

Assessment of willingness to uptake male circumcision and associated factors among male students, south west Ethiopia

Abstract

Background: Male circumcision has been shown to reduce the risk of transmission of HIV. As there was low level of circumcision and high prevalence of HIV/AIDS in Gambella, this study intends to identify predictors of willingness to uptake circumcision among indigenous male college students.

Methods: A cross-sectional study was conducted among randomly selected 314 male college students who were selected using simple random sampling technique with self-administered questionnaire from March 27-30, 2014. The data were entered in to computer and analyzed using SPSS for windows version 16.0. Finally, logistic regressions analyses were used to identify independent predictors of willingness to uptake circumcision. To determine any association between the variables; we computed confidence interval of 95% at P. value <0.05.

Result: Three hundred fourteen [94%] of them completely filled and return the questionnaire; 99[31.6%] of them didn't get circumcised and 130[41.4%] of male students believed that they could suffer rejection from their community if they would uptake circumcision. After multivariate logistic regression was employed, the result showed that; students who believed that they get rejected from society if circumcised were less likely to uptake circumcision 0.03 [AOR=.03, 95% CI: 0.01-0.12]. The other result showed that, as age of students increases by one year the odd of willingness to uptake circumcision also increases by 0.84 and the result was statistically significant [AOR=0.84, 95% CI: 0.71-0.99]. Perceived threat was also significantly associated and students who perceived HIV/AIDS as a high threat to them were about 1.28 times more likely willing to uptake circumcision [AOR=1.28, 95% CI: 1.10-1.53]. The other predictor variable was knowledge of students; per a unit increases in total score of knowledge the odds of willingness to uptake circumcision was increased by 1.5 folds [AOR=1.5, 95% CI: 1.13-2.08].

Conclusion: High perceived threat, knowledge, age and fear of rejection by society were the main predictors of willingness to uptake circumcision among male students. Therefore, designing communication strategies that directly address these factors should be implemented. Men who were willing to uptake circumcision should be provided access to high-quality male circumcision surgical services. It is also highly recommended providing accurate information that would increase the perceived threat of adolescents; reinforcement of messages regarding the importance of HIV risk-reduction strategies. Finally addressing these issues of adolescents at school or different institutional levels might be crucial and easier than shifting population-level norms around male circumcision in future strategies.

Keywords: Willingness, uptake, male, students, circumcision, HIV/AIDS

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Introduction

Male circumcision is one of the oldest and common surgical procedures. It is a procedure in which all or part of the foreskin covering the head of the penis is removed by making a surgical cut around the head of the penis. It has been performed for cultural, religious, social and medical reasons.¹ A research conducted in sub-Saharan Africa; Uganda, Kenya and South Africa showed that male circumcision protects against HIV as well as reduces the incidence of other sexually transmitted infections, including genital ulcers, human papilloma virus, and Chlamydia in female partners of men.²⁻⁴ WHO/UNAIDS recommended the adoption of male circumcision as part of the comprehensive strategy to reduce heterosexually-acquired HIV infection in countries with high HIV prevalence and low levels of male circumcision.⁵ Impact and costing estimates suggest that, by

scaling up medical male circumcision to reach 80% of males (15–49) years in fourteen African countries by 2015, and maintaining such coverage until 2025, helps to averted 4 million HIV potential infections by 2025.⁶ Researchers have noted significant variation in HIV prevalence in certain African and Asian countries that seemed to be associated with levels of male circumcision in the community. In areas where circumcision is common, HIV prevalence tends to be lower, and conversely areas of higher HIV prevalence overlapped with region where male circumcision is not commonly practiced.⁷

Approximately 30% of the world's males aged 15 years or older are circumcised, of these, around two thirds are Muslims living 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 United States of America. In Southern Africa nations, the prevalence of adult male

circumcision is rather low and estimated to be around 15% in countries like Swaziland, Zambia and Zimbabwe.¹ According to 2011 Ethiopia Demographic and Health Survey, Ethiopia has one of the highest (92%) circumcised male populations in Africa. Male circumcision is close to universal in most of its regions, except in Gambella and SNNP regions 76 and 79 percent respectively.⁸ Specifically from Gambella region population; the prevalence of male circumcision for three indigenous ethnic groups Agnuak, Mejenger and Neur were 12.3%, 1.7%, and 6.8% respectively, which is significantly very low as compared to the national and other regional population; even it is incomparable within the same region but different ethnic groups. Despite increasing circumcision facilities in the region and there is sufficient strong epidemiological data suggesting that male circumcision can play a significant role in reducing HIV from females to males, the prevalence to uptake male circumcision is very low in these ethnic groups⁹ Due to this strong evidence Ethiopia started male circumcision services in this region in different health facilities in late 2009.¹⁰ Considering the high prevalence of HIV in Gambella region (6.5%) as compared to the national which was 1.5 percent,¹⁰ identifying factors deterring the willingness of adult male circumcision is play paramount value in the fight against HIV infection among males and their spouses. Although some national survey had been done to know the prevalence of the male circumcision in the region, there is no clear figure or evidence that shows the prevalence to uptake male circumcision among indigenous ethnic groups of the region. Again there is no any study that has been done yet in Gambella region more specifically on these ethnic groups (traditionally non circumcising society) that assess their perception towards willingness to uptake male circumcision and its predictors. That is the main reason motivated us to conduct the research in this area and on this particular population using HBM as our study conceptual framework.

Finally we used Health belief model [HBM] as our conceptual frame work, because this model is mainly focused on people's beliefs about the severity of a disease and their susceptibility to it which in turn influenced their willingness to take preventive action. Additionally this model represents one of the most widely used conceptual frameworks for these types of health behaviors. So, we assumed that male students are expected to uptake circumcision service to prevent themselves from HIV/AIDs if they perceived themselves as susceptible to HIV/AIDs, believe that it has potentially serious consequences, perceived that the available course of action would be beneficial and anticipate that the barriers to take action would be outweighed by the benefits. Additionally, if the students perceived that the readiness to take action (perceived susceptibility and perceived benefits) could be potentiated by factor like cues to instigate action as well as if a student estimates that a given behavior will lead to certain outcomes or self-efficacy.¹¹⁻¹³ As such, HBM is by far the most appropriate conceptual frame work than others for this specific study.

Methods and material

The study was carried out in Gambella Town, which is located 777 km away from Addis Ababa, capital of Ethiopia. It is the capital city of the Gambella regional state characterized by hot and humid climate. The main ethnicities of the region are Neur [46.65%], the Agnuak [21.17%], Amhara [8.42%], Kafficho [5%], Oromo [4.83%], Kambata [1.44%], Mezhenger [4%], Shakicho [2.27%], Tigre [1.32%] and other ethnic groups predominantly from southern Ethiopia. Based on the 2007 Ethiopian National Population and Housing Census, the population of the town is projected to be about 39,022, with

male 20,790 and female 18,232. One hospital and one health center which providing male circumcision free of charge routinely and in campaign. In this region there were four Colleges, two high school and four elementary schools. In the academic year of 2014, there were a total of 3826 students enrolled in four colleges and this study was conducted among male students from indigenous ethnic groups in March 27-30, 2014.

Study design and sampling

A quantitative cross-sectional study was conducted among 314 uncircumcised male students. The study populations were sampled males from indigenous ethnic groups from four Colleges. Sample size was determined by using single population proportion formula. Since our aim was to know the perception of male students of indigenous ethnic groups [Nuer, Agnuak, Mejanger, Como and Opo] about their willingness to uptake circumcision we preferred to have data which is done only on these specific groups in the region. Unfortunately there was no previous study done about willingness to uptake circumcision among this culturally uncircumcised ethnic group, therefore, the sample size was calculated by assuming their prevalence of willingness to uptake male circumcision was approximately 50% with 95% confidence level and 5% margin of error.

- I. $n =$ where; $n =$ sample size; $d =$ acceptable margin of error $= 5\%$
- II. $z =$ Standard variant [1.96] which correspond to 95% confidence level
- III. $P =$ population proportion $= 50\%$ [0.5]-Using this formula, the sample size was 385. Finite population correction formula was used since the total population is less than 10,000, which was 1181. The final sample size with 15% for non response rate was 334 participants.

Sampling procedure

Initially, profile of all students was taken from each college registrar office and students were identified by their ethnic groups to get the study population. There were 3826 students in four colleges; from these 1181 of them were indigenous. Then the identification number of these indigenous male students who were 15-24 ages was identified from the roster and listed to use it as a sampling frame. Finally, the final number of participants who were included in the study was selected by lottery methods from the roster using simple random sampling technique.

Measurements

An anonymous, structured, self administered interview questionnaire was developed after reviewing relevant literatures on key variables.¹⁴⁻²¹ The instrument was comprised dimensions on socio-demographic factors, knowledge of male circumcision, socio-cultural factors and constructs of health belief model. The socio-demographic part of the questionnaire contained 'yes/no/ and unknown' answers options, multiple response questions and opinion questions.

Socio-cultural belief

Was measured by three questions like the belief that respondent think they could lose their ethnic identity by being circumcised, belief of considering male circumcision as an embarrassing procedure in their community, belief of suffering rejection from their society by accepting circumcision and all questions contained 'yes or no' answer

options. Knowledge of willingness to uptake circumcision: was measured by number of correct answers a respondent gives to five questions. Health belief model constructs were measured by different items including perceived susceptibility [four items], perceived severity [seven items], perceived benefit [nine items], perceived barriers [ten items], perceived self efficacy [four items], cues to action [eight items] and willingness to uptake circumcision [five items]. All Likert scale questions were measured after sum up all items score, and higher score reflecting higher perception towards willingness to uptake circumcision. To get the direct influence of perceived susceptibility and perceived severity, we sum up the items of these two constructs to get perceived threat and in the final model we used perceived threat as a predictor variable of willingness to uptake male circumcision by students. Willingness to uptake circumcision was measured by a question; “would you willing to be circumcised?” with ‘Yes and No’ response. If Respondents answer as “Yes” for this item, then, they considered as willingness to uptake circumcision.

Data collection technique

Structured and self administered interview questionnaire were used. The data facilitators received three days of intensive training prior to the pretest and an additional one day of training was given with the final version of the questionnaire before the start of the actual data collection. Close supervision were implemented throughout the data collection period. Filled questionnaires were checked for accuracy in daily base.

Data processing and analysis

After data were collected, it entered in double, checked for missing values and outliers and finally analyzed using SPSS for windows version 16.0 [SPSS Inc. version 16.1, Chicago, Illinois]. First, descriptive statistical analyses were carried out and the frequencies of variables were determined, the crude and adjusted odds ratios with 95% confidence interval at P. value <0.05 were computed to determine any association between the variables. Bivariate analysis to measure the strengths of associations, and finally multivariate analysis were done to adjust for the independent predictors of willingness to uptake circumcision.

Data assurance, quality and management

Data quality was ensured during instrument development, collection, entry and analysis. The questionnaire first translated to Amharic language and back translated to English before data collection and different translator was used to keep the consistence of the questionnaire. Facilitators were trained about the purpose of the study and how to administer the questionnaire. The instrument was pretested on sample of 5% students other than selected college students for this study. The reliability coefficient for each subscale was calculated using Cronbach’s alpha. The reliability coefficient of Health Belief Model constructs for this study was 0.84, 0.82, 0.74, 0.83 and 0.89 for susceptibility, severity, benefits, barriers and self-efficacy respectively.

Ethical consideration

Before the study was initiated, ethical approval and clearance was obtained from the Jimma University Ethical Clearance Board. The necessary permission was obtained from Regional Health Bureau of Gambella region and its four Colleges. Informed consent was obtained from the study participants after explaining the purpose of

the study. Participants were assured that their name will not be stated, data will be kept confidential used only for research purpose and anonymous. They also informed that they are not forced to answer the entire question and they can withdraw at any time if they don’t want to participate.

Result

Socio-demographic characteristics of male students

Of 334 adolescents included in the study, complete data were available for 314, providing a response rate of 94%. The mean age of the students was 22±1.6. From a total of 314 students, 185[58.9%] were single. From total students, 149[47.5%] of them were ethnically Nuer and 156[49.7%] were following protestant religion. Regarding family’s occupational status, 161[51.3%] of them were farmers and 185[58.9%] of students’ family were married in their marital status (Table 1).

Table 1 Socio-demographic characteristics of male students in Gambella region, South west Ethiopia, March, 2014

Variables	Frequency [N= 314]	Percentage [%]
Age		
1. 15 - 24	256	81.5
2. >24	58	18.5
Ethnicity		
1. Nuer	149	47.5
2. Agnuak	102	32.5
3. Mejang	33	10.5
4. Como	16	5.1
5. Opo	14	4.5
Religion		
1- Protestant	156	49.7
2- Catholics	105	33.4
3- Orthodox	25	8
4- Adventist	17	5.4
5- Islam	11	3.5
Parents Curent occupation		
1- Farmer	161	51.3
2- No occupation	65	20.7
3- Employed - governmental/private	43	13.7
4- Civil servant	25	8
5- Merchant	20	6.4
Marital Status of the Family		
1- Married	185	58.9
2- Single	55	17.5
3- Divorced	31	9.9
4- Cohabiting	43	13.7

Socio - Cultural beliefs on willingness to uptake circumcision

From total participants 86[27.4%] of them believed that they could lose their ethnic identity by being circumcised, one hundred forty seven [60.2%] believed that male circumcision is an embarrassing practice in their community and 105[33.4%] believed that they could suffer rejection from their community by accepting to be circumcised. This study also found that about 215[68.5%] of male students were willing to uptake circumcision (Table 2).

Table 2 Socio cultural beliefs of male students on willingness to uptake circumcision, Gambella region; south west Ethiopia, March, 2014

Variables	Frequency [N= 314]	Percentage [%]
Lose of Identity if circumcised		
1- Yes	86	27.4
2- No	228	72.6
Circumcision is embarrassing act		
1-Yes	147	46.8
2- No	167	53.2
Fear of rejection if circumcised		
1- Yes	105	33.4
2- No	209	66.6
Willingness to uptake circumcision		
Yes	215	68.5
No	99	31.5

Perception of male students on willingness to uptake circumcision

The perception of male students on willingness to uptake circumcision was addressed using health belief model constructs and all the constructs were assessed through Likert scale and treated as continuous variables. The mean scores for perceived susceptibility, perceived severity, perceived barrier, perceived benefit, self-efficacy and cues to action were summarized in Table 3.

Predictors of willingness to uptake circumcision among male students

On bivariate analysis, the factors that were found to be significant and independently associated with willingness to uptake circumcision at $P < 0.05$ were; high perceived threat, get rejection from community, age, father's educational levels, lose of identity if circumcised and knowledge of students. Multivariate logistic regression was employed to identify the predictors of willingness to uptake circumcision. After controlling the effect of all other relevant factors, the result showed that perceived threat, get rejected from community, age and knowledge of students were significantly associated with willingness

to uptake circumcision. Students who believed that they get rejected from society if circumcised were less likely to be circumcised; and the likely hood of willingness to uptake circumcision decreased by 0.03 [AOR=.03, 95% CI: 0.01-0.12]. The other result showed that, as age of students increases by one year the odd willingness to uptake circumcision also increases by 0.84 and the observed difference was statistically significant [AOR=0.84, 95% CI: 0.71-0.99]. From the constructs of health belief model perceived threat was significantly associated with willingness to uptake circumcision. Students who perceived HIV/AIDS as a high threat to them were about 1.28 times more likely willingness to uptake circumcision [AOR=1.28, 95% CI: 1.10-1.53]. The other predictor variable was knowledge of students about the importance of male circumcision to prevent HIV/AIDS; per a unit increases in total score of knowledge the odds of willingness to uptake circumcision also increased by 1.5 folds [AOR=1.5, 95% CI: 1.13-2.08] (Table 4).

Table 3 The distribution of mean scores of students' perceptions on willingness to uptake circumcision in Gambella region, Southern Ethiopia, March, 2014

Variables	Minimum	Maximum	Mean[Std. Deviation]
Age	18	36	22.04[2.81]
Knowledge	2	11	6.45[2.50]
Perceived Susceptibility	4	23	14.47[4.69]
Perceived Severity	10	34	23.44[5.88]
Perceived Benefits	11	43	29.38[7.02]
Perceived Barriers	11	48	33.35[8.12]
Self - Efficacy	2	10	6.67[2.52]
Cues to Action	4	20	13.70[4.01]

Discussion

This study provides an insight into the significant of circumcision as protective factors of HIV in different dimension to predict willingness to uptake circumcision among male students. According to our study 80.9% of respondents correctly defined male circumcision as removal of the entire foreskin. We also found that 68.5% of male students were willing to uptake circumcision. On Ethiopia Demographic and Health Survey conclude that, Ethiopia has one of the highest circumcised male populations in Africa.⁸ Study in sub-Sahara explained that male circumcision plays a significant role in reducing the risk of heterosexual HIV transmission.⁴ This study also revealed that 29.3% of college students were not willing to uptake circumcision. Contrary to the above evidences, in some parts of Ethiopia people are not willing to uptake circumcision; in southern national regions 76 % and in Gambella region 79 % percent didn't uptake male circumcision.⁸ The possible reasons behind not willing to uptake circumcision could be, circumcision is against their culture, fear of pain during the operation and perceived fear of decreasing sexual pleasure. Studies in other African countries also showed that fear of pain; decreasing sexual pleasure, cultural reasons as well as lack of access to health care were mainly listed barriers to undergo circumcision.^{22,23}

Table 4 Bivariate and multivariate analysis of factors associated with willingness to circumcision among male students of Gambella region, Southern Ethiopia, March, 2014 [N = 314]

Willingness to Uptake Circumcision				
Variables	No [%] [N=99]	Yes [%] [N=215]	COR [95%, CI]	AOR [95%, CI]
Ethnicity				
1. Nuer	54[54.5]	95[44.2]	1	
2. Agnuak	28[28.3]	74[34.4]	1.50[.86-2.60]	
3. Mejanger	6[6.1]	27[12.6]	2.56[.99-6.58]	
4. Como	6[6.1]	10[4.7]	.95[.33-2.75]	
5. Opo	5[5.1]	9[4.2]	1.02[.33-3.21]	
Religion				
1. Protestant	47[47.5]	109[50.7]	1	
2. Catholics	30[30.2]	75[34.9]	1.08[.62-1.86]	
3. Orthodox	11[11.1]	14[6.5]	.55 [.23-1.30]	
4. Adventistes	8[8.1]	9[4.2]	.48 [.18-1.33]	
5. Islam	3[3.0]	8[3.7]	1.15 [.30-4.53]	
Curent occupation of Parents				
1. Farmer	50[50.5]	111[51.6]	1	
2. No occupation	16[16.1]	49[22.8]	1.38[.71-2.65]	
3. Employed	17[17.2]	26[8.6]	.68[.34-1.38]	
4. Civil servant	7[7.1]	18[8.4]	1.16[.45-2.95]	
5. Merchant	9[9.1]	11[5.1]	.55[.25-1.41]	
Marital Status of The Family				
1. Single	51[51.5]	134[62.3]	1	
2. Married	23[23.2]	32[14.9]	.69[.31-1.55]	
3. Divorced	11[11.1]	20[9.3]	.53[.23-1.00]	
4. Cohabiting	14[14.1]	29[13.5]	.78[.38-1.61]	
Lose of Identity if circumcised				
1. Yes	38[38.4]	48[22.3]	.46[.27-.77]	.96[.17-5.46]
2. No	61[61.6]	167[77.7]	1	1
Circumcision is embarrassing act				
Yes	65[65.7]	82[38.1]	.32[.20-.53]	1.34[.35-5.10]
No	34[34.3]	133[61.9]	1	1
Fear of rejection if circumcised				
Yes	92[92.9]	13[6.0]	.001[.001 - .02]	.003[.001- .012]*
No	7[7.1]	202[94.0]	1	1
Continuous Variables				
Age			.86[.79-.94]	.84[.71-.99]*
Knowledge			1.71[1.49-1.96]	1.50[1.13-2.08]*
Perceived threat**			1.36[1.26-1.46]	1.28[1.10-1.53]*
Perceived Benefits			1.20[1.14-1.24]	1.06[.97-1.17]
Perceived Barriers			1.12[1.10-1.16]	1.1[.99-1.2]
Self-Efficacy			1.19[1.10-1.30]	1.19[.90-1.59]
Cues To Action			1.02[.96-1.10]	

*P < 0.05

**Perceived threat – the sum of perceived susceptibility and severity.

The other possible notions behind such low willingness to circumcision could be; the indigenous ethnic groups in Gambella regional states have until recently regarded the procedure with suspicion and as an instrument of imperious foreigners, disliked because of their historic attempts to change their culture and they also feared that it could cause them sexual impotency.²⁴ Perceived threat was other predictor of willingness to uptake circumcision among male college students. Students with higher perceived threat towards HIV/AIDS had the highest likely hood of willingness to uptake circumcision. Different studies also explain about the importance of circumcision in preventing HIV/AIDS and other STIs. The studies conducted in sub-Saharan Africa Uganda , Kenya and South Africa showed that youths perceived that male circumcision protects against HIV/AIDS as well as reduces the incidence of other sexually transmitted infections, including genital ulcers, human Papilloma virus, and Chlamydia in female partners of men.²⁻⁴ This may be explained as the individual who beliefs about the seriousness and possible outcome of the disease may also have high perceived threat; hence the students can be easily convinced to perform circumcision. In general, a student who perceived as he is under high threat from HIV/AIDS and other STIs and knows that circumcision could prevent the threat; he would be more likely to perform male circumcision or willingness to uptake circumcision. This study has established that students who perceived they could be rejected if circumcised were less willing in performing circumcision. This might be directly related to the social norm that is given high value to their culture in the community. This result may imply that students who have strong attachment with their social norms identified morals, values and beliefs as the factor that most affected their decisions about whether to have circumcision or not. On other hand some adolescents may view circumcision as alien to the general cultural practices of the local people. This finding is similar to the views expressed by older men in Turkana County, Kenya who spoke of circumcision as belonging to other cultures.²⁵ Similar findings were also reported in rural Zimbabwe.^{26,27} Also similar to views expressed in Turkana is the perception that circumcision might invite stigma from peers.²⁷ A longitudinal study on adolescents in Southwest Ethiopia also reported that societal norms toward culturally specific behaviors put youths at a disadvantage with regard to health and health care. This similar study again explained that societal norms have led to a systematic neglect of children's decision making for their own health care.²⁸

We have tried to investigate knowledge of male students as another dimension of willingness to uptake circumcision and it is found to be significant factor in multivariate analysis. The result showed that per a unit increases on knowledge score, the likely hood of willingness to uptake circumcision also increases. It is obvious that current knowledge on prevention of AIDS has increased remarkably over the years and it is almost universal in most sub-Saharan African countries but the association between such knowledge and sexual behavior is rather ambiguous.²⁻⁴ Age of students is the other predictor variable which was significantly associated with willingness to uptake circumcision. The result showed that as the age of students increased by one year the likely hood of willingness to uptake circumcision also increased. The national survey of Ethiopia also confirmed that the percentage of men who are circumcised increases with age, ranging from 88% of men age 15-19 to 95% of men age 40-49.^{8,29,30} The possible explanation for our study may be that community's culture like racial and ethnic variability could be the main factors for percentage of men who are willing to uptake circumcision increases

with age. Most men in Gambella region are not circumcised at their early ages due to their culture and they could be willing to uptake circumcision after they have told or informed about the importance of male circumcision in reducing the higher risk of HIV infection. This study should be understood in the context of some limitations. Firstly, the study findings and conclusions are based on only college students. Furthermore, the study was conducted using self report, without clinical examination or confirmation.

Conclusion

Despite the limitations, these findings contribute to the literature in several ways. The findings indicates that a substantial proportion of indigenous male students were willing to uptake circumcision though the prevalence is lower than that of the national and other regions data. This study revealed that respondent's perception towards the threat of HIV/AIDS, knowledge about the importance of male circumcision and age were the major predictors of willing to uptake circumcision. But fear of rejection in the society if circumcised was negatively associated with willing to uptake circumcision. This is an important result because it suggests that male circumcision is directly associated with societal norms. Therefore, this study has also shown that there is a need to understand how culture and beliefs surrounding circumcision can impact the uptake of male circumcision for HIV prevention. Others also explained that societal norms toward culturally specific behaviors put youths at a disadvantage with regard to health and health care as well as societal norms have led to a systematic neglect of children's decision making for their own health care.²⁷ Such norms may be difficult to dispel without a clear understanding of the source of these beliefs. The other important result suggests that male circumcision could be effective if information on perceived threat of HIV/AIDS is provided. This should include the fact that uncircumcised adolescent could be at risk of acquiring HIV infection and informing them about the significant and effectiveness of male circumcision in reducing the risk of acquiring HIV and some STDs through heterosexual contact, as well as the potential harms of male circumcision. Generally it is recommended that if men who willing to uptake circumcision should be provided access to high-quality, free of charge male circumcision surgical services. Again designing communications strategies that directly address to stop negative belief about male circumcision particularly it is crucial to address the misconception that male circumcision is for other cultures. It also suggested that programmes that promote circumcision should involve traditional leaders and opinion leaders who can be at the forefront of dissuading such beliefs. Finally addressing these issues on adolescents at school or different institutional levels might be somewhat easier than shifting population-level norms around male circumcision.

Authors' contributions

DT wrote the proposal, participated in data collection, analyzed the data and drafted the paper. AM, LA ,MA and SA approved the proposal with great revisions, participated in data analysis, write the manuscript and revised subsequent drafts of the paper. All authors read and approved the final manuscript.

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Conflicts of interest

Author declares that there is no conflict of interest.

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