circumcision compared with before circumcision.

Clinical Translation: Results are applicable to VMMC programs seeking to increase the acceptability of male circumcision as part of comprehensive HIV prevention.

Strengths and Limitations: Large-scale population-based longitudinal data restricted to sexually active individuals and adjusted for differences in baseline levels of outcomes and potential confounders are used. The questionnaire used, although not a standardized survey instrument, includes all major domains of male sexual function and satisfaction used in the most common standardized tools.

Conclusions: Results are consistent with large cohort studies of VMMC using data from randomized controlled trials and indicate that VMMC has no significant detrimental effect or might have beneficial effects on male sexual function and satisfaction for the great majority of men circumcised as adults. **Nordstrom MPC, Westercamp N, Jaoko W, et al. Medical Male Circumcision Is Associated With Improvements in Pain During Intercourse and Sexual Satisfaction in Kenya. J Sex Med 2017;14:601–612.**

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Key Words: Male Circumcision; HIV Infection; Sexual Dysfunction; Orgasm; Erectile Dysfunction; Premature Ejaculation

Received December 4, 2016. Accepted February 20, 2017.

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<http://dx.doi.org/10.1016/j.jsxm.2017.02.014>

INTRODUCTION

Continued scale-up of voluntary medical male circumcision (VMMC) is needed to decrease HIV transmission in 14 priority African countries and will depend in part on the continued acceptability of VMMC programs to target populations. The possibility that VMMC has deleterious effects on sexual function and satisfaction could affect the future acceptability and uptake of VMMC programs.^{1–4}

Various biological mechanisms have been proposed that could lead to losses in penile sensitivity or sensation after circumcision. These include a smaller skin surface, neural reorganization and/or atrophy of penile nerves,⁵ keratinization of the skin,^{6–9} loss of the natural gliding mechanism and lubrication provided by the foreskin, and loss of smegma with resulting loss of pheromones.¹⁰ Physiologic changes, if present, have been interpreted as potentially negative, as in possibly decreasing sexual pleasure,⁹ or potentially positive, as in increasing intravaginal ejaculatory latency time and resulting in better ejaculation control and prolonged sexual pleasure.¹¹ These contrary views have led to controversy over the effects of VMMC on male sexual function and satisfaction.

Two cohort studies using data from randomized controlled trials (RCTs) in Africa^{12,13} offer the best evidence to date on the effects of VMMC on male sexual function and satisfaction, suggesting no significant impairments in sexual function or satisfaction and some improvements in sexual function after male circumcision. However, RCT conditions can differ from VMMC program conditions in ways that could affect men's self-assessment of sexual function and satisfaction, such as randomization of participants into study groups, differences in perceptions about VMMC before and after RCT results are available, and differences in staff training, medical equipment, and implementation procedures.^{14,15} The purpose of this study was to add evidence garnered in the setting of a national program scaling up VMMC for HIV prevention. We provide analyses of large-scale population-based longitudinal data on the sexual function and satisfaction of men circumcised as adults, including data from before and after circumcision.

METHODS

Recruitment of Research Participants and Data Collection

Data for this study were collected by Westercamp et al¹⁵ during initial VMMC program implementation in Kenya. Participants were uncircumcised young men 18 to 35 years old who were recruited in 2008 to 2010, resided in Kisumu, Kenya and surrounding districts, and had no plans to relocate in the following 2 years. Study information was posted at VMMC facilities and distributed by word of mouth and through community outreach. Men seeking circumcision services at VMMC facilities were enrolled in the intervention group, which required circumcision through the Kenyan VMMC program for

participation. Men who did not wish to be circumcised were encouraged to enroll as controls and were matched by frequency to VMMC participants in age and community and of residence. Participants were not included or excluded based on pre-existing medical conditions, HIV status, or levels of sexual activity; however, participants with obvious indications for circumcision were excluded from the study and referred for therapeutic circumcision.

All participants provided signed informed consent and completed a survey questionnaire at baseline. Follow-up visits were conducted at nine health facilities providing VMMC services or at participants' homes, workplaces, or other convenient location at 6, 12, 18, and 24 months after enrollment within a period of ± 3 months. Participants who missed a study visit (>3 months late) were allowed to continue participation in the study. At each visit, participants were visually examined to confirm circumcision status, asked to complete a study questionnaire, and paid approximately \$2.50 compensation for missed worktime and transportation. Questionnaires were administered using audio computer-assisted self-interview (70%) or a paper form (30%).

The behavioral questionnaire¹⁵ incorporated the major domains of sexual function—sexual drive and desire, erectile function, ejaculation, orgasm, and sexual satisfaction—covered by the three validated survey instruments most commonly used to diagnose male sexual dysfunctions—the Brief Male Sexual Function Inventory, the International Index of Erectile Function, and the Premature Ejaculation Diagnostic Tool^{16–20}—and included questions referring to pain during intercourse (dyspareunia). The assessment of sexual function and satisfaction matched the questions asked in the Kisumu, Kenya RCT of male circumcision for direct comparability. Survey questions referred to symptoms persisting over a period of at least 2 weeks in the past 6 months. Sexual function questions asked participants whether they had experienced lack of sexual interest or pleasure, difficulty getting or maintaining erections, not being able to achieve an orgasm, achieving an orgasm too quickly, and pain during intercourse. Sexual satisfaction questions asked participants how satisfied they were with sexual intercourse, level of sexual desire, getting erections, maintaining erections, interval between erections, ease in ejaculation, and level of pain during intercourse using a comparable five-item satisfaction response scale ranging from “very dissatisfied” to “very satisfied.”

No direct risk reduction counseling was given by study staff at study visits. However, participants in the two study groups were encouraged to use the HIV testing and counseling services and were exposed to educational videos on HIV in health facility waiting areas. In addition, conforming to Kenyan national guidelines for provision of VMMC,²¹ circumcised men received risk reduction and partial protection counseling at the time of the procedure.

Sample Sizes and Power

Participants who had only baseline data (approximately 5% of recruited participants) were excluded from longitudinal analyses.

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