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Renee Ridzon

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# Sexual satisfaction of women partners of circumcised men in a randomized trial of male circumcision in Rakai, Uganda

**Godfrey Kigozi, Ivan Lukabwe, Joseph Kagaayi, Maria J. Wawer\*, Betty Nantume, Grace Kigozi, Fred Nalugoda, Noah Kiwanuka†, Fred Wabwire-Mangen†, David Serwadda†, Renee Ridzon‡, Dennis Buwembo, Dorothy Nabukenya, Stephen Watya§, Tom Lutalo¶, James Nkale and Ronald H. Gray\***

*Rakai Health Sciences Program, ¶Uganda Virus Research Institute, Entebbe, †School of Public Health, ‡Gates Foundation, §Department of Surgery, Mulago Hospital, Kampala, Uganda, and \*Bloomberg School of Public Health, Johns Hopkins, Baltimore, MD, USA*

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Study Type – Therapy (RCT)  
Level of Evidence 1b

## OBJECTIVE

To investigate the effect of adult medical male circumcision on female sexual satisfaction.

## SUBJECTS AND METHODS

We investigated self-reported sexual satisfaction among 455 women partners of men circumcised in a randomized trial of male circumcision for the prevention of human immunodeficiency virus in Rakai,

Uganda. Women aged 15–49 years were interviewed about their sexual satisfaction before and after their partners were circumcised. We analysed female-reported changes in sexual satisfaction using chi-square or Fisher's exact tests.

## RESULTS

Only 2.9% (13/455) of women reported less sexual satisfaction after their partners were circumcised; 57.3% (255/455) reported no change in sexual satisfaction and 39.8% (177/455) reported an improvement in sexual satisfaction after their partner's circumcision. There were no statistically

significant differences in sexual satisfaction before and after partner's circumcision by age, religion and education status.

## CONCLUSION

The overwhelming majority of women (97.1%) report either no change or improved sexual satisfaction after their male partner was circumcised. These findings suggest that male circumcision has no deleterious effect on female sexual satisfaction.

## KEYWORDS

sexual satisfaction, male circumcision, women

## INTRODUCTION

Three randomized controlled trials conducted in Uganda, Kenya and South Africa showed that male circumcision reduces HIV acquisition among HIV-negative men by 50–60% [1–3] and the WHO now recommends the procedure as a component of HIV-prevention programmes [4]. Studies in Uganda and Kenya show no deleterious effects of circumcision on male sexual satisfaction or function [5,6]. However, there is limited information on sexual satisfaction among female partners of circumcised men [7,8], and there has been speculation that removal of the foreskin might reduce female

sexual satisfaction because the gliding action of the foreskin is thought to facilitate vaginal penetration [7,8]. Sociologists and gender specialists have urged that circumcision 'roll-out' programmes consider social factors that might affect women, including acceptability of male circumcision and female sexual satisfaction [9]. A Spanish study of 19 women showed no effect of male circumcision on overall female sexual satisfaction [10].

We investigated female-reported sexual satisfaction before and after circumcision of their male partners who were enrolled in a randomized trial of male circumcision for HIV prevention in Rakai, Uganda.

## SUBJECTS AND METHODS

Two randomized controlled trials conducted in Rakai were described previously [3]. Briefly, the trials enrolled consenting HIV-negative and -positive uncircumcised men and their consenting spouses aged 15–49 years. Men provided informed consent for randomization to immediate circumcision (the intervention arm), or circumcision delayed for 24 months (the control arm). All surgeries were performed by well-trained medical officers using the sleeve procedure, and were conducted in fully equipped outpatient operating rooms (theatres) located in a central facility [3].

TABLE 1 Selected social-demographic characteristics of women enrolled in the study

Characteristics	Sex before and after surgery, n (%)		P, chi-square
	Yes	No	
All	455 (100)	171 (100)	
Age, years			
15–24	159 (36)	74 (43)	0.03
25–29	153 (34)	48 (28)	
>30	133 (30)	49 (29)	
Religion			
Catholic	324 (73)	137 (80)	0.45
Protestant	79 (18)	25 (15)	
None/Muslim/Saved/other	42 (9)	9 (5)	
Education			
None/primary	336 (76)	133 (81)	0.34
Secondary/tertiary	109 (24)	38 (19)	

TABLE 2 Self-reported sexual satisfaction among women who had sexual intercourse before and after their partner's circumcision

Characteristic	Relative level of sexual satisfaction (after vs before), n (%)				P
	Less	Same	More	Total	
All	13 (2.9)	255 (57.3)	177 (39.8)	455 (100)	
Age, years					
15–24	4 (2.5)	80 (50.3)	75 (47.2)	159 (100)	0.14
25–29	4 (2.6)	90 (58.8)	59 (38.6)	153 (100)	
>30	5 (3.8)	85 (63.9)	43 (32.3)	133 (100)	
Religion					
Catholic	11 (3.4)	178 (54.9)	135 (41.2)	324 (100)	0.09
Protestant	1 (1.3)	56 (70.9)	22 (27.9)	79 (100)	
Muslim/none/saved/other	1 (2.4)	21 (50.0)	20 (47.6)	42 (100)	
Education					
None/primary	12 (3.6)	195 (58.0)	129 (38.4)	336 (100)	0.25
Secondary/tertiary	1 (2.9)	60 (55.1)	48 (44.0)	109 (100)	

In all, 616 women who were partners of circumcised men were consented and interviewed by same-sex interviewers in a follow-up study, using structured questionnaires; 455 women who had had sexual intercourse with their male partners before and after they were circumcised were included in this analysis. Sociodemographic information and self-reported sexual satisfaction before and after the partner was circumcised were collected. Sexual satisfaction was categorized into 'less satisfied' if the woman reported that she was less sexually satisfied after her partner's circumcision, 'no change in satisfaction' if the woman reported no difference in sexual satisfaction, and 'more satisfied' if the

women reported that she was more sexually satisfied. The partners' circumcision status was confirmed by interview and genital examination during trial follow-up visits. Women who reported less or more sexual satisfaction after surgery were also asked why they were less or more sexually satisfied.

All participants provided written informed consent and were provided with education on safe-sex practices (i.e. sexual abstinence, faithfulness with an uninfected partner and consistent condom use with a partner who is HIV-positive or whose HIV status is unknown), were offered free condoms, free voluntary HIV counselling and testing, free treatment for

sexually transmitted disease, and were referred for free HIV care in the Rakai PEPFAR funded ART programme if they were found to be HIV-positive.

Women who reported any problem with sexual satisfaction or function had access to a programme medical officer for management, including counselling and referral when necessary.

This trial was reviewed and approved by the Uganda Virus Research Institute Science and Ethics Committee in Uganda and the Uganda National Council of Science and Technology that oversees research in Uganda. The study was also approved by the Western Institutional Review Board in the USA and was monitored by a Data Safety and Monitoring Board for Trial registration number NCT00124878.

We analysed female-reported change in sexual satisfaction before and after their male partner was circumcised. Tests of statistical inference were based on chi-square or the Fisher's exact tests for proportions.

## RESULTS

In all, 455 of the 616 (73.9%) enrolled women had had sexual intercourse before and after their partner was circumcised, and were included in this analysis. As shown in Table 1, these women were significantly older than the 171 women who did not have sexual relations before and after their partner's surgery ( $P = 0.03$ ), but the two groups were comparable in other sociodemographic characteristics.

Table 2 shows reported change in sexual satisfaction by social and demographic characteristics. Only 2.9% (13/455) of women reported less sexual satisfaction after their partners were circumcised. In all, 255/455 (57%) of women reported no change in sexual satisfaction, while 39.8% (177/455) reported an improvement in sexual satisfaction after their partners' circumcision. There were no statistically significant differences in female-reported change in sexual satisfaction before and after their partner's circumcision by age ( $P = 0.14$ ), religion ( $P = 0.09$ ) and education status ( $P = 0.25$ ).

Table 3 shows problems reported by 13 women who reported reduced sexual

TABLE 3 Reason cited for reduced female sexual satisfaction in 13 women and improved satisfaction in 177 women

Reason for change in sexual satisfaction	n or n (%)
<b>Reduced (13)</b>	
Level of sexual desire was reduced	6
Male partners' desire for sex was reduced	6
Male partner had difficulty maintaining an erection	5
Male partner had difficulty getting erections	3
Male partner's took longer to achieve orgasm	2
Male partner had difficulty with penetration	2
Male partner had difficulty with ejaculation	2
Male partner wanted sex too often	1
Male partner has pain on intercourse	1
Woman had pain on intercourse	1
Woman could not achieve orgasm or achieved orgasms less often	1
Prolonged intervals between female orgasms	0
<b>Improved (177)</b>	
Better hygiene	51 (28.8)
Male partner takes longer to achieve orgasm	45 (25.4)
Partner wanted sex more often	44 (24.9)
Partner had less/no difficulty maintaining erection	26 (14.7)
Female achieved orgasm more often	20 (11.3)
Partner had less/no difficulty getting erections	18 (10.2)
Partner had less/no sexually transmitted infection	18 (10.2)
Partner had less/no problem of insertion	16 (9.0)
Partner had less/no pain on intercourse	7 (4.0)
Partner had less/no difficulty in ejaculation	5 (2.8)
Partner had less/no genitourinary disease	5 (2.8)

Women could report more than one reason for reduced or improved satisfaction.

satisfaction. Women could report more than one reason for their dissatisfaction. The most common problems included reduced female sexual desire (six), lower male sexual desire (six), male partner had difficulty achieving (three) or maintaining an erection (five). None of the male partners of women who reported reduced sexual satisfaction had any moderate or severe surgically-related adverse events after circumcision.

Table 3 also shows reasons cited for increased female sexual satisfaction by 177 women. The commonest reasons mentioned included better penile hygiene in 28.8% (51/177), more frequent orgasms for the male partner in 25.4% (44/177), male partner wanted sex more frequently, 24.9% (44/177), the male partner had less difficulty maintaining an erection, 14.7% (26/177), and the woman achieved orgasm more frequently, 11.3% (20/177).

## DISCUSSION

This is the first study with a substantial sample size to assess the effect of adult male circumcision on female sexual satisfaction. Over 97% of women reported no change or an improvement in sexual satisfaction, compared to only 3% of women who reported less sexual satisfaction after their partner's circumcision. A study conducted by Coates *et al.* [10] concluded that circumcision had no effect on female partner's perception of sexual satisfaction. However, this study included only 19 women and was conducted in a hospital setting, where men were highly selected for circumcision due to pre-existing medical indications for surgery.

Our findings provide information of importance in designing education messages for circumcision programmes that promote male circumcision as an HIV prevention strategy. In South Africa, men who believed

that women would enjoy sex more with circumcised men were over five times more willing to have the procedure [11]. In the present study, 39.8% of women reported an improvement in sexual satisfaction after circumcision of their partners, and this information can be used to encourage women to accept male circumcision for their partners or children. Our finding that male circumcision is much more likely to improve female sexual satisfaction suggests that it might have social benefits in addition to established health benefits, and addresses previous speculative concerns about the possible adverse effects of male circumcision on female sexual satisfaction.

In conclusion, >97% of women reported no change or an improvement in sexual satisfaction after their partners were circumcised. This finding should be integrated into programme messages to address fears that male circumcision might lead to reduced sexual satisfaction in women partners of circumcised men.

## CONFLICT OF INTEREST

None declared. Source of funding: Gates Foundation.

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**Correspondence:** Godfrey Kigozi, Rakai Health Sciences Program, Entebbe, Uganda.  
e-mail: gkigozi@rhsp.org