

## KNOWLEDGE OF PARTICIPANTS ABOUT VOLUNTARY MEDICAL MALE CIRCUMCISION AMONG MEN ATTENDING NAKIVALE HC III ISINGIRO. A CROSS-SECTIONAL STUDY.

*Felix Muhumuza\*, Andrew Natwijuka, Anne Tweheyo Otwine  
Faculty of nursing and health science, Bishop Stuart University*

Page | 1 **ABSTRACT**

### **Background:**

Male circumcision should be delivered as part of a minimum package that includes information about risks and benefits, counseling on safer sexual practices, access to HIV testing services and condoms, and management of sexually transmitted infections. The study aims to assess the knowledge of participants about voluntary medical male circumcision.

### **Methodology:**

A cross-sectional study employing quantitative measures. The study involved adult males who attend healthcare services at Nakivale Health Center III in the age bracket of 15 to 50 years. The data was exported to the IBM statistical package for Social Sciences (SPSS) version 20 software for analysis. Data was analyzed using percentages and frequencies for univariate and Chi-square for bivariate analysis.

### **Results:**

The majority of the participants had attained a primary level of education (42.2%) and the least had tertiary education 13(9.4%). 44(31.9%) of the participants were aware of age to be circumcised 89(64.5%). 74(53.6%) participants mentioned that voluntary Medical Male Circumcision services reduce sexual pleasure. 67(48.6%) of the participants indicated that a health facility is the safest place with VMMC services. 67(48.6%) mentioned keeping the hygiene benefits of Voluntary Medical Male Circumcision. (32.6%) expected duration a male who underwent Voluntary Medical Male Circumcision takes to heal is between 4 to 6 weeks. 78(56.6%) indicated that the Age for a male to be circumcised is childhood and early adulthood.

### **Conclusion:**

Knowledge about the right age of circumcision, the right hygiene measure, and the expected duration of healing significantly influenced the uptake of voluntary medical male circumcision among men attending Nakivale HC III Isingiro.

### **Recommendations:**

Delivery of comprehensive Knowledge about safe male circumcision should be rolled out to the different community stakeholders including local leaders and village health team participation.

*Keywords: Safe male circumcision, Comprehensive Knowledge, Nakivale Health Center III, Isingiro  
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*Corresponding author: Felix Muhumuza\*  
Email: natwijukaandrew@gmail.com  
Faculty of nursing and health science, Bishop Stuart University*

## **BACKGROUND**

Male medical circumcision (MMC) is done medically to reduce transmission of HIV, (Kaufman et al., 2016) and STIs and to improve personal hygiene among others. It was from this background that VMMC was recommended by WHO as a way of reducing HIV transmission among those circumcised. According to other studies, three randomized trials demonstrated that Voluntary Medical Male Circumcision (VMMC) leads to a 50–60% relative risk reduction of female-to-male HIV transmission (B. Nanteza

et al., 2018). Male circumcision has also been shown to provide additional benefits, such as reducing the transmission of some sexually transmitted infections, for example, the human papillomavirus (Skolnik et al., 2014). The total number of voluntary medical male circumcisions in the 14 WHO priority countries from 2008 to 2017 was 18,581,880. These included Botswana, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, Eswatini, Tanzania, Uganda, Zambia, and Zimbabwe (WHO, 2015)

Male circumcision should be delivered as part of a minimum package that includes: information about risks and benefits, counseling on safer sexual practices, access to HIV testing services and condoms, and management of sexually transmitted infections. It is provided with full adherence to medical ethics and human rights principles, including informed consent and confidentiality. More so, supervision systems for quality assurance should be established along with referral systems to manage complications (Manual for male circumcision under Local Anesthesia and HIV Prevention Services for Adolescent Boys and Men, 2018).

In Kenya, out of 387 participants recruited in a quantitative study and 341 considered for analysis, 54% had attended secondary or tertiary education, and the level of understanding of VMMC was above average. 59% knew VMMC of whom 31% got the information through television and radio (Gikunju et al., 2014). Uptake of Voluntary medical male circumcision was reportedly low in northern Uganda due to inadequate Knowledge about circumcision. Out of 396 males and 50 between 18-49 years interviewed revealed that males who failed to reject the misconception that VMMC reduced sexual performance circumcision was 42% less prevalent (PR = 0.58, 95% CI 0.38–0.89,  $p = 0.012$ ), and less prevalent among male sexual partners of females who failed to reject the misconception (PR = 0.22, 95% CI = 0.07–0.76,  $p = 0.016$ ). Circumcision was also 35% less prevalent among male respondents who failed to reject the misconception that VMMC increased a man's desire for more sexual partners (PR = 0.65, 95% CI = 0.46–0.92,  $p = 0.014$ ) (Nanteza et al., 2018). The study aims to assess the knowledge of participants about voluntary medical male circumcision among men attending Nakivale HC III Isingiro.

## **METHODOLOGY**

### **Study design**

This was a cross-sectional study employing quantitative measures. This design is appropriate because it helps the researcher to study phenomena at a particular point in time (Polit & Beck, 2010). Quantitative methods of data collection were employed. Quantitative methods help to study the numbers of a problem and to determine percentages.

### **Study setting**

The study was conducted at Nakivale Health Centre III. This is a health facility in the Isingiro district that serves several native Ugandans and thousands of refugees from neighboring countries. Isingiro District is located in southwestern Uganda 37 Kilometers southeast of Mbarara

city, the second-largest city in Uganda. Nakivale Health Center is 50 kilometers from Mbarara city which is almost an hour's drive. Isingiro borders Tanzania in the south, Rakai, and Mbarara.

### **Study population**

The study involved adult males who attend healthcare services at Nakivale Health Center III in the age bracket of 15 to 50 years.

### **Eligibility**

#### **Inclusion criteria**

All adult males between the ages of 15 to 50 years willing to participate in the study were recruited.

#### **Exclusion criteria**

The study excluded adult males between the ages of 15 to 50 years who were very ill, those who declined consent and were absent during data collection, and those who were already circumcised.

### **Sample Size Determination**

The sample size was estimated by Kish and Leslie's standard formula (1965),  $N = Z^2PQ/E^2$ . Where N is the sample size, Z is the score responding 95% of the confidence interval which is 1.96, and P is the percentage of participants who have ever done VMMC in a study that was done by Nanteza et al., (2018) was estimated to be 0.694.  $Q = 1 - P = 1 - 0.694 = 0.306$

$E =$  Level of error expected which is 0.05  $N = (1.96)^2 \times 0.05 (0.5) / 0.052$ ,  $N = 326$

The study was adjusted for finite population as follows; Fisher et al. (1998)

$nf = n / (1 + (n/N))$  Where;  $nf =$  desired sample for population < 10 000  $n =$  desired sample size for population > 10 000. N = number of adult males who attended Nakivale HCII in the last two months (200)

$nf = 326 / (1 + (326/200))$  and  $nf = 15124.4$  thus, 124 adult males aged 15-50 years shall be considered.

### **Sampling technique**

Consecutive sampling was used to get the study participants. The researcher included all the adult males aged 15-50 years who met the inclusion criteria and were conveniently available as part of the sample.

**Data collection tools**

Data was collected from participants using a researcher-administered questionnaire which was developed from the literature review. The questionnaire comprised a section for demographic characteristics, knowledge about VMMC, and socio-cultural factors associated with its uptake. The questionnaire was translated into the Runyankole local language for a better understanding of the participants.

**Data collection procedure**

After obtaining ethical approval and all permission protocols, the researcher explained the purpose of the study to individual male participants in a conducive and private environment and asked them to consent to the study. Those who accepted and consented were subjected to a researcher-administered questionnaire that took about 15 to 20 minutes per participant. The researcher cross-checked for completeness of the questionnaire before releasing the participant. Afterward, the filled questionnaires were kept well in the researcher’s bag only accessible to him.

**Data management and quality control**

The questionnaires were translated into Runyankole the local Language commonly used in the area. The questionnaires were pretested on 20 participants at Rwekubo Health Center IV also in Isingiro district. Questions that were found to be abstract were restructured or deleted from

the questionnaire. The questionnaires were administered by the researcher to minimize errors. Questionnaires were cross-checked at the end of every interview and were kept safely to protect them from loss or destruction.

**Ethical considerations**

The proposal was approved by the University Research and Ethics Committee for Bishop Stuart University, an introduction letter was sought from the Nursing head of the department to seek permission from the relevant offices including the District Health Officer Isingiro district and Nakivale Health Center in charge. Consent was sought from each participant before data collection who was above 18 years and assent were sought from participants below 18 years of age.

**Data analysis**

The questionnaires were coded, entered in Microsoft Excel checked, and cleaned. The data was then exported to the IBM Statistical Package for Social Sciences (SPSS) version 20 software for analysis. Data was analyzed using percentages and frequencies for univariate and Chi-square for bivariate analysis.

**RESULTS**

**Socio-demographic characteristics**

**Table 1: Socio-demographic characters**

Variable	Category	N(%)
<b>Age</b>	18-29 years.	62(44.9)
	30-39 years	44(31.9)
	40-49 years	14(10.1)
<b>Marital status</b>	Single	68(49.3)
	Married	49(35.5)
	Divorced/ separated	3(2.2)
<b>Level of education</b>	No formal education	15(10.9)
	Primary	61(44.2)
	Secondary	31(22.5)
	Tertiary education	13(9.4)
<b>Occupation</b>	Civil servant	28(20.3)
	Self-employed/Businessman	37(26.8)
	Student	39(28.3)
	Unemployed	16(11.6)
<b>Religion</b>	Catholic	23(16.7)
	Protestant	50(36.2)
	Seventh-day Adventist	25(18.1)
	Moslem	10(7.2)
<b>Nationality</b>	Born Again Christians.	12(8.7)
	Ugandan	61(44.2)
	Tanzanian	13(9.4)
	Rwandese	34(24.6)
	Congolese	6(4.3)
	Sudanese	6(4.3)

Table 1 shows that one hundred twenty-four (124) adult males were selected to participate in the study, and only one hundred twenty (120) adult males fully completed the study, yielding a response rate of 98.8%. On age majority of subjects were aged between 18 to 39 years 106(76.8%) and the least were aged 40-49 years 14(10.1%), on marital status, most of the participants were single 68(49.3%) and the least were divorced 3(2.2%). The majority of the participants had attained a primary level of education (42.2%) and the least had tertiary education 13(9.4%). On occupation, most of the participants were students 39(28.3%) and the least were unemployed 16(11.6%), on religious affiliation most of the

participants were protestant 50(36.2%) and the least were Muslims 10(7.2%). On nationality, most of the participants were Ugandans 61(44.2%) and the least were Sudanese 6(4.3%) and Congolese 6(4.3%).

### Knowledge towards the uptake of Voluntary Medical Male Circumcision services

This study looked at the knowledge of its participants to be able to determine their awareness of VMM which would affect the utilization of VMMC.

**Table 2: Knowledge of the uptake of Voluntary Medical Male Circumcision services**

Variable	Category	N(%)
<b>Aware of where to get Voluntary Medical Male Circumcision services</b>	Yes	76(55.1)
	No	44(31.9)
<b>Places with VMMC services</b>	Health facility	67(48.6)
	Place of worship	29(21.0)
	Schools	16(11.6)
	Sub County Head Quarters	8(5.8)
<b>Aware of the age to be circumcised</b>	Yes	89(64.5)
	No	31(22.5)
<b>Age for a male to be circumcised</b>	Baby/child	39(28.3)
	Adolescence	30(21.7)
	Early adulthood	39(28.3)
	Late adulthood	4(2.9)
	Any age	8(5.8)
<b>Voluntary Medical Male Circumcision services reduce sexual pleasure</b>	Yes	74(53.6)
	No	46(33.3)
<b>Keeping hygiene benefits of Voluntary Medical Male Circumcision</b>	Yes	67(48.6)
	No	53(38.4)
<b>Care should males who have been circumcised be given</b>	Special diet	33(23.9)
	Daily wound dressing	45(32.6)
	Admitted to the health facility	30(21.7)
	Swallow antibiotics and painkillers daily	12(8.7)
<b>Expected duration a male who underwent Voluntary Medical Male Circumcision takes to heal</b>	Less than 4 to 6 weeks	32(23.2)
	Between 4 to 6 weeks	45(32.6)
	Greater than 4 to 6 weeks	43(31.2)

From Table 2, most of the participants were aware of the age to be circumcised 89(64.5%) and the least were not aware 44(31.9%). Most participants mentioned that voluntary Medical Male Circumcision services reduce sexual pleasure 74(53.6%) and the least number did not agree 46(33.3%). The majority of the participants were aware of where to get Voluntary Medical Male Circumcision services 76(55.1%) and the least were not 44(31.9%). Most of the participants indicated that the health facility is the safest place with VMMC services 67(48.6%) and least mentioned sub-county headquarters 8(5.8%). Most of the participants mentioned that keeping hygiene benefits of Voluntary Medical Male

Circumcision 67(48.6%) and the least declined it 53(38.4%). The majority of the participants mentioned that daily wound dressing is the care that should males who have been circumcised be given (32.6%) and the least mentioned that should be admitted at the health facility 30(21.7%). Most of the participants expected the duration a male who underwent Voluntary Medical Male Circumcision takes to heal to be between 4 to 6 weeks (32.6%) and the least mentioned less than 4 to 6 weeks 32(23.2%). Most of the participants indicated that the Age for a male to be circumcised is childhood and early adulthood 78(56.6%)

while the least mentioned that VMMC can be done at any age 4(2.9%) as shown in Table 2.

**Table 3: Association between Knowledge towards the uptake of VMMC and uptake of VMMC**

Variable	Category	Uptake of Voluntary Medical Male Circumcision	X <sup>2</sup>	df	P value
		YES N(%)	NO N(%)		
<b>Places with VMMC services</b>	Health facility	53(58.9)	14(46.7)	4.889 <sup>a</sup>	3
	Place of worship	23(25.6)	6(20.0)		
	Schools	10(11.1)	6(20.0)		
	Sub County Head Quarters	4(4.4)	4(13.3)		
<b>Aware of the age to be circumcised</b>	Yes	79(87.8)	10(33.3)	34.810 <sup>a</sup>	1
	No	11(12.2)	20(66.7)		
<b>Age for a male to be circumcised</b>	Baby/child	28(31.1)	11(36.7)	15.357 <sup>a</sup>	4
	Adolescence	24(26.7)	6(20.0)		
	Early adulthood	30(33.3)	9(30.3)		
	Late adulthood	0(0.0)	4(3.3)		
	Any age	8(8.9)	0(0.0)		
<b>Voluntary Medical Male Circumcision services reduce sexual pleasure</b>	YES	56(62.2)	18(60.0)	.047 <sup>a</sup>	1
	NO	34(37.8)	12(40.0)		
<b>Keeping hygiene benefits of Voluntary Medical Male Circumcision</b>	Yes	51(67.8)	6(20.0)	20.828 <sup>a</sup>	1
	No	29(32.2)	24(80.0)		
<b>Care should males who have been circumcised be given</b>	Special diet	21(23.3)	12(40.0)	13.139 <sup>a</sup>	3
	Daily wound dressing	39(43.3)	6(20.0)		
	Admitted to the health facility	18(20.0)	12(40.0)		
	Swallow antibiotics and painkillers daily	13(13.3)	0		
	Less than 4 to 6 weeks	16(17.8)	16(53.3)		
<b>Expected duration a male who underwent Voluntary Medical Male Circumcision takes to heal</b>	Between 4 to 6 weeks	37(41.1)	8(26.7)	14.717 <sup>a</sup>	2
	Greater than 4 to 6 weeks	37 (41.1)	6(20.0)		

\*significant p value (≤ 0.05) acceptable level

Table 3, Overall study results revealed that there was a significant association between knowledge factors of awareness of the age to be circumcised X<sup>2</sup>(df=1)=34.810, p value=0.000, Age for a male to be circumcised X<sup>2</sup>(df=4)=15.357, p value=0.004, keeping hygiene benefits of Voluntary Medical Male Circumcision X<sup>2</sup>(df=1)=20.828, p value=0.000, care that should males who have been circumcised X<sup>2</sup>(df=3)=13.139, p value=0.004 and expected duration a male who underwent Voluntary Medical Male Circumcision to heal X<sup>2</sup>(df=2)=14.717, p value=0.001

## DISCUSSION

### Knowledge of participants about voluntary medical male circumcision

Overall study results revealed that there was a significant association between knowledge factors of awareness of the age to be circumcised (p value=0.000), Age for a male to be circumcised (p value=0.004), keeping hygiene benefits of Voluntary Medical Male Circumcision (p value=0.000), that should males who have been circumcised (p value=0.004)

and expected duration a male who underwent Voluntary Medical Male Circumcision to heal ( $p$  value=0.001). this study's results are contrary to key findings of a study by (Nanteza et al., 2018) where most participants rejected the misconception that VMMC reduces sexual performance ( $p$  = 0.012), and is less prevalent among male sexual partners of females who failed to reject the same misconception ( $p$  = 0.016). Circumcision was also less prevalent among male respondents who failed to reject the misconception that VMMC increases a man's desire for more sexual ( $p$  = 0.014). This variation in the results can be explained by the fact that knowledge of VMMC benefits, risks, and procedures vary according to the circumcision status of male respondents and the study area. This study was carried out in a remote health facility which has less sensitization compared to urban settings.

Similarly, results from the study by (Hoffman et al., 2015) indicate that increased uptake of voluntary male medical circumcision was due to good knowledge (72%) health benefits and the practice of voluntary male medical circumcision. More so, a study by (Dévieux et al., 2015) found that a high level of willingness to perform Voluntary Medical Male Circumcision could be attributed to participants' level of knowledge about the benefits of Voluntary Medical Male Circumcision.

## CONCLUSION

Knowledge about the right age of circumcision, the right hygiene measure, and the expected duration of healing significantly influenced the uptake of voluntary medical male circumcision among men attending Nakivale HC III Isingiro.

## RECOMMENDATIONS

Delivery of comprehensive safe male circumcision health education should be rolled out to the different community stakeholders including local leaders and village health team participation.

## LIST OF ABBREVIATIONS

**HIV:** Human Immunodeficiency Virus  
**VMMC:** Voluntary Medical Male Circumcision  
**HC III:** Health Center III  
**WHO:** World Health Organization

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The study was not funded.

## CONFLICT OF INTEREST

The author did not declare any conflict of interest.

## AUTHOR BIOGRAPHY

Felix Muhumuza is a student with a Degree in Nursing Completion at Bishop Stuart University.

Andrew Natwijuka is a lecturer at the Faculty of Nursing and Health Science at Bishop Stuart University.

Anne Tweheyo Otwine is a lecturer at the Faculty of Nursing and Health Science at Bishop Stuart University.

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