



Awareness of Male Partner Circumcision and Women's Health

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Introduction

- Male medical circumcision (MMC) is known to reduce the risk of heterosexual transmission of HIV infection in men by 50-60%.
- MMC has no direct HIV benefit to women although there is some known indirect health benefits to women.
- There are also concerns about MMC and its impact on women's health.

Indirect Benefit to Women

- MMC provides secondary protection against HIV by decreasing the incidence and prevalence of HIV among men.
- There is also a protective benefit of MMC on STI transmission to the female partner:
 - ✓ Women with circumcised partners showed lower rates of genital ulceration, bacterial vaginosis and trichomonas infections.
 - ✓ Decreased risk of cervical cancer due to circumcised partners having lower rates of HPV infection and therefore lower transmission rates to women.

Considerations for Women

- MMC in HIV positive men does not protect women from male to female HIV transmission.
- Transmission of HIV to their female partners was shown to be higher in couples who resumed sex prior to complete wound healing post MMC surgery.

Sexual Risk Compensation

- Women are being educated by health care workers on the indirect benefits of MMC on their health.
- There is therefore a potential of sexual risk compensation among women whose partners are circumcised.

Sexual Risk Compensation in Men

- Men who received circumcisions reported significantly more sexual contacts than the control group (South Africa, Orange Farm).
- Condom use increased , number of partners and unprotected sexual acts decreased from baseline in both control and intervention arms (Kenya, Kisumu).
- Rates of condom use increased in both the intervention and control arms during the study (Uganda, Rakai).

Sexual Risk Compensation in Women

- Women perceived that MMC would increase female's risk of HIV acquisition as a result of her circumcised partner engaging in riskier sexual behavior such as having multiple partners and decrease in condom use (KZN).
- Majority of participants (WHiPT project) perceived that MMC might lead to an increase in gender-based violence (GBV) and stigma for women living with HIV.

MTN 003 Study (VOICE)

- MTN 003 (VOICE) study , a safety and effectiveness study of oral and topical PrEP, collected data from women on their primary partner circumcision status and sexual and behavioral data at prescribed study visits.

Methods

- This is a secondary analysis from the VOICE (MTN-003) trial which enrolled 5029 HIV uninfected women, 18 to 45 years of age, at 15 sites in Africa.
- Participants in the VOICE trial underwent monthly pregnancy, HIV and STI testing at baseline and quarterly visits.
- Socio-demographic data was collected at the screening visit and sexual behaviour data were collected at every study visit.

Study Objectives

- To describe the prevalence of reported male partner circumcision in the VOICE trial.
- To determine whether male partner circumcision is associated with incident STI infection, HIV, pregnancy and risky sexual behaviour in the female participant.

Methods

- Risky sexual behaviour was measured by:
 - Frequency of sex acts in the past week
 - Condom use at last vaginal sex
- The effect of partner circumcision on incident STI, HIV and pregnancy was assessed using Cox regression models.

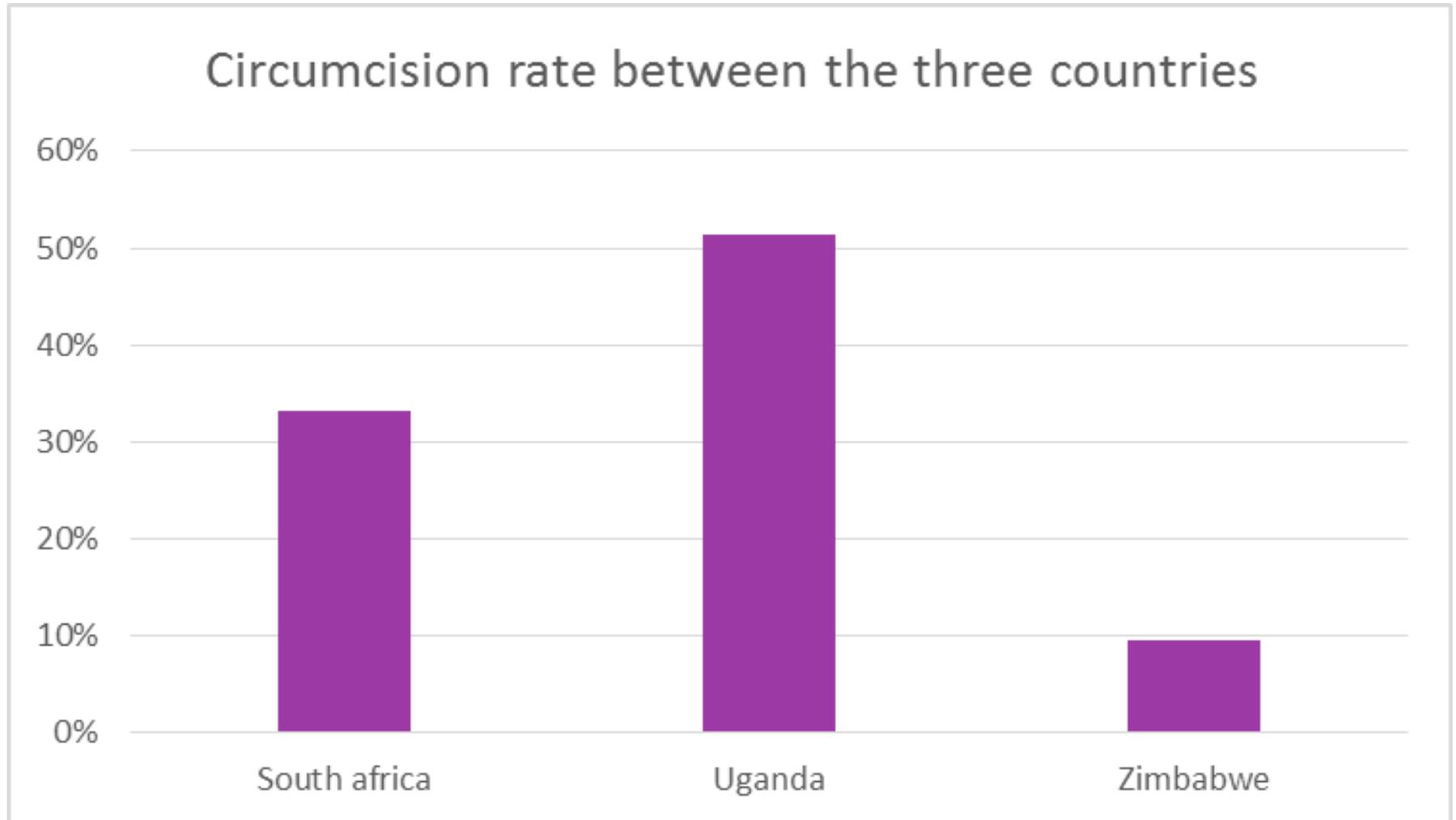
Methods

- Impact of knowledge of partner circumcision on condom usage and frequency of sex was analysed using generalized estimating equation (GEE) models with a logit and log link, respectively.
- Participant age, education, study site and marital status were adjusted for in all analyses.

Prevalence of Circumcision of Male Sexual Partner at Baseline

Circumcision Status of Male Sexual Partner at Baseline (N=4982)	n (%)
Yes, circumcised	1561 (31.3%)
No, uncircumcised	2863 (57.5%)
Do not know circumcision status	558 (11.2%)

Partner Circumcision Rates in South Africa, Uganda and Zimbabwe



Participant Baseline Characteristics by Male Sexual Partner Circumcision Status

Baseline Characteristics	Total (n=4982)	Circumcised (n=1561)	Uncircumcised (n=2863)	Unknown Circumcision Status (n=558)	p-value ¹
Participant Characteristics					
Median age, years (IQR)	24 (21, 29)	24 (21, 29)	25 (21, 29)	23 (20, 26)	<0.0001
Partner Status					
Married	1052 (21%)	257 (16%)	714 (25%)	81 (15%)	<0.0001
Unmarried, has primary sex partner	3930 (78%)	1304 (84%)	2149 (75%)	477 (85%)	
Currently living with partner	1606 (32%)	455 (29%)	1042 (36%)	109 (20%)	<0.0001
Earns own income	2853 (57%)	844 (54%)	1688 (59%)	321 (58%)	0.007
Education³					
Primary or less	388 (8%)	128 (8%)	236 (8%)	24 (4%)	0.005
Secondary or more	4590 (92%)	1432 (92%)	2625 (92%)	533 (96%)	

Participant Baseline Characteristics by Male Sexual Partner Circumcision Status

Baseline Characteristics	Total (n=4982)	Circumcised (n=1561)	Uncircumcised (n=2863)	Unknown Circumcision Status (n=558)	p-value ¹
Participant Characteristics					
Perceived risk of HIV in the next year⁸					0.002
Very worried	3016 (61%)	880 (57%)	1770 (62%)	366 (66%)	
Somewhat worried	832 (17%)	280 (18%)	468 (16%)	84 (15%)	
Not at all worried	1088 (22%)	377 (25%)	609 (21%)	102 (18%)	
Perceived risk of HIV prior to enrollment⁹					0.0004
High risk	930 (41%)	285 (40%)	559 (43%)	86 (36%)	
Moderate risk	404 (18%)	129 (18%)	236 (18%)	39 (16%)	
Low risk	329 (15%)	133 (19%)	159 (12%)	37 (15%)	
No risk	583 (26%)	158 (22%)	347 (27%)	78 (33%)	

Partner Baseline Characteristics by Male Sexual Partner Circumcision

Partner Characteristics					
Baseline Characteristics	Total (n=4982)	Circumcised (n=1561)	Uncircumcised (n=2863)	Unknown Circumcision Status (n=558)	p-value ¹
Median age, years (IQR) ¹⁰	28 (25, 33)	29 (25, 34)	28 (25, 34)	26 (24, 31)	<0.0001
Has other sexual partners					<0.0001
Yes	764 (15%)	266 (17%)	429 (15%)	69 (12%)	
No	1231 (25%)	392 (25%)	741 (26%)	98 (18%)	
Participant does not know	2987 (60%)	903 (58%)	1693 (59%)	391 (70%)	
Provides financial support ¹¹	4148 (83%)	1294 (83%)	2415 (84%)	439 (79%)	0.004
Education ¹²					<0.0001
Primary or less	181 (4%)	53 (3%)	115 (4%)	13 (2%)	
Secondary or more	4480 (90%)	1363 (87%)	2602 (91%)	515 (92%)	
Participant does not know	320 (6%)	145 (9%)	145 (5%)	30 (5%)	

HIV and Pregnancy Incidence

- The overall HIV Incidence rate was 5.67 (5.05,6.33) per 100PY (95% CI). There was no significant difference in HIV incidence between women with circumcised and uncircumcised partners [HR 1.08 (0.83,1.40), p-value=0.59].
- The pregnancy incidence rate between women with circumcised and uncircumcised partners was not significantly different (p-value = 0.500)

Sexually Transmitted Infections

- There was no significant difference in Gonorrhoea and Chlamydia incidence rates between women with circumcised and uncircumcised partners (p-value=0.25 and p-value=0.52 , respectively).

The Effect of Circumcision Status on Risk of Incident Syphilis Infection

Circumcision Status Comparison	Adjusted HR (95% CI)	Adjusted p-value*
Circumcised vs. uncircumcised	0.52 (0.26, 1.02)	0.058
Unknown vs. circumcised	1.95 (0.62, 6.12)	0.254
Unknown vs. uncircumcised	1.01 (0.37, 2.79)	0.983
Circumcised vs. all others	0.52 (0.27, 1.02)	0.055

*From Cox proportional hazards regression model, stratified by site and adjusted for participant age, participant education, and marital status

Association between Sex Frequency and Circumcision Status

Circumcision Status Comparison	Adjusted Mean Estimate (95% CI)	Adjusted p-value*
Circumcised vs. uncircumcised	0.94 (0.90, 0.97)	0.0005
Unknown vs. circumcised	0.98 (0.94, 1.03)	0.510
Unknown vs. uncircumcised	0.92 (0.88, 0.96)	0.0003
Uncircumcised vs. all others	1.07 (1.04, 1.11)	<0.0001

*From GEE model with log link (Poisson) and exchangeable correlation, stratified by site and adjusted for participant age, participant education, and marital status

Association between Circumcision Status and Condom Use during Last Vaginal Sex

Circumcision Status Comparison	Adjusted RR (95% CI)	Adjusted p-value*
Circumcised vs. uncircumcised	1.12 (1.04, 1.21)	0.003
Unknown vs. circumcised	1.13 (1.02, 1.25)	0.018
Unknown vs. uncircumcised	1.26 (1.15, 1.39)	<0.0001
Uncircumcised vs. all others	0.86 (0.80, 0.92)	<0.0001

*From GEE model with logit link and exchangeable correlation, stratified by site and adjusted for participant age, participant education, and marital status

Discussion

- Women in this study reported an overall 31% prevalence of male partner circumcision, similar to the estimated global prevalence of circumcision among males aged 15 years and over (30%).
- The study noted no difference in HIV transmission in women with circumcised and uncircumcised partners.
- Women with circumcised partners showed a significantly reduced risk of syphilis acquisition which is consistent with other studies thus indicating health benefits for both men and their partners.

Discussion

- Participants with circumcised partners reported significantly fewer sex acts in the past 7 days, and used condoms more frequently at the last sex act compared to participants with uncircumcised partners.
- This indicates that women and their circumcised male partners did not engage in riskier sexual practices as a result of being circumcised.

Conclusions

- The benefits of MMC have been shown to extend to women.
- Women with circumcised partners reported less risky sexual behaviour than women with uncircumcised partners.
- Ongoing education of couples on safe sex practices and the benefits of MMC is essential to HIV prevention efforts.

Recommendation

- Include key messages on MMC to ensure women understand that circumcised men have only partial protection from HIV acquisition.
- Empower women to discuss the benefits of MMC for both men and women with their sexual partners.

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