Perceived Risk and Severity of the Uptake of Safe Male Circumcision Services among Young Men Aged 15-24 Years in Rhino Camp Refugees Settlement, Arua District- Uganda

Blate M. David

Cavendish University Uganda

Juliet M. Bandaru

Cavendish University Uganda

Khawa E. Namajja

Cavendish University Uganda

David Kajoba

Cavendish University Uganda

Shallon Atuhare (✉ shallonatuharetairemwa@gmail.com)

Pan African University of Life and Earth Sciences Institute, University of Ibadan <https://orcid.org/0000-0001-5465-9773>

Research Article

Keywords: Circumcision, Male Circumcision, Refugees, Refugees Settlement Camps, Rhino Camp Refugees Settlement, Safe Male Circumcision, HIV/AIDS

Posted Date: May 7th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-449707/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background

Safe male circumcision is a proven cost-effective intervention in reducing the risk of sexual transmission of Human Immunodeficiency Virus /Acquired Immune Deficiency Syndrome among heterosexual individuals by 60%. This study aimed at exploring the perceived risk and severity to the uptake of safe male circumcision among young men aged 15–24 years in Rhino Camp Refugees Settlement, Arua District, Uganda.

Methods

This was a cross-sectional study among 378 respondents, which utilized both quantitative and qualitative approaches with a semi-structured and three focus group discussions conducted among young men aged 15–24 years. Univariate analysis was used to determine the uptake of safe male circumcision. Chi-square test and binary regression model were used to determine the odds ratio at 95% confidence levels of safe male circumcision uptake and other exposure variables. Results from the focus group discussions were analysed thematically.

Results

The prevalence of safe male circumcision uptake was 42.1%. The major factor associated with increased likelihood of safe male circumcision uptake was the perceived benefit of cervical cancer prevention in my partner (AOR = 2.455, 95% CI = 1.278–3.627). Factors associated with reduced likelihood safe male circumcision uptake included: fear of perceived increased risk of meatitis (AOR = 0.726, 95% CI = 0.338–.959), fear that undergoing safe male circumcision is very painful and uncomfortable (AOR = 0.742, 95%, CI = 0.279–1.973). Also, the perception that safe make circumcision is not affordable at most private health facilities (AOR = 0.167, 95%, CI = 0.058–0.478).

Conclusions

Safe make circumcision uptake in Rhino Refugees Settlement is lower than Uganda's national target of 80%. This is attributed to the perceived risks such as perceived risk of infection, pain, irritability, and costs involved. Awareness creation on myths and misconceptions is key to increasing up take of safe make circumcision.

Plain Language Summary

SMC is recommended as a Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS) prevention procedure by World Health Organisation (WHO) and The Joint United

Nations Programme on HIV/AIDS in 2007 (WHO/UNAIDS 2010). This followed research findings of a study in Kenya, Uganda and South Africa in 2004 that indicated that circumcised heterosexual men were approximately 60% less likely to sexually acquire HIV compared to uncircumcised heterosexual men.

The uptake of SMC has been low over the decades due to perceived risks including adhesions, excessive skin removal, cysts, and penile amputation. Others perceive safe male circumcision to be associated with severe bleeding, infections, irritation of the glans and injury to the penis. These are myths and misconceptions that need to be addressed if the prevalence of HIV/AIDS is to be cabbed down.

Background

Safe Male Circumcision (SMC) is the surgical removal of the penile foreskin or tissue, which covers the head of the penis performed by a trained health professional such as a doctor or nurse under safe condition [1]. SMC was recommended as a Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS) prevention procedure by World Health Organisation (WHO) and The Joint United Nations Programme on HIV/AIDS in 2007 [2]. This followed research findings of a study in Kenya, Uganda and South Africa in 2004 that indicated that circumcised heterosexual men were approximately 60% less likely to sexually acquire HIV compared to uncircumcised heterosexual men [3]. The second Random Controlled Trials (RCT) in Uganda's Rakai District studied four thousand nine hundred and ninety-six men aged between 15 and 49. Here, circumcision managed to reduce risk of infection by approximately 51 percent [4]. Reasons for low-risk infections is attributed to the fact that HIV target cells in the prepuce, which tremendously reduced as a result of circumcision. The prepuce may suffer mild trauma during intercourse prompting infection. At the same time, the prepuce harbors organisms that such as *Escherichia coli*, and *Enterococcus avium* and provides a conducive environment for prolonged viral survival [3].

Globally, Male Circumcision (MC) was historically associated with religious and cultural practices. However, SMC has been increasingly adopted in many parts of the world. It is estimated that 38% of the world's males aged 15 years or older are circumcised of which about 62% are Muslims residing mainly in Asia, the Middle East and North Africa, 0.8% are Jewish and 13% are non-Muslim and non-Jewish men living in the USA [5].

In Africa, especially in Northern and Western regions, MC is almost universal. However, its' uptake in other parts varies considerably with low uptake reported in the African countries of Botswana, Namibia, Swaziland, Zambia and Zimbabwe [6]. According to WHO's report in 2018 [6], the prevalence of SMC is reported to be 21% in Malawi, 35% in South Africa, 48% in Lesotho, 20% in Mozambique and more than 80% in Angola and Madagascar. In East and Central Africa, the prevalence varies from almost 15% in Burundi and Rwanda to 70% in Tanzania and 93% in Ethiopia. In Uganda, SMC prevalence among men aged between 15 to 49 years was 27% in 2018, but with high levels of willingness to be circumcised among uncircumcised men. Those who expressed willingness at the time also seemed to be the ones with the largest need for protective measures [7].

A qualitative study in Iringa, Tanzania found that women had strong preferences for circumcised men because of the perception of low risk of infection of HIV from circumcised men, social norms favouring circumcised men, and perceived increased sexual desirability of circumcised men. The health benefits of male circumcision were generally overstated. Several respondents falsely believed that women were directly protected against HIV infection and that the risk of all STIs was profoundly reduced or eliminated in circumcised men [8].

A population-based survey was conducted among purposively selected respondents aged 15–49 to explore barriers and motivating factors to SMC for HIV prevention, and to assess utilization of existing SMC communication channels in Zimbabwe. The survey reported that 68% and 53% of female and male respondents respectively had heard about SMC for HIV prevention. (Hatzold, et al., 2014). Public programs for SMC are available, but they are limited, which make the uptake sometimes little despite the level of awareness. Also, perceived severity such as bleeding and infection, irritation of the glans, injury to the penis and increased Meatitis made uptake of safe male circumcision services low [9].

Uganda's scenario of uptake of safe male circumcision is not far different from other countries in the region, up take is still low despite being free [10]. The country's target by 2015 was to circumcise 4.2 million adults, however, required an effective model to achieve [3]. A study done in Northern Uganda in 2018, indicated that, 42% of their study participants owned a misconception that Voluntary Male Medical Circumcision (VMMC) had an impact on their sexual performance. Similarly, 35% of the same study participants believed that VMMC. contributes to promiscuity [10].

Given the above-ground, the authors purposed to carry out a study on the perceived risk and severity of the uptake of safe male circumcision services among young men aged 15–24 years in Rhino Camp Refugees settlement, Arua district in Uganda. Rhino Camp Refugee Settlement is a Refugee Camp in Arua District in north-western Uganda and has seven zones, which includes Ofua, Omugo, Ocea, Odoibu, Siripi, Tika and Eden. The settlement has about 56,865 people of which 6,824 are young male aged 15–24 years [11]. The health services provided in Rhino Camp Refugee Settlement are VCT services, family planning, protection which encompasses prevention of sexual exploitation and abuse; maternal and child health services. The village health teams and home health promoters are the gateway to dissemination of key information on health services.

Therefore, the study answered the following questions; what perceived risks are associated with the uptake of safe male circumcision among young refugee men aged 15–24 years in Rhino Camp Refugees' Settlement? And, how do these young men aged 15–24 years perceive the severity of uptake of SMC services? The study was carried out from January 2020 to November 2020. It intended to provide scientific evidence that would aid in scaling up safe male circumcision campaign based through advocating for the involvement of community leaders during community sensitization meetings in the various communities on the health benefits of safe male circumcision.

Methods

Study design and settings

The study adopted a cross sectional survey design employing both qualitative and quantitative data collection methods that helped determine perceived risk, and severity associated with the uptake of safe medical circumcision services among young men aged 15–24 year in Rhino Camp Refugee Settlement.

A total of 378 participants took part in the study. These were sampled using probability and non-probability sampling procedures. Participants were assigned unique numbers used for sampling. First, a systematic random sampling was used to establish the sampling interval by dividing the required number of participants present by the number of participants to be interviewed. The sampling interval was determined by dividing the population (N) and sample size (n). Sample size (n) where; study population is the total number of young male refugees in Rhino camp refugees' settlement which was 6,824, and the sample size calculated was 378. Therefore, sampling interval was equal to $6824/378$, which yielded 18.

A researcher-administered semi-structured questionnaire was the primary instrument used to collect quantitative data from the participants. Purposive sampling technique was used in selecting participants for the Focus Group Discussion (FGD). Three FDG sessions were conducted and were guide by open-ended questions designed in accordance with the specific objectives of the study. Willingness to undergo SMC services was a dependant variable with a two-scale option; yes or no, coded as "1" or "0" whereas the perceived risks, and perceived severity, were independent variables, measured using a 4-point Likert scale of responses of "strongly agree", "agree", "and disagree" and "strongly disagree" respectively.

The data in Microsoft Excel was then exported into Statistical Package of Social Sciences (SPSS) version 21 for analysis. Descriptive statistics were used to summarize data on respondents' characteristics and presented as; graphs, charts, and frequency distribution tables are appropriately used.

Numerical data were summarized into descriptive statistics of mean, median, and standard deviation and categorical data into frequencies and percentages. At bivariate level, to determine whether there are differences in participant perceived risk, and severity, with SMC uptake, the Chi-squared Fishers exact test was used for categorical variables. At 0.05 level of statistical significance. At multivariate analysis, all statistically significant variables at bivariate level of analysis were subjected to binary logistic regression analysis and the results were reported as crude odds ratio with corresponding 95% confidence intervals and p- values. Second, a multi-nominal logistic regression analysis was considered for all variables at unadjusted analysis that are statistically significant, to establish those that were independently associated with the outcome.

Analysis of qualitative data followed a framework approach (Ritchie and Spencer 2002), which provided a systematic structure, allowing for a priority and emergent codes. The transcripts were read and reread for the researcher to familiarize themselves with the data. Open coding was used to avoid biases in the development of codes based on the researchers' prior knowledge, beliefs and perceptions about SMC. Descriptive codes were also used to identify basic expressions found in FGD transcripts and categorized into sub-themes and themes.

Results

Socio-demographic characteristics.

Table 1
Socio-demographic characteristics of the participants

Variable	Category	Frequency	Percentage
		n = 378	%
Age	15–16 years	102	27.0
	17–18 years	148	39.2
	19–20 years	61	16.1
	21–22 years	33	8.7
	23–24 years	34	9.0
Level of Education	Primary	184	48.7
	Secondary	182	48.1
	Tertiary	12	3.2
Years spent in this camp	< 2 years	44	11.6
	2–5 years	273	72.2
	> 5 years	61	16.1
Marital status	Single or never married	349	92.3
	Married	29	7.7
Religious affiliation	Catholic	77	20.4
	Pentecostal/Anglican	280	74.1
	Moslem	21	5.6

In reference to Table 1, majority (39.2%) of the participants were in the age group of 17–18 years, while the least were in the age group of 21–22. Most of the respondents (48.7%) had primary education while the least (3.2%) had attained tertiary level of education. On the duration spent in the Rhino camp Refugee Settlement, majority, 72.2% of the participants had spent 2–5 years in the camp, majority (92.3%) of the participants were single or never married. Almost 3 out of 4 (74.1%) of the participants were affiliated to Pentecostal or Anglican by religion.

Uptake of safe male circumcision

Figure 1 shows that 159/378 (42.1%) of the participants had undergone safe male circumcision while the majority 219/378 (57.9%) had not undergone safe male circumcision.

Perceived risks and uptake of safe male circumcision services

Table 2
perceived risks associated with uptake of safe male circumcision services

Variable	Category	Frequency	Percentage
		n = 378	%
I fear that safe male circumcision may cause my penis to be amputated accidentally.	Strongly disagree	66	17.5
	Disagree	110	29.1
	Neutral	26	6.9
	Agree	130	34.4
	Strongly agree	46	12.2
I fear excessive removal of foreskin	Strongly disagree	56	14.8
	Disagree	92	24.3
	Neutral	22	5.8
	Agree	133	35.2
	Strongly agree	75	19.8
There is a possibility that I may develop adhesions when circumcised.	Strongly disagree	71	18.8
	Disagree	115	30.4
	Neutral	53	14.0
	Agree	100	26.5
	Strongly agree	39	10.3
I worry a lot about developing cysts after safe male circumcision	Strongly disagree	71	18.8
	Disagree	108	28.6
	Neutral	39	10.3
	Agree	117	31.0
	Strongly agree	43	11.4

Majority (34.4%) of the participants agreed that they feared that safe male circumcision might cause their penis to be amputated, (35.2%) of the participants agreed that they feared excessive removal of foreskin.

Three in every ten (30.4%) of the participants disagreed that there is possibility that they may develop adhesions when circumcised and 117/378 (31.0%) agreed that they worried a lot about developing cysts after safe male circumcision. This is indicated in Table 2.

Table 3

Perceived risk factors associated with uptake of safe male circumcision services at bivariate analysis.

Variable	Category	SMC uptake		COR (95% CI)	p-value
		Yes (%)	No (%)		
I fear safe male circumcision that my penis will be amputated.	Strongly disagree	18(11.3%)	48(21.9%)	1.0	.003*
		55(34.6%)	55(25.1%)	.375(.194-.724)	.680
	Disagree	6(3.8%)	20(9.1%)	1.250(.433-3.612)	.020*
		58(36.5%)	72(32.9%)		.027*
	Agree	22(13.8%)	24(11.0%)	.466(.245-.885)	
				.409(.185-.904)	
I fear excessive removal of foreskin	Strongly disagree	18(11.3%)	38(17.4%)	1.0	.136
		41(25.8%)	51(23.3%)	.589(.294-1.181)	.224
	Disagree	4(2.5%)	18(8.2%)		.144
		58(36.5%)	75(34.2%)	2.132(.629 - 7.220)	.035
	Agree	38(23.9%)	37(16.9%)	.613(.317-1.182)	
				.461(.224-.948)	
There is a possibility that I may develop adhesions when circumcised.	Strongly disagree	26(16.4%)	45(20.5%)	1.0	.249
		52(32.7%)	63(28.8%)	.700(.382-1.284)	.760
	Disagree	18(11.3%)	35(16.0%)		.177
		47(29.6%)	53(24.2%)	1.123(.533-2.368)	.649
	Agree	16(10.1%)	23(10.5%)	.652(.350-1.214)	
				.831(.373-1.849)	
I worry a lot about developing cysts after safe male circumcision	Strongly disagree	26(16.4%)	45(20.5%)	1.0	.359
		47(29.6%)	61(27.9%)	.750(.406-1.387)	.219
	Disagree	19(11.9%)	20(9.1%)		.408
		50(31.4%)	67(30.6%)	.608(.275-1.343)	.756
	Agree	17(10.7%)	26(11.9%)	.774(.422-1.419)	
				.884(.405-1.926)	

Safe Male Circumcision services may cause amputation of the penis (Crude OR = 0.375, 95% CI .194-.724). Agreeing that they fear that safe male circumcision may cause amputation of the penis (Crude OR = 0.566, 95% CI .245-.885) and strongly agreeing that they fear that safe male circumcision may cause amputation of the penis (Crude OR = 0.409, 95% CI .185-.904) were significantly associated with uptake of safe male circumcision (Refer to Table 3)

Perceived severity and uptake of safe male circumcision services

Table 4
perceived severity and its influence on the utilization of safe male circumcision services at Univariate Analysis

Variable	Category	Frequency	Percentage
		n = 378	%
I fear bleeding and infection after safe male circumcision.	Strongly disagree	93	24.6
		110	29.1
	Disagree	20	5.3
	Neutral	89	23.5
	Agree	66	17.5
	Strongly agree		
Safe male circumcision may result to irritation of the glands.	Strongly disagree	68	18.0
		131	34.7
	Disagree	41	10.8
	Neutral	88	23.3
	Agree	50	13.2
	Strongly agree		
I fear injury to the penis during the procedure.	Strongly disagree	76	20.1
		143	37.8
	Disagree	32	8.5
	Neutral	69	18.3
	Agree	58	15.3
	Strongly agree		
I fear increased risk of meatitis (inflammation of the glans penis)	Strongly disagree	90	23.8
		112	29.6
	Disagree	33	8.7
	Neutral	99	26.2
	Agree	44	11.6
	Strongly agree		

Majority 143/378 (37.8%) disagreed that they feared injury to the penis during the procedures while 131 /378 (34.7%) disagreed that SMC may result into irritation of the penis. A good number 112/378 (29.6%) disagreed that they feared the risk of meatitis while 110/378 (29.1%) disagreed that they feared bleeding and infection after SMC as indicated in Table 4.

Table 5
Perceived severity factors associated with uptake of safe male circumcision services at bivariate analysis.

Variable	Category	SMC uptake		COR (95% CI)	p-value
		Yes (%)	Yes (%)		
I fear bleeding and infection after safe male circumcision.	Strongly disagree	33(20.8%)	60(27.4%)	1.0	.091
		52(32.7%)	58(26.5%)	.613(.348-1.081)	.188
	Disagree	4(2.5%)	16(7.3%)		.058
		44(27.7%)	45(20.5%)	2.200(.679-7.125)	.615
	Agree	26(16.4%)	40(18.3%)	.563(.310-1.019)	
				.846(.411-1.623)	
Safe male circumcision may result to irritation of the glands.	Strongly disagree	30(18.9%)	38(17.4%)	1.0	.983
		58(36.5%)	73(33.3%)	.9940(.551-1.792)	.305
	Disagree	14(8.8%)	27(12.3%)		.585
		35(22.0%)	53(24.2%)	1.523(.681-3.401)	.990
	Agree	22(13.8%)	28(12.8%)	1.195(.629 – 2.270)	
				1.005(.482-2.096)	
I fear injury to the penis during the procedure.	Strongly disagree	30(18.9%)	46(21.0%)	1.0	.798
		59(37.1%)	84(38.4%)	.929(.526-1.638)	.911
	Disagree	13(8.2%)	19(8.7%)		.688
		25(15.7%)	44(20.1%)	.953(.411-2.213)	.072
	Agree	32(20.1%)	26(11.9%)	1.148.586–2.249	
				.530(.265-1.059)	

Variable	Category	SMC uptake		COR (95% CI)	p-value
		Yes (%)	Yes (%)		
I fear increased risk of meatitis (inflammation of the glans penis)	Strongly disagree	28(17.6%)	62(28.3%)	1.0	.020*
		53(33.3%)	59(26.9%)	.503(.281-.898)	.142
	Disagree	15(9.4%)	189(8.2%)	.542(.239-1.228)	.082
	Neutral	43(27.0%)	56(25.6%)		.106
	Agree	20(12.6%)	24(11.0%)	.588(.324-1.069)	
	Strongly agree			.542(.258-1.139)	

Increased fear of Meatitis (Crude OR = 0.503, 95% CI .281-.898) was significantly associated with uptake of safe male circumcision at bivariate analysis as indicated in Table 5.

Table 6

Perceived risk, severity, and uptake of safe male circumcision services among young men aged 15–24 years at multivariate analysis

Variable	Category	Crude PR (95% CI)	p-value	Adjusted OR (95% CI)	p-value
I fear increased risk of meatitis (inflammation of the glans penis)	Strongly disagree	1.0	.020*	1.0	.012*
	Disagree	.503(.281-.898)	.142	.726(.338-.959)	.412
	Neutral	.542(.239-1.228)	.082	.636(.216-1.872)	.450
	Agree	.588(.324-1.069)	.106	.741(.340-1.615)	.883
	Strongly agree	.542(.258-1.139)		.932(.364-2.388)	
SMC can prevent cervical cancer in my partner	Strongly disagree	1.0	.437	1.0	.213
	Disagree	.815(.486-1.366)	.458	1.547(.779-3.073)	.204
	Neutral	.782(.409-1.497)	.115	1.729(.742-4.028)	.537
	Agree	.559(.271-1.152)	.012*	1.346(.524-3.458)	.004*
	Strongly agree	.314(.127-.779)		2.455(1.278–3.627)	
To me undergoing SMC is very painful and uncomfortable	Strongly disagree	1.0	.006*	1.0	.954
	Disagree	.458(.261-.802)	.514	.976(.431-2.213)	.827
	Neutral	.686(.222-2.123)	.589	1.169(.289-4.721)	.550
	Agree	.839(.444-1.586)	.035*	2.649(1.100-6.379)	.030*
	Strongly agree	.458(.221-.946)		.742(.279-1.973)	

Variable	Category	Crude PR (95% CI)	p-value	Adjusted OR (95% CI)	p-value
I cannot afford cost of doing SMC at most private health facilities	Strongly disagree	1.0	.003*	1.0	.131
	Disagree	.394(.216-.722)	.006*	.538(.240-1.203)	.015*
	Neutral	.292(.120-.706)	.006*	.248(.080-.765)	.038*
	Agree	.393(.201-.768)	.000*	.385(.156-.948)	.001*
	Strongly agree	.223(.104-.478)		.167(.058-.478)	

Fear of risk of meatitis, SMC preventing cervical cancer in partners, undergoing SMC being painful and uncomfortable, being unable to afford the cost of doing SMC at most private health facilities were found to be significantly associated with uptake of SMC services at multivariate analysis (Refer to Table 6).

Presentation of the qualitative data from the FGDs

Facilitating factors for SMC uptake

Participants in all FGDs cited increased protection from HIV and other STIs as an advantage of SMC. Similarly, it was consistently reported that circumcised men are cleaner and more hygienic than those who are uncircumcised. The concept of cleanliness manifests itself in the FGDs in two disparate ways

SMC improves general hygiene of the penis, including the reduction of foul odors. FDG 1

SMC reduces the transmission of STIs via improved cleanliness due to the removal of the foreskin. Most men can spend the entire day without showering. Such a man harbors a lot of dirt under the prepuce, unlike a circumcised man. Therefore, that is the source of syphilis, HIV and other STIs. .. it is easy to contract them, especially if the woman is not ready for sex. FDG 2

In FGDs, circumcision was described as protective against HIV acquisition because it reduced “bruising.” However, there were inconsistencies with the description of how bruising affected HIV transmission. When bruising was mentioned in the FGDs, participants reported that circumcision reduced bruising of the penis and subsequently, risk of HIV transmission.

“A circumcised person cannot easily get HIV. He penetrates into the vagina smoothly, but a person who is not circumcised can easily get infected. Since the foreskin keeps on moving up and down, he gets bruises and the blood mixes up, thus being infected with HIV if the woman is infected”. A participant in FDG 3.

However, when discussed in the FGDs, SMC was described as protective against HIV transmission through reduced bruising of the vagina:

The foreskin keeps a lot of dirt. After removing the foreskin, the woman does not get bruises so much. The bruises are caused by the small size of the woman's entry point because the skin rubs so much on it if one is not circumcised. FDG 1

In several of the FGDs, participants connected SMC with cancer prevention. The mechanisms through which circumcision reduces the risk of cancer were described in varying manners.

A male participant explained the relationship between circumcision, pregnancy, and cancer:

"We were taught that the foreskin keeps germs, so if you have sex with a pregnant woman before circumcision, it may cause cancer. One is clean after circumcision to the partner, which helps her deliver with no problem". Participant in FDG 2

The perceived advantages and disadvantages of Safe Male Circumcision

General fear of pain regarding circumcision was the concern mentioned most often. Young men expressed concern over pain specifically during the SMC procedure but they also feared pain during recovery due to potentially poor suturing or a surgical mishap resulting in a deformity. A few teenagers thought that pain could result from a lack of follow-up wound assessment by SMC health providers. Concern over pain during morning erections was another common concern. Some men and women feared that pain during recovery would cause a man to miss work and lose income.

"We are afraid because those who had gone for the circumcision were saying that it was very painful when the foreskin is cut, during suturing, and then after that you were unable to perform your normal duties as usual. Being a person with dependents, it was not appealing to me." Said one of the male respondents. FDG 1

However, concern about pain was not universal; those who were not circumcised at the time of their interviews said that they were not concerned about pain.

"No, no, right now I am 23, and there is no pain I will feel when I become circumcised because I have endured painful things so there is none I will feel when I become circumcised". A participant in FDG 3

Circumcised participants were asked about pain during the post-circumcision recovery period. All of the circumcised men reported that they managed their pain well during recovery by following the post-circumcision instructions given to them by their SMC providers primarily, taking prescribed painkillers and urinating when waking with a morning erection. They said their circumcision experiences were not as painful as they feared prior to the procedure.

“The provider who performed the circumcision gave me some pain killers, and I used them as prescribed to me. The drugs really helped me such that the pain was bearable...I did not have too much pain.” One of the respondents in FDG 1 aged 18 years.

Discussion

Perceived risks associated with the uptake of safe male circumcision services among young refugee men aged 15–24 years.

This study found out that SMC uptake in respondents who agreed that their health is at risk due to infection, pain and discomfort ($p < 0.05$). The possible explanation for this could be the low knowledge levels about the protective benefits of SMC among respondents who disagreed. These results are similar to Bailey [12] who noted that having knowledge that SMC is a means of HIV prevention was linked with increased uptake of the service. It is further argued that based on the available information on epidemiology and clinical information, SMC will have a significant contribution to HIV/AIDS prevention and spread. [12]. On the other hand, in a study conducted in Botswana [13], findings from the study indicate that being circumcised and the willingness and urge of people to be circumcised was linked to the likelihood of a person having more than two sexual partners. It is also argued that it was also linked to a person having sex with multiple sexual partners and whereas this was a case linked to Botswana, this is the same scenario that applies to Uganda. This therefore, answers the misconceptions regarding sexual drive or performance reducing as a result of SMC. The indications from the study conducted as well as the arguments presents it as an item that has no effect on the sexual drive or performance of a person.

Perceived severity associated with the uptake of safe male circumcision services among young refugee men aged 15–24 years.

In this study, respondents agreed that being circumcised reduces their chances of getting the HIV infection ($p < 0.05$). This result agrees with previous finding from earlier studies by Hatzold [9] who reported that a higher perception of HIV/STI risks among men aged 15–49 years was associated with uptake of SMC and this is probably because SMC has been found to reduce chances of contracting HIV infection by 60%. This means stakeholders should provide clear messaging on SMC and bring this service closer to young men aged 15–24 years in Refugees Settlements. The findings suggest that when men perceive the risk of HIV and the protective effect SMC provides, they are more likely to take up circumcision.

Furthermore, this study found out no relationship between perceived fear of serious side effects upon undergoing SMC and its uptake. This is probably because of the few reported cases of adverse events that occur. This finding is inconsistent with a study by with Bailey [9] who noted that respondents expressed concern of over bleeding in medical, traditional or religious circumcisions. Another study by CDC[14] also identified the fear of negative outcomes (pain, death, damage to penis, wound not healing well) as a major SMC uptake barrier. However, this same study indicates that with SMC, the surgical risks

associated are extremely low and the benefits gained far exceed the risks. In addition to that, the researchers argue that SMC has been proven to have no long-term adverse effects especially to the infants on physiological or sexual outcomes.[14]

This study found that uptake of SMC among the participants was affected by the perceived fear of receiving HIV test results as a requirement among those who had SMC. This is probably because many men would not wish to know their HIV status. This is in line with Govender [15] who identified barriers to SMC which included fear of HIV testing that precedes circumcision and Skolnik [16] who found that one of the key perceived barriers to SMC was compulsory HIV testing (fear of HIV testing and knowing one's sero status).

Limitations

There is currently insufficient evidence of individual or public health benefit to recommend male circumcision for HIV-positive men and since persons with severe immunodeficiency may have increased complication rates following surgery, male circumcision in HIV-infected men should only be recommended when it medically indicated.

Conclusion

Safe Male Circumcision uptake in Rhino Refugees Settlement is lower than Uganda's national target of 80%. This is attributed to the perceived risks such as perceived risk of infection, pain, irritability, and costs involved. To enhance SMC uptake among young men aged 15–24 years in Refugees Settlement the current SMC programs should unpack the benefits to this subpopulation and redesign specific cues to action to increase uptake of SMC. Healthcare providers should portray simpler and positive messages to improve perceptions about the benefits of SMC.

Abbreviations

AIDS

Acquired Immune Deficiency Syndrome

FDG

Focus Group Discussion

HIV

Human Immuno-deficiency Virus

RCT

Randomised Clinical Trail

SMC

Safe Male Circumcision

STIs

Sexually Transmitted Infections

Declarations

Acknowledgement

Authors would like to acknowledge the moral and academic support by the departmental members especially during oral defence of this study.

Funding

This study was not funded.

Availability of data and materials

Data is available and will be provided on request by the Journal publisher.

Authors' contribution

This study was conducted by BMD under the supervision of JMB, and KEN. The manuscript was written by DK and SA.

Ethical Approval and Consent to participate

Participants gave both verbal and written consent to participate in the study.

Consent to publish

All authors have given their consent to publish this paper

Competing Interests

Authors have no competing interests to disclose

References

1. G. of Uganda Ministry of Health. "Government of Uganda Ministry of Health SAFE MALE CIRCUMCISION POLICY," 2007.
2. UNAIDS. "Joint Strategic Action Framework to Accelerate the Scale-Up of Voluntary Medical Male Circumcision for HIV Prevention in Eastern and Southern Africa," 2016.
3. Galukande M, et al., "Mass safe male circumcision: early lessons from a Ugandan urban site - a case study," vol. 8688, pp. 1–13, 2012.

4. Hallett TB, et al. Will circumcision provide even more protection from HIV to women and men? New estimates of the population impact of circumcision interventions. *Sex Transm Infect.* 2011;87(2):88–93. doi:10.1136/sti.2010.043372.
5. Morris BJ, Hankins CA. Effect of male circumcision on risk of sexually transmitted infections and cervical cancer in women. *Lancet Glob Heal.* 2017;5(11):e1054–5. doi:10.1016/S2214-109X(17)30386-8.
6. WHO Progress brief. “Voluntary medical male circumcision for HIV prevention; Men making a difference for HIV prevention,” pp. 2017–2018, 2018.
7. Ministry of Health Kampala Uganda., “Uganda AIDS Indicator Survey (AIS) 2011,” pp. 1–252, 2011.
8. Kibira SPS, Daniel M, Atuyambe LM, Makumbi FE, Sandøy IF. Exploring drivers for safe male circumcision: Experiences with health education and understanding of partial HIV protection among newly circumcised men in Wakiso, Uganda. *PLoS One.* 2017;12(3):1–16. doi:10.1371/journal.pone.0175228.
9. Hatzold K, et al., “Barriers and Motivators to Voluntary Medical Male Circumcision Uptake among Different Age Groups of Men in Zimbabwe: Results from a Mixed Methods Study,” vol. 9, no. 5, pp. 1–7, 2015, doi: 10.1371/journal.pone.0085051.
10. Nanteza BM, Serwadda D, Kankaka EN, Mongo GB, Gray R, Makumbi FE. “Knowledge on voluntary medical male circumcision in a low uptake setting in northern Uganda,” pp. 1–7, 2018.
11. UNHCR. “Rhino Camp Refugee Settlement in Ayua District Draft Report,” p. 1, 2018.
12. Westercamp N, Bailey RC. Acceptability of male circumcision for prevention of HIV/AIDS in sub-Saharan Africa: A review. *AIDS Behav.* 2007;11(3):341–55. doi:10.1007/s10461-006-9169-4.
13. Keetile M, Rakgoasi SD. Male circumcision; willingness to undergo safe male circumcision and HIV risk behaviors among men in Botswana. *Etude la Popul Africaine.* 2014;28(3):1345–61. doi:10.11564/0-0-630.
14. Morris BJ, Krieger JN, Klausner JD. CDC’s Male Circumcision Recommendations Represent a Key Public Health Measure. *Glob Heal Sci Pract.* 2017;5(1):15–27. doi:10.9745/GHSP-D-16-00390.
15. George G, et al. Barriers and facilitators to the uptake of voluntary medical male circumcision (VMMC) among adolescent boys in KwaZulu-Natal, South Africa. *African J AIDS Res.* 2014;13(2):179–87. doi:10.2989/16085906.2014.943253.
16. Skolnik L, Tsui S, Ashengo TA, Kikaya V, Lukobo-Durrell M. A cross-sectional study describing motivations and barriers to voluntary medical male circumcision in Lesotho. *BMC Public Health.* 2014;14(1):1–10. doi:10.1186/1471-2458-14-1119.

Figures

Figure 1

Showing the proportion of the young refugees who have undergone SMC (n=378)