

## Prevalence of Voluntary Medical Male Circumcision and Factors Associated with Low Uptake among Men Aged 20 Years and Older in Mpanda Municipal Council

Alex H Semwali\*

School of Public Health, Catholic University of Health and Allied Sciences, Mwanza, Tanzania

\*Corresponding author:

Alex H Semwali

✉ Semwali2001@gmail.com

Tel: +0757341353

School of Public Health, Catholic University of Health and Allied Sciences, P.O. Box 1464, Bugando Area, Mwanza, Tanzania

**Citation:** Semwali AH (2021) Prevalence of Voluntary Medical Male Circumcision and Factors Associated with Low Uptake among Men Aged 20 Years and Older in Mpanda Municipal Council. Health Sci J. 15 No. 1: 795.

### Abstract

**Background:** Voluntary Medical Male Circumcision (VMMC) is among the important and popular interventions for the prevention of new HIV infections. The overall coverage of male circumcision is still low to some of the regions especially Katavi region. The situation is worse among adults; this is known due to high number of young boys attending VMMC clinics. This study assessed prevalence and factors affecting VMMC uptake among 20 years and older in Mpanda Municipal Council.

**Methods:** Cross-sectional community based study was undertaken in Mpanda Municipal Council in Katavi Region, from August 2017 to September 2018. Multistage sampling was used to obtain villages then households with study participants. A total of 570 men were interviewed. Quantitative data were analyzed using logistic regression.

**Results:** Overall uptake of VMMC among men aged 20 years and older is low only (53.5%). Majority of respondents were knowledgeable on VMMC with 92.2% (525). However, more than half of the respondents 393 (69%) know health benefits of VMMC and reported that HIV could be prevented through medical Male Circumcision. 508 (88%) of the respondents reported that the service was accepted by the community.

Regarding on the factors reported to affect VMMC includes services discourages men to take the services (P-value= 0.001), Services conducted in few days per week (special days) (P-value<0.001) and cultural beliefs of not taking circumcision (P-value=0.033.), services encourages other to go for the service (P-value <0.001). Regarding on health personnel negative behavior of not observing confidentiality (P-value 0.0250).

**Conclusion:** In general, the Uptake of Voluntary Medical Male Circumcision was found to be high as compared to the TACAIDS report of 2013. Few days of the service, Health workers behavior was among the factors showed significant association in VMMC service provision. Therefore, there is a need of addressing and strengthening VMMC in all health facilities and equip health facilities with adequate and competent health workers.

**Keywords:** Voluntary medical Male circumcision; HIV and barriers factors affecting VMMC

**Received:** January 11, 2021, **Accepted:** January 25, 2021, **Published:** January 29, 2021

### Abbreviations

AIDS: Acquired Immunodeficiency Syndrome; VMMC: Voluntary Medical Male Circumcision; CHMT: Council Health Management Team; MMC: Medical Male Circumcision; WHO World Health Organization; RCTIs: Randomized Clinical Trials; TACAIDS: Tanzania Commission for AIDS; UNAIDS: United Nations Programme for AIDS; HPV: Human Papilloma Virus; THIMS: Tanzania HIV/AIDS and Malaria Indicator Survey

### Background

Male circumcision (MC) is a practice of removing all or part of the foreskin of the penis. Male circumcision is among the most common surgical procedures in the world. Male circumcision is mainly undertaken for social, cultural and medical reasons [1]. Worldwide, religion is the major determinant of MC among Abrahamic religions particularly Jewish and Muslim, and this practice is conducted because of belief and covenant between

Abraham and God [2]. Several tribes and their cultures in African countries tend to practice MC in early adult life as a ritual “rite of passage” or a shift to puberty, adulthood or marriage [3].

Based on the three Randomized controlled Clinical Trial results (RCTs) conducted between 2002 and 2006 in Uganda, Kenya and South Africa demonstrated significantly reduction of female-to-male chances of Human Immunodeficiency Virus (HIV) transmission by about 60% [4-6]. In March 2007, World Health organization (WHO) and United Nations Programme on HIV/AIDS (UNAIDS), recommended MC to be an additional HIV prevention strategy in countries with low rate of MC and high HIV prevalence [7,8].

Uncircumcised men are exposed to chances of cancer of the penis, phimosis, balanitis, and high-risk types of human papillomavirus (HPV) in glans penis, and shaft of the penile [9]. MC is important due to capacity of reducing new and future HIV burden in the Southern and Eastern African countries [10].

The WHO identified 14 countries from Eastern and Southern Africa with high HIV prevalence and low circumcision rate to prioritize the Voluntary Medical Male Circumcision (VMMC) and rolling out strategy Tanzania inclusive [8].

In African countries, it is estimated that more than 62% males are circumcised, with significant difference by regions, religious and ethnicity. Few countries like Swaziland, Burundi, Rwanda, Malawi, Botswana, and Namibia have MC prevalence below 20%; while countries with nearly 80% includes Lesotho, South Africa, Sudan, Tanzania and Mozambique [11-13].

According to Tanzania Commission for Acquired Immunodeficiency Syndrome (TACAIDS) reports, the overall MC prevalence is estimated to be at 70%. Rates from different regions varies from 16% to 26% with culture, tradition and religious being factors influencing VMMC [14].

In Tanzania, the VMMC program started in 2009 after conducting situational analysis on the acceptability and health rationale, Ministry of health and social welfare prioritized males between 10-34 years which account for almost 42.7% of the total males in the country, therefore 12 out of 30 regions with high prevalence of HIV and low male circumcision rate were highly focused [15].

In a study conducted in Tanzania by Plotkin et al in 2013, results revealed that most of the clients attending at voluntary medical male circumcision are those aged 10-19 years old, while those aged 20 years and above who are among the sexually active age group have the lowest attendance [15].

Katavi region prevalence of male circumcision is estimated to be at 44.3% which is lower than the national male circumcision prevalence which is 71.9% [16].

Several studies which have been conducted in many communities including Tanzania indicate that older men (over 25 years of age) have not come for the service [17,18]. Reasons for poor attendances are not well understood [18,19].

Despite of widely and extensively health promotion and education approaches to the community on the benefits of VMMC, yet report among men aged above 20 years who are sexually active

group is still low due to low turnout for circumcision., This data indicated there are some hidden factors which made men aged 20 years and above not attending to the MC service [10,18]. Therefore this study aimed to assess the prevalence and factors associated with low VMMC uptake among men aged 20 years and older in Mpanda Municipal Council.

## Methods

### Study area and design

This study was conducted in Mpanda Municipal Council in Katavi region, which is located in South western highland of Tanzania. Mpanda Municipal Council is among the areas implementing the Voluntary Medical Male Circumcision campaign due to high prevalence of HIV and low circumcision rate. According to 2013 Tanzania HIV/AIDS and Malaria Indicator Survey (THIMS), Katavi region was estimated to have 44.3% overall prevalence of male circumcision which is below the national level [16].

This study was a community based cross-sectional study was carried out among 570 adult men aged 20 years and older between June and August 2017 in five villages of Mpanda district. Multistage sampling, cluster and simple random sampling was employed. A multistage was used where 2 divisions out of 3 were randomly selected. Then 5 wards out of 15 were randomly selected, then 2 villages from each of the five wards were randomly selected from which a total of 570 respondents were recruited.

### Data Collection

The structured Questionnaire based on the Ministry of Health, Community Development, Gender, Elderly and children policy guideline and literature review information on Knowledge, Perception, Social demographic and individual factors related to VMMC uptake were used to collect data.

### Data analysis

Quantitative data from the respondents were entered into a computer using Epi data software version 3.1 and imported to a STATA package Version 13 for analysis. Continuous data were summarized using median with interquartile range, where categorical variables were summarized using proportion and percent. To determine factors associated with Voluntary Medical Male Circumcision uptake we used univariate followed by Multivariate logistic regression analysis. Factors with P-value less than 0.2 on univariate logistic regression model were subjected to multivariate logistic regression model where significance association between independent and dependent variables was obtained using odds ratio. 95% Confidence interval and p-value. Factors with p-value less than 0.05 were considered statistically significant. Likert scale was used to assess the level of knowledge among the respondents.

### Ethical Consideration

Ethical approval for this study was sought from the Joint CUHAS and Bugando Medical centre ethics Committee with ethical clearance certificate number CREC/2017/2017 of 17<sup>th</sup> August

2017, Permission to conduct the study was obtained from the Mpanda Municipal.

## Results

### Demographic characteristics of the studied population

A total of 570 respondents were involved in the study. Their median age was 29 (23-40) years. Majority of the participants 293(51.4%) were within 20-29 years age group. Most of participants had primary level of education 128 (57.5%). More than two thirds, 407 (71.4%) of participants were married and 407 (71.4%) of participants were Christians.

### Prevalence of voluntary medical male circumcision

About half of the respondents, 53.5% (305/570) reported to be circumcised through voluntary medical male circumcision. Most of the males who underwent voluntary male circumcision, 115 (37.7%) were circumcised at the age of 10-15 years.

### Reported factors and barriers to VMMC

On univariate logistic regression analysis, the factors affecting uptake of VMMC were VMMC discourage men to take the services (OR 5.0; 95% CI 3.1-1.8; p-value=0.001), Services conducted in few days per week (OR 0.3; 95% CI 0.3 - 0.5; p-value<0.001) and cultural beliefs of not taking circumcision (OR 1.5; 95% CI 1.1-2.0; p-value=0.033.)

Following multivariate logistic regression analysis the factors associated with voluntary Medical male Circumcision uptake were services discourage other to go for the service (OR 10.5; 95% CI 4.3-25.8; p-value <0.001) and health personnel behavior (OR 6.0; 95% CI 1.3 -27.8), p-value 0.021), availability of the service within their location (OR 1.4; 95% CI 1.0-2.1), p-value 0.056.

### Knowledge on VMMC uptake among men aged 20 years and older

Generally, the level of knowledge among respondents was high with 340 (59.6%) had good knowledge, 128 (22.5%) Moderate knowledge and 102 (17.9%) had inadequate knowledge pertaining to the importance and benefits VMMC.

Majority of respondents 525(92.1%) had heard of VMMC. of those 295 (56.2%) were circumcised and 230 (43.8%) were Uncircumcised. Those who were circumcised were significantly more likely to have heard of VMMC p<0.0001. The most trustable source of information were religious leaders, television, radio and friends,

Most of the circumcised men got the information from religious leaders, television p<0.0001, radio p<0.0004 and friends p<0.0058) compared to when the source of information is magazine. Circumcised males were more likely to know the health benefits of circumcision than those who were not circumcised (301 (57.39%) versus 4 (8.9%) p-value <0.0001).

Those who circumcised were more likely to report that

circumcision protect male partners from getting herpes, genital and cervical cancer p<0.0001. Those who were circumcised were more likely to report that circumcision prevents HIV infection ;p<0.0001). Those who though VMMC can cause excessive bleeding p<0.0001), delayed healing p<0.0001) and improper cutting p<0.0001) were less likely to uptake circumcision compared to those who though VMCC can bring only pain, 561(98%) respondents were able to define VMMC and 393 (68.9%) knows that VMMC prevents HIV and STI [20].

### Prevalence of voluntary medical male circumcision

The current study findings indicated that self-reported prevalence of male circumcision among men aged 20 years and older in Mpanda Municipal Council was 53.5%. This findings indicates that there is an increase on Male circumcision uptake from 44.3% in 2012 to 52.7% in 2015. This is according Tanzania Demographic Health survey [16]. Mpanda Municipal council has therefore improved in VMMC uptake among 20 years and older. The probable reasons for this results could be raised knowledge level on the benefits of VMMC, acceptability, level of education, Awareness through various methods, supportive supervision, VMMC Mobile service availability. This can be compared with another findings of other studies conducted in Kenya which indicated self-reported prevalence of voluntary Medical Male Circumcision among men aged 15-49 years of 58.1% in Nyanza province though prevalence of the current study is slightly lower. This can be due to high awareness and knowledge of the VMMC among Kenyans especially from Nyanza province where there were high prevalence of HIV and VMMC used as one of the Preventive measures. In Zimbabwe one of the study reported that the acceptability level of circumcision to be lower than in the current study and studies from other African countries.

The current study findings is above those reported in the study done in North Western Tanzania on Sukuma men which showed the prevalence of circumcised to be more than 20% among men 20 years and older. The difference can be accounted by interval between the two studies, ethnicity of the participant and cultural difference and the knowledge gap between the studies. However it is lower than the findings of Tanzania Demographic Health Survey of 2015.

High level of education and employment increases the uptake by 1.2 and 1.6 respectively. It is therefore seen that Mpanda Municipal council is doing well in Voluntary Medical male circumcision uptake among those age 20 years and above. However it is high time for the Municipal Health Department and other stake holders in health service provision to strengthen VMMC services in fixed health facilities in combination with mobile services [21].

## Discussion

### Factors affecting uptake of voluntary medical male circumcision

In this study the significant factors associated with voluntary medical male circumcision were services discourages met to go to the clinic, Services conducted in few days (not as a routine)

conducted during school holidays, Health workers behavior, cultural beliefs and unavailability of VMMC services within their location (Villages). This finding was similar to a study conducted in Malawi on whereby health service behavior, Inaccessibility of the VMMC services and cultural beliefs were among the factors hindering uptake of the service [22].

### Reasons/barriers to medical male circumcision

Several reasons or barriers were reported to affect uptake of Voluntary Medical Male Circumcision these include service availability and accessibility within their villages' health facility, fear of pain during and after MMC procedure, Fear of HIV screening, health workers behavior and experienced partners' refusal, improperly cutting of the fore skin and . Findings of this study are in line with findings of other studies done in Zimbabwe and Uganda had reported barriers such as cultural barriers, Religious/Lack of knowledge on the importance of male circumcision in the aspect of HIV prevention, fear of pain during and after procedure of male circumcision and fear of the negative side effect associated with whole procedure of the male circumcision and post-surgical complications as well as fear of infection and delayed wound healing were reported to affect uptake of VMMC among young men hence making them not to decide to seek for the VMMC services [23]. Another study conducted in other regions highlighted adverse effects as one of the common barrier to affect Male circumcision acceptability.

Although the services were conducted in a limited time mostly once per year during school holidays, yet the service offered encourage others. Concerning with barriers results revealed that inadequate availability of the services this is in line with a similar study conducted in Bungoma Kenya among circumcised men healing was one of the complication and challenge of circumcision. Study done in Botswana, men reported willing to be circumcised only if it will be provided at the hospital and for free [24].

Delayed wound healing after circumcision contributes to prolonged time of not performing family responsibilities and making them away from working areas like farming, fishing and looking for cattle. Therefore it acts as barriers to the uptake of VMMC among men aged 20 years and older also reported in other studies.

Study done in Kenya also reported hesitations about taking time off work after surgery and particular concerns about abstaining from sex during wound healing among married men to be common barrier for the uncircumcised men to accept the Programme. Also, in this study, other barrier reported were Fear of pain during Male Circumcision, Misconception, Cultural beliefs. These barriers are similar to those reported in other East African countries such as Kenya where primary reasons that men chose not to be circumcised were pain during/after the procedure, long healing period, culture or religion, and time away from work. Current study also found that Low risk perception and fear of HIV screening and testing

### Knowledge level on VMMC

In the current study knowledge on Voluntary Medical Male

Circumcision was high, Majority of respondents 525 (92.1%) have heard of VMMC and aware of the benefits, of note majority of had heard VMMC as HIV prevention intervention of these majority of them were circumcised. Findings from several studies conducted by World Health Organization indicates that there is high knowledge on that Circumcision reduce chances of HIV acquisition [4]. These findings were similar with studies in Zimbabwe. However several studies reported, lack of knowledge being among the hindering factor to VMMC [23]. The current study reported most of the circumcised men had strongly agreed that VMMC provides temporary prevention against HIV and STI. These findings is in line with other studies reported that uncircumcised men had high chances of getting penile cancer, STI and HIV.

### Conclusion

Generally, uptake of Voluntary Medical Male Circumcision uptake among men aged 20 years and older in Mpanda Municipal had increased. Finding from this study shows the prevalence of 53.5% (305/570). Furthermore, majority of the respondents 525 (92.1%) had good knowledge pertaining to the benefits of medical male circumcision yet uptake still not at the planned target. However, there are still some hindering factors to the uptake of Voluntary Medical male Circumcision among men aged 20 years and older. These include discouragement of the service, Services conducted in few days per week, unavailability of VMMC services within their location (villages) and cultural beliefs. Therefore existing health facilities at different level must be equipped with adequate and qualified human resources for health, necessary equipments to address identified factors affecting uptake of VMMC as essential tool or component in lowering prevalence of HIV.

### Ethics Approval and Consent to Participate

Ethical approval was sought from the joint Catholic University of Health and Allied Sciences-Bugando and Bugando Medical Center Research Ethics Committee with ethical clearance number CREC/227/2017. Permission was obtained from Mpanda Municipal Director Council Health Management team to conduct the study. The respondents were adequately informed using the participant's informed written consent statement about all the relevant. Aspects of the study, including its aim, interview procedures, anticipated benefits and potential hazards.

### Consent for Publication

Not applicable

### Competing Interests

The authors declare that they have no competing interests.

### Availability of Data and Materials

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request and permission from the joint Catholic University of Health and

Allied Sciences-Bugando and Bugando Medical Center Research Ethics Committee

## Acknowledgements

Authors are grateful to all Men of Mpanda Municipal Council aged 20 years and older for their willingness to participate in the study, without them I could not obtain the intended data. We also thank the Mpanda Municipal Director, Council Health Management team Also we are so thankful to School of Public Health-Catholic University of Health and Allied Sciences-Bugando for the valuable contributions and supports.

## Authors' Contributions

AS: Participated in study designing and data collection, data analysis and interpretation, preparation and writing a Manuscript. AC: Participated in designing the study, data analysis, manuscript writing. NB: supervised the study and participated in designing the study, data analysis, manuscript writing & final editing of the study. SN: Participated study designing and data collection tools editing. WM: Participated in data analysis and interpretation, preparation. BN: Participated in data analysis, Interpretation and manuscript preparation. All authors have read and approved the final manuscript.

## References

- Siegfried N, Muller M, Deeks JJ, Volmink J (2009) Male circumcision for prevention of heterosexual acquisition of HIV in men. *Cochrane Database Syst Rev* CD003362.
- Rizvi S, A Naqvi S, Hussain M, Hasan A (1999) Religious circumcision: a Muslim view. *BJU International* 83:13-16.
- Doyle D (2005) Ritual male circumcision: a brief history. *J R Coll Physicians Edinb* 35:279.
- Auvert B, Taljaard D, Lagarde E, Sobngwi-Tambekou J, Sitta R, et al. (200) Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: the ANRS 1265 Trial. *PLoS med* 2:e298.
- Bailey RC, Moses S, Parker CB, Agot K, Maclean I, et al. (2007) Male circumcision for HIV prevention in young men in Kisumu, Kenya: a randomised controlled trial. *The lancet* 369:643-656.
- Gray RH, Kigozi G, Serwadda D, Makumbi F, Watya S, et al. (2007) Male circumcision for HIV prevention in men in Rakai, Uganda: a randomised trial. *The Lancet* 369:657-666.
- WHO/UNAIDS (2007) New Data on Male Circumcision & HIV Prevention: Policy and programme implications.
- WHO/UNAIDS (2010) Progress in Male Circumcision Scale Up; Country Implementation and Research update 2010.
- Morris BJ, Gray RH, Castellsague X, Bosch FX, Halperin DT, et al. (2011) The strong protective effect of circumcision against cancer of the penis. *Adv Urol* 2011: 812368.
- Kripke K, Perales N, Lija J, Fimbo B, Mlangi E, et al. (2016) The Economic and Epidemiological Impact of Focusing Voluntary Medical Male Circumcision for HIV Prevention on Specific Age Groups and Regions in Tanzania. *PLoS ONE* 11:e0153363.
- WHO/UNAIDS (2016) A Frame work for Voluntary Medical Male Circumcision for Effective HIV Prevention.
- Weiss H, Polonsky J, Bailey R, Hankins C, Halperin D, et al. (2007) Male circumcision: global trends and determinants of prevalence, safety and acceptability. *UNAIDS/WHO*.
- Williams BG, Lloyd-Smith JO, Gouws E, Hankins C, Getz WM, et al. (2006) The potential impact of male circumcision on HIV in Sub-Saharan Africa. *PLoS Med* 3:e262.
- Tanzania Mo H (2010) Medical Male Circumcision Strategy in Tanzania 2010. *TACAIDS TANZANIA*.
- Plotkin M, Castor D, Mziray H, Küver J, Mpuya E, et al. (2013) Man, what took you so long? Social and individual factors affecting adult attendance at voluntary medical male circumcision services in Tanzania. *Glob health Sci Pract* 1:108-116.
- (2013) Tanzania HIV/AIDS and Malaria Indicator Survey 2011-12.
- WHO/UNAIDS (2011) Joint Action Frame work to Accelerate the Scale up of Voluntary Medical Male Circumcision for HIV Prevention in Eastern Souther Africa. 2011-16.
- Plotkin M, Castor D, Mziray H, Küver J, Mpuya E, et al. (2013) Man, what took you so long? Social and individual factors affecting adult attendance at voluntary medical male circumcision services in Tanzania. *Glob Health Sci Pract* 1:108-116.
- Macintyre K, Andrinopoulos K, Moses N, Bornstein M, Ochieng A, et al. (2014) Attitudes, perceptions and potential uptake of male circumcision among older men in Turkana County, Kenya using qualitative methods. *PLoS One* 9:e83998.
- WHO/UNAIDS (2007) Male Circumcision Global Trends and Determinants, Prevalence and Safety. *UNAIDS/WHO Library*.
- Communication UH (2010) Factors that influence men to seek or reject male circumcision health Uganda.
- Ikwegbue JN, Ross A, Ogbonnaya H (2015) Rural Zulu women's knowledge of and attitudes towards medical male circumcision. *Afr J Prim Health Care Fam Med* 7:775.
- Chiringa IO, Ramathuba DU, Mashau NS (2016) Factors contributing to the low uptake of medical male circumcision in Mutare Rural District, Zimbabwe. *Afr J Prim Health Care Fam Med* 8:966.
- Kebaabetswe P, Lockman S, Mogwe S, Mandevu R, Thior I, et al. (2003) Male circumcision: an acceptable strategy for HIV prevention in Botswana. *Sex Transm Infect* 79:214-219.