

Influences Impacting the Acceptance of Voluntary Medical Male Circumcision among Medical Students Pursuing Bachelor's Degrees at Kampala International University Teaching Hospital

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ABSTRACT

The primary objective of this investigation was to identify the determinants influencing the adoption of voluntary medical male circumcision services among bachelor's male medical students at Kampala International University Teaching Hospital (KIU-TH). The study employed a cross-sectional descriptive design over a three-month period within Bushenyi District-Uganda, specifically at KIU-TH situated in Ishaka town. This hospital, a private institution, serves as a prominent teaching center for various medical programs. A sample of 372 bachelor's male medical students participated in the study, responding to simple pretested semi-structured questionnaires. Analyzing the collected data via SPSS version 20 revealed a mean age of 28 ± 5.504 years, ranging from 19 to 50 years. Predominantly, participants were in their 4th year of study (47.1%), unmarried (76.1%), identified as Christians (78.2%), and held Ugandan nationality (79.6%). Notably, 38.7% of students reported being circumcised, with 68.1% undergoing voluntary medical male circumcision (VMMC). However, among uncircumcised individuals, only 25.0% expressed willingness to undergo VMMC. All participants demonstrated awareness and comprehension of VMMC, with 96.5% acknowledging its role in HIV prevention and 77.2% recognizing potential complications associated with VMMC. Regarding attitudes, 68.5% held positive views on VMMC, highlighting that pain during the procedure is manageable (40.6%) and recovery is relatively swift (72.8%). Despite this, the uptake of Voluntary Medical Male Circumcision remained below national targets. While a majority exhibited favorable attitudes toward VMMC, a smaller fraction displayed willingness to engage in this procedure. The findings underscore the necessity for evidence-based health education initiatives and structured VMMC campaigns, specifically targeting medical students, to enhance the uptake of VMMC services.

Keywords: Male circumcision, Healthcare providers, Male medical students, HIV, Health education.

INTRODUCTION

Circumcision is one of the oldest surgical procedures, dating from the Neolithic age. It is widely practiced throughout the world for religious reasons (e.g., Muslims and Jews), as part of traditional cultures among tribal groups in Africa (e.g., Kikuyu in Kenya and Bagishu in Uganda); and for medical reasons both preventive and therapeutic [1, 2]. The majority of

procedures are performed in infancy or childhood, but in some cultures, circumcision is part of initiation rituals marking the transition from adolescence to adulthood (e.g., Xhosa of South Africa) [3]. About 665 million men (30% of all men) over 15 years of age worldwide are circumcised of whom approximately two-thirds (68%) are Muslim, 0.8% are Jewish,

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and 13% are men in the United States who are not Muslim or Jewish [4]. On one hand, there are communities that do not traditionally circumcise and those who see such campaigns to take up male circumcision (MC) as an affront to their culture [5]. Voluntary medical male circumcision (VMMC) is the surgical removal of the foreskin of the penis by trained healthcare providers after the client's consent [6]. WHO and UNAIDS recommend MC as an emphasis for efficacious intervention for HIV prevention in countries and regions with heterosexual epidemics, high HIV, and low circumcision prevalence. This is further backed up by the evidence that the inner aspect of the foreskin is highly susceptible to only HIV infection but also other Sexually Transmitted Infections [7, 8]. 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 [9]. VMMC is done among adult males of ages 18 years to 50 years who consent to the procedure. In Africa, it has been found that male circumcision (MC) can reduce the risk of HIV infection by 50% to 60% among heterosexual men [10]. Within Mazowe District, Zimbabwe, the prevalence of male circumcision was noted to be higher than the 10% that was reported by the WHO in 2009 [11]. In Kenya, the level of uptake of VMMC rates at 75% as per a study done in the Kibera division [12]. In Uganda, the male circumcision program was launched in September 2010, targeting 4,200,000 (80 percent) of uncircumcised men by 2015. By March 2012, however, only a total of

380,000 men (9.0 %) had actually been circumcised under the program [13]. Male Circumcision is more common in urban than rural. It is more common in Kampala than elsewhere in the country except for the eastern and western regions where MC is carried out as a rite of passage and maturity transition among the Bagisu, Sabiny, and Bakonzo, and 80% of men are reportedly circumcised [5].

Voluntary medical male circumcision is a critical HIV prevention tool [14, 15]. After its launch in 2010 in Uganda, VMMC was intended to achieve 80% male circumcision by the year 2015 as part of a comprehensive HIV prevention strategy [16]. However, slower progress has been observed since then including a 9.0% reported uptake in two years after the launch [13]. Uganda is second (after South Africa) among the African countries that require a relatively high uptake of VMMC [17]. Despite being faithful to one sexual partner, using a condom for sexual intercourse with a person whom one is not sure of their safety and abstinence from sex [6] can help prevent STIs, Voluntary Medical Male Circumcision made part of HIV prevention programs in regions with a generalized HIV epidemic and a low level of male circumcision has shown commendable results regarding HIV prevention [12]. However, among medical students particularly at Kampala International University's western campus, the level of uptake of VMMC is still incomprehensible. Thus, this study sought to determine the level of utilization of VMMC and the associated factors among bachelor's medical students at KIU-WC.

METHODOLOGY

Study design

The study employed a cross-sectional descriptive study design to collect both quantitative and qualitative data.

Area of Study

The study was conducted at KIU-WC a private international university located in Ishaka Town about 3km from Bushenyi district headquarters. The university's location lies approximately 360 kilometers (220 mi), by road, southwest of

Kampala, the largest city in the country and its geographical coordinates are 0° 32' 29.04"S, 30° 8' 25.80"E (Latitude: 0.5414; Longitude: 30.1405). The university offers tertiary learning from certificate to PhD levels in various disciplines of higher learning including, health sciences, humanities, biomedical sciences, education, basic sciences, and computer sciences. It has up to about four thousand students with majority being the health

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science students. Among the health science students, a big proportion are males. It has a teaching hospital in its vicinity where medical students in their clinical years are taught practical skills.

Study population

Male bachelor's medical students at Kampala International University Teaching Hospital.

Inclusion criteria

Male bachelor's medical students at KIU-TH who were present at the time of data collection and consented to participate were included.

Exclusion criteria

Male bachelor's medical students who declined consent and those who were mentally or physically ill were excluded.

Sample size determination

The sample size of respondents was determined using the Kish Leslie sample size formula (Kish Leslie, [18] as given below:

$$n = z^2 p(1-p)/E^2$$

Where;

n = sample size required.

p = 59%, Proportion of males who were circumcised in a study by Miro et al. [19] in Entebbe, Uganda.

z = Standard normal deviation, i.e. 1.96, set at 95% confidence level

d = desired degree of accuracy i.e. 5%.

Therefore, $n = 1.96 \times 1.96 \times 0.59 \times (1 - 0.59) / 0.05 \times 0.05$

$n = 3.8416 \times 0.59 \times 0.41 / 0.0025$

n = 372 medical students were sampled.

Sampling techniques

Using simple random sampling male bachelor's medical students were selected from three schools i.e. School of Clinical Medicine and Dentistry, the School of Allied Health Sciences, and the School of Nursing until the desired sample size was achieved.

Data collection methods and management

Data was collected using a pre-tested standardized self-administered semi-

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Out of the 372 sampled bachelor's medical students, 144 (38.7%) were

structured questionnaire in English developed to collect the data needed so as to fulfill the objectives. The questionnaire contained both closed and open-ended questions.

Data analysis

Using IBM Statistical Package for the Social Sciences (SPSS) version 20 data was analyzed and analyses were presented in the form of cross-tabulation, Bi-variate and multi-nominal logistic regression correlations, and also in graphs, frequencies, and percentages at a 95% confidence interval and 5% degree of precision.

Quality control

To ensure quality work, the inclusion and exclusion criteria were strictly adhered to and data forms were double-checked for completeness by the principal investigator. The reliability of the questionnaire was attained through pre-testing. Respondents who didn't understand the question had the option of inquiring from the researcher. Collected data was checked for consistency and completeness and proper storage of the questionnaires was ensured.

Ethical considerations

Approval was sought from the Research Ethics Committee of Kampala International University, Western Campus, and ethical concerns were addressed. Restricted access to the data collection forms by persons other than the principal researcher was ensured. No names or any identifying information were used in the study. The respondents were properly informed upon this subject and neither were they forced or influenced to answer any question as per the researcher's interest. Verbal consent was obtained from the respondents who were first informed about the importance of the study.

RESULTS

circumcised while 228 (61.3%) were not. Of those who were circumcised, 98 (68.1%) were circumcised via VMMC, while 46 (31.9%) were not circumcised through VMMC and among those who were not

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circumcised, the majority (75.0%) were not willing to circumcise via VMMC with only 57 (25.0%) who were willing to

circumcise through VMMC as illustrated in *table 1* below.

Table 1; showing uptake and acceptance of VMMC among bachelor's medical students

Variable	Frequency, N/372	Percentage
Are you circumcised		
Yes	144	38.7
No	228	61.3
If yes, where you circumcised via VMMC?		
Yes	98	68.1
No	46	31.9
N/A (228)	-	-
If no, would you wish to circumcise via VMMC?		
Yes	57	25.0
No	172	75.0
N/A (144)	-	-

Source: Field data

Students socio-demographic characteristics

From *Table 2* below, the minimum age was 19 years and the maximum was 50

years. The mean age was 28±5.504 and the median age was 26 years.

Table 2; shows age of the bachelor's medical students

VARIABLE	Median	Mean	Std. Deviation	Variance	Minimum	Maximum
Age	26	28.35	5.504	30.293	19	50

Source: Field Data

Regarding their socio-demographic characteristics, the majority (47.1%) of the students were in their 4th year of study followed by those in the 3rd year (24.2%), those in 5th year (18.5%), and then those in the 2nd year (10.2%). Regarding their marital status, the majority were single (283), followed by those who were

married (79) and those who were divorced/separated (10). Many of the students were Christians (78.2%) while Muslims were only 20.7% and those of other religious afflictions were 1.1%. The biggest of the students were Ugandans (79.6%) and only 20.4% were foreigners as shown in *table 3* below.

Table 3; showing students' socio-demographic features

VARIABLE	FREQUENCY, n/372	PERCENTAGE
Year of Study		
Second year	38	10.2
Third year	90	24.2
Fourth year	175	47.1
Fifth year	69	18.5
Marital Status		
Single	283	76.1
Married	79	21.2
Divorced/Separated	10	2.7
Religious Affiliation		
Christian	291	78.2
Muslim	77	20.7
Others	4	1.1
Nationality		
Ugandan	296	79.6
Non-Ugandan	76	20.4

Source: Field Data

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Students knowledge regarding

Voluntary Medical Male Circumcision

From Table 4 below, all students had ever heard about VMMC and could explain what it means and the majority had heard about it through media (52.2%), followed by those through peers (22.3%), from school (12.9%), from other sources (8.6%) and then from the community. 96.5% of the students knew that male circumcision can help prevent HIV while only 1.6% and

1.9% didn't know and were not sure respectively. Regarding their opinion about why VMMC is carried out, the majority (90.6%) mentioned that it is done to prevent HIV and other STIs followed by those who mentioned it due to hygiene purposes (8.3%) and then those with other reasons (1.1%). The biggest proportion (77.2%) knew that VMMC can result in complications while 20.7% said and 2.2% were not sure.

Table 4; shows students' knowledge regarding VMMC

Variable	Frequency, N/372	Percentage
Have you ever heard about VMMC?		
Yes	372	100.0
No	00	0.0
Where did you hear it from?		
From school	48	12.9
Through media	194	52.2
From community	15	4.0
From peers	83	22.3
Other sources	32	8.6
Can explain what VMMC means?		
Yes	372	100.0
No	00	0.0
Male circumcision helps prevent HIV		
Yes	359	96.5
No	6	1.6
Not sure	7	1.9
Why do you think VMMC is carried out?		
HIV and other STI prevention	337	90.6
Hygiene reasons	31	8.3
Other reasons	4	1.1
VMMC can result in complications		
Yes	287	77.2
No	77	20.7
Not sure	8	2.2

Source: Field Data

Student's attitude and perception towards Voluntary Medical Male Circumcision

Out of the 372 sample medical students, 255 (68.5%) had a positive attitude towards VMMC while 115 (31.5%) had a negative attitude. 30.4% agreed with the statement that pain during VMMC is unbearable, 40.6% disagreed and 29.0% were not sure. While 72.8% disagreed that

it takes long to heal after VMMC, 21.8% agreed however 5.4% were not sure. More than (57.0%) agreed that male circumcision reduces sexual pleasure in men, with 29.0% and 14.0% disagreeing or being not sure respectively. Over ninety percent of the students disagreed with the statement that VMMC is against my religion as illustrated in Table 5 below.

Table 5; shows students' attitude and perceptions toward VMMC

VARIABLE	FREQUENCY, n/372	PERCENTAGE
How do general feel about VMMC?		
Good practice	255	68.5
Bad practice	115	31.5
Pain during VMMC is unbearable		
Yes	113	30.4
No	151	40.6
Not sure	108	29.0
It takes long to heal after VMMC		
I agree	81	21.8
I disagree	271	72.8
Not sure	20	5.4
Male Circumcision reduces sexual pleasure in men		
I agree	212	57.0
I disagree	108	29.0
Not sure	52	14.0
VMMC is against my religious practice		
Yes	34	9.1
No	338	90.9

Source: Field Data

DISCUSSION

Uptake of VMMC

This current study has discovered that 38.7% of the students were circumcised of which 68.1% were circumcised via VMMC. However, among those who were not circumcised only 25.0% were willing to circumcise via VMMC. These findings were slightly lower as compared to discoveries in Kenya, where the level of uptake of VMMC was high at 75% as per a study done among adult men in the Kibera division [12]. However, slightly higher as compared to results in Entebbe Uganda where the prevalence of VMMC among adolescent boys was 59% [19] and another by Mukama and colleagues where about half (50.6%) of the respondents had undergone VMMC at the health care facility [20]. This improvement may be attributed to the fact that these are medical students who are believed to have awareness and easy accessibility to the services. However, with such assumed awareness and accessibility, the level of uptake is still below target. Considering willingness to uptake VMMC, this current rate (25.0%) is slightly lower as related to an earlier study carried out in Rakia District Central Uganda which showed that 27% of the studied population was willing to undergo circumcision. This low rate may be attributed to the existence of

misconceptions towards VMMC even among medical professionals which is a big hindrance to the overall level of uptake across all social and economic sects.

Knowledge towards VMMC

Findings from this study have shown that all students have ever heard about VMMC and knew the meaning of VMMC. It has also revealed that 96.5% knew that male circumcision prevents HIV transmission and 77.2% knew that VMMC can result in complications. This was similar to a study among healthcare providers in Haiti where the majority (90%) of the participants said that MMC would reduce STIs [21] and in another study carried out in Uganda, most of the men who were health educated about VMMC were aware of the safety of VMMC during surgery [22]. On the contrary, however, these findings are contradictory as related to earlier discoveries including one in Botswana where the majority of the respondents were not aware that medical male circumcision reduces the risk of HIV infection [23], in Eastern Uganda, where some men never realized the value in medical male circumcision as far as HIV infection prevention is concerned when they are advised to continue using condoms after the procedure, in Namibia

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where the majority (84.6%) of the respondents did not out rightly know that circumcision reduces the risk of HIV infection [24] and in Rakai, Uganda where most males never had adequate knowledge about MMC and the few who had knowledge was not translated into actual utilization of MMC available in the area due to misconceptions that they had about the efficacy of the equipment used to perform the service [25]. This current level of knowledge regarding VMMC is comparable to findings by Hoffman et al. [26] in South Africa which revealed that majority (93.3%) of the respondents had heard about male circumcision, and many (64.4%) knew of VMMC from someone in the community who was circumcised, others from a family member (46.2%) while 28.8% heard from government campaigns and less than one fifth through formal contact with the health care system either directly or through the media [26].

Attitude and Perception towards VMMC

This study has shown that 68.5% of the students have a positive attitude towards VMMC and majorities reported that pain during VMMC is bearable (40.6%), that VMMC reduces sexual pleasure among men (57.0%) and that it does not take long to heal after VMMC (72.8%). Similar discoveries have been found in China

CONCLUSION

Uptake of Voluntary Medical Male Circumcision is still below national target; and much as more than half of the students had a positive attitude towards voluntary medical male circumcision, a small proportion of them were willing to circumcise through voluntary medical male circumcision.

Recommendations

Basing on the study findings above, the following are recommended to help improve level of acceptance and uptake of voluntary medical male circumcision across all social groups:

where it was concluded that circumcision decreases sexual enjoyment due to loss of nerve endings [27], in South Korea where majority of the respondents believed that men were twice more likely to experience diminished sexuality rather than improved sexuality when they are circumcised [28]. Another study at Mutare Rural District Zimbabwe also revealed that majority 204 (87%) of the respondents believed that circumcision diminishes sexual pleasure which would eventually lead to loss of their partners [28]. On the contrary however other studies revealed that VMMC doesn't adversely affect the sexual function among men [29] and another study in Nyanza Province Kenya, showed that most respondents thought that the removal of the fore skin of the penis enhances sexual pleasure which would help them to strengthen their marriages [30]. Similar beliefs were still obtained in Uganda where most of the respondents never believed that male circumcision diminishes sexual pleasure [5]. These current findings may be attributed to the fact that more than half of the respondent has a positive attitude and had circumcised via VMMC, an indication of acceptance and uptake. Thus responding to the questions was from personal experience and not from peer or other misconceptions.

- i. Evidence based health education should be offered even among the medical workers including health care students as a way to increase acceptance and eventual uptake of voluntary male medical circumcision.
- ii. The hospital and campus management through it co-curricular activities should schedule yearly or quarterly campaigns for voluntary medical male circumcision involving even the students.

REFERENCES

1. Kigozi, G., Musoke, R., Kighoma, N., Watya, S., Serwadda, D., Nalugoda, F., & Wawer, M. J. (2014). Effects of medical male circumcision (MC) on plasma HIV viral load in HIV+ HAART naïve men; Rakai, Uganda. *Plos one*, 9(11), e110382.
2. Loevinsohn, G., Kigozi, G., Kagaayi, J., Wawer, M. J., Nalugoda, F., Chang, L.

- W., & Grabowski, M. K. (2021). Effectiveness of voluntary medical male circumcision for human immunodeficiency virus prevention in Rakai, Uganda. *Clinical Infectious Diseases*, 73(7), e1946-e1953.
- 3 Gray, R. H. (2019). Clinical Chemistry. Male circumcision for HIV and STI Prevention: A Reflection. *Clinical Chemistry*, 65(1):15-18.
- 4 Hankins, C. (2007). Male Circumcision: Implications for Women as Sexual Partners and Parents. *Reproductive Health Matters*, 15(29): 62-67.
- 5 Wilcken, A., Miiro-Nakayima, F., Hizaamu, R.N. et al. (2010). Male circumcision for HIV prevention - a cross-sectional study on awareness among young people and adults in rural Uganda. *BMC Public Health*, 10, 209. <https://doi.org/10.1186/1471-2458-10-209>
- 6 WHO (2010). WHO technical advisory group on innovations in male circumcision, meeting report, 30 September - 2 October 2014, Geneva, Switzerland.
- 7 Alum, E. U., Ugwu, O. P. C., Obeagu, E. I., Aja, P. M., Okon, M. B., & Uti, D. E. (2023). Reducing HIV Infection Rate in Women: A Catalyst to reducing HIV Infection pervasiveness in Africa. *International Journal of Innovative and Applied Research*, 11(10):01-06. DOI: 10.58538/IJIAR/2048.
- 8 Obeagu, E.I., Alum, E.U., & Obeagu, G.U. (2023). Factors Associated with Prevalence of HIV Among Youths: A Review of Africa Perspective. *Madonna University Journal of Medicine and Health Sciences*, 3(1): 13-18. <https://madonnauniversity.edu.ng/journals/index.php/medicine>
- 9 Rodriguez, V. J., Chahine, A., de la Rosa, A., Lee, T. K., Cristofari, N. V., Jones, D. L., et al. (2020). 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.*, 10(4):970-977. doi: 10.1093/tbm/ibz048.
- 10 Yang, X., Abdullah, A. S., Wei, B., Jiang, J., Deng, W., Qin, B., et al. (2012). Factors Influencing Chinese Male's Willingness to Undergo Circumcision: A Cross-Sectional Study in Western China. *PLoS ONE*, 7(1): e30198. <https://doi.org/10.1371/journal.pone.0030198>.
- 11 Rupfutse, M., Tshuma, C., Tshimanga, M., Gombe, N., Bangure, D., & Wellington, M. Factors associated with uptake of voluntary medical male circumcision, Mazowe District, Zimbabwe, 2014. *Pan Afr Med J.*, 19:337. doi: 10.11604/pamj.2014.19.337.5245.
- 12 Nyaga, E. M., Mbugua, G. G., Muthami, L., & Gikunju, J. K. (2014). Factors influencing voluntary medical male circumcision among men aged 18-50 years in Kibera division. *East African Medical Journal*, 91(11): 407-413.
- 13 Muhamadi, L., Ibrahim, M., Wabwire-Mangen, F., Peterson, S., & Reynolds, S. J. (2013). Perceived medical benefit, peer/partner influence and safety and cost to access the service: client motivators for voluntary seeking of medical male circumcision in Iganga district eastern Uganda, a qualitative study. *Pan Afr Med J.*, 15:117. doi: 10.11604/pamj.2013.15.117.2540.
- 14 Alum, E. U., Ugwu, O. P.C., Obeagu, E. I., & Okon, M. B. (2023). Curtailing HIV/AIDS Spread: Impact of Religious Leaders. *Newport International Journal of Research in Medical Sciences (NIJRMS)*, 3(2): 28-31. <https://nijournals.org/wp-content/uploads/2023/06/NIJRMS-32-28-31-2023-rm.pdf>
- 15 Alum, E. U., Obeagu, E. I., Ugwu, O. P.C., Aja, P. M., & Okon, M. B. (2023). HIV Infection and Cardiovascular diseases: The obnoxious Duos. *Newport International Journal of Research in Medical Sciences (NIJRMS)*, 3(2): 95-99. <https://nijournals.org/wp-content/uploads/2023/07/NIJRMS-3-295-99-2023.pdf>.

- 16 Galukande, M., Duffy, K., Bitega, J. P., Rackara, S., Bbaale, D. S., Nakaggwa, F., et al. (2014). Adverse Events Profile of PrePex a Non-Surgical Device for Adult Male Circumcision in a Ugandan Urban Setting." *PLOS ONE*, 9(1): e86631.
- 17 Njeuhmeli, E., Forsythe, S., Reed, J., Opuni, M., Bollinger, L., Heard, N., et al. (2011). Voluntary Medical Male Circumcision: Modeling the Impact and Cost of Expanding Male Circumcision for HIV Prevention in Eastern and Southern Africa. *PLoS Med.*, 8(11): e1001132. <https://doi.org/10.1371/journal.pmed.1001132>
- 18 Wiegand, H., & Kish, L. (1968). Survey Sampling. John Wiley & Sons, Inc., New York, London 1965, IX + 643 S., 31 Abb., 56 Tab., Preis 83 s. *Biometrische Zeitschrift*. 10, 88-89. <https://doi.org/10.1002/bimj.19680100122>
- 19 Miiro, G., DeCelles, J., Rutakumwa, R., Nakiyingi-Miuro, J., Muzira, P., Ssembajjwe, W, et al. (2017). Soccer-based promotion of voluntary medical male circumcision: A mixed-methods feasibility study with secondary students in Uganda. *PLoS ONE.*, 12(10): e0185929. <https://doi.org/10.1371/journal.pone.0185929>
- 20 Mukama, T., Ndejjo, R., Musinguzi, G., & Musoke, D. (2015). Perceptions about medical male circumcision and sexual behaviours of adults in rural Uganda: a cross sectional study. *Pan Afr Med J.*, 22:354. doi: 10.11604/pamj.2015.22.354.7125.
- 21 Devieux, J.G., Saxena, A., Rosenberg, R., Klausner, J.D., Jean-Gilles, M., Madhivanan, P., Gaston, S., Rubens, M., Theodore, H., & Deschamps, M.M. (2015). Knowledge, attitude, practices and Beliefs about Medical Male Circumcision (MMC) among a sample of Health Care Providers in Haiti, *PLOS ONE*, 10: e0134667.
- 22 Gray, R. H., Kigozi, G., Serwadda, D., Makumbi, F., Nalugoda, F., et al. (2009). The effects of male circumcision on female partners' genital tract symptoms and vaginal infections in a randomized trial in Rakai, Uganda. *Am J Obstet Gynecol.*, (1):42.e1-7. doi: 10.1016/j.ajog.2008.07.069.
- 23 Tapera, R., Kebofe, T., Tumoyagae, T., & January, J. (2017). Factors associated with uptake of voluntary medical male circumcision among University of Botswana undergraduate male students. *Int J Health Promot Educ.*, 55(5-6):333-342. doi: 10.1080/14635240.2017.1394796
- 24 Ngodji, T. K. (2014). Knowledge, attitudes and practices of male circumcision for HIV prevention among voluntary counseling and testing clients in Onandjokwe District Hospital, Namibia [Master's thesis on the Internet; School of Public Health, Faculty of Community and Health Sciences, University of the Western Cape;]. c2010. http://etd.uwc.ac.za/bitstream/handle/11394/2576/Ngodji_MPH_2010.pdf?sequence=1
- 25 Gray, R., Kigozi, G., Kong, X., Ssempiija, V., Makumbi, F., Watty, S., et al. (2012). The effectiveness of male circumcision for HIV prevention and effects on risk behaviors in a posttrial follow-up study. *AIDS*, 26(5):609-15. doi: 10.1097/QAD.0b013e3283504a3f.
- 26 Kaufman, M. R., Smelyanskaya, M., Van Lith, L. M., Mallalieu, E. C., Waxman, A., Hatzhold, K., et al. (2016). Adolescent Sexual and Reproductive Health Services and Implications for the Provision of Voluntary Medical Male Circumcision: Results of a Systematic Literature Review. *PLOS ONE*, 11: e0149892.
- 27 Mantell, J. E., Smit, J., Saffitz, J. L., Milford, C., Morsery, N., Mabude, Z., Tesfay, N., et al. (2013). Medical male circumcision and HIV risk: perceptions of women in a higher learning institution in KwaZulu-Natal, South Africa. *Sexual Health*, 10, 112-118.
- 28 Chiringa, I. O., Ramathuba, D. U., & Mashau, N. S. (2016). Factors

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- contributing to the low uptake of medical male circumcision in Mutare Rural District, Zimbabwe. *Afr J Prim Health Care Fam Med.*, 8(2):e1-6. doi: 10.4102/phcfm.v8i2.966.
- 29 Shacham, E., Godlonton, S., & Thornton, R. L. (2014). Perceptions of Male Circumcision among Married Couples in Rural Malawi. *Journal of the International Association of Providers of AIDS Care (JIAPAC)*. 13(5):443-449. doi:10.1177/2325957413508319
- 30 Herman-Roloff, A., Otieno, N., Agot, K., Ndinya-Achola, J., & Bailey, R. C. (2011). Acceptability of medical male circumcision among uncircumcised men in Kenya one year after the launch of the national male circumcision program. *PLOS ONE*, 6(5):e19814. doi:10.1371/journal.pone.0019814.

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