

Determinants Affecting the Adoption of Vasectomy as a Family Planning Method among Married Men in Kiziranfumbi Sub-County, Kikuube District

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ABSTRACT

Despite its reliability, vasectomy remains an underutilized family planning choice among men, being prevalent in only a handful of countries. Globally, its use stands at 2%, with sub-Saharan Africa reporting less than 100,000 cases by 2019 and a mere 0.4% utilization in Uganda. To investigate this, a cross-sectional community-based study was conducted to scrutinize the factors influencing the acceptance of vasectomy among married men in Kiziranfumbi sub-county, Kikuube district. Three parishes—Bulimya, Munteme, and Kidoma—were chosen, and 384 married men residing in the area for over six months were selected through systematic random sampling. The majority fell within the 21-30 age range (30.2%), with the Banyoro tribe comprising 66.4%, Catholics at 53.9%, primary education level at 70.6%, and 82.6% engaged in peasant farming. Monogamous marriages (69%) were prevalent, lasting between 5-25 years (69%), and with less than five children (50.8%). While 85.9% were aware of vasectomy, sources of information varied—32.6% from health workers and 25.3% from family and friends. Misconceptions persisted, with 52.1% uncertain about its impact on sexual function and 19.3% mistaking it for castration. Cultural influences loomed large, with 45.8% citing cultural beliefs as influencing their decision, 35.7% considering it culturally unacceptable, and 38.8% labeling it taboo. Furthermore, 42.2% believed vasectomy diminished men's societal role. The study revealed a generally low level of knowledge (mean 2.1189, SD 0.38994), a high prevalence of negative attitudes (mean 3.1289, SD 0.30335), and strong cultural beliefs (mean 2.8620, SD 0.58887) against vasectomy. However, despite these barriers, 46.6% expressed an intention to opt for vasectomy, influenced significantly by knowledge ($P = 0.011$) and cultural beliefs ($P = 0.000$), contributing to 51.5% of the observed intention to uptake vasectomy. Addressing these hurdles will require widespread vasectomy awareness campaigns through health education, with a focus on male involvement in family planning to enhance the acceptance and uptake of vasectomy as a viable choice.

Keywords: associated factors, vasectomy, family planning

INTRODUCTION

Vasectomy is an elective surgical sterilization procedure for men that is intended to obstruct or remove a portion of both vas deferens, thereby preventing sperm from moving from the testes to the ejaculatory ducts [1]. Though vasectomy is a highly effective and safe family planning (FP) method for couples who want to stop childbearing [2, 3], it

remains a rejected family planning option among men [4] and is only popular in a few countries [5].

According to the United Nations (UN) world report of 2019 on contraceptive use by method, it showed that only 2% of males had had vasectomies compared to female sterilization which stood at 24% [6]. Countries with the highest vasectomy

rates included Bhutan where approximately 40% of men of reproductive age have had a vasectomy. This compared to New Zealand with approximately 25%, then Canada, the United Kingdom, and the United States at approximately 20% each, and Australia and the Republic of Korea with 12.5% each [7].

In Africa, there were a few countries that reported measurable vasectomy use that exceed 0.1% prevalence [8]. Africa stood at 0.0%, Sub-Saharan Africa and Eastern Africa as regions also stood at 0.0% with fewer than 100,000 men to have accessed Vasectomy [6]. In Uganda, vasectomy use was generally low across the country with a prevalence of only 0.4% [9].

Of the 135 districts, 26 districts including Kikuube did not have any reported cases [10]. There was need to establish the reasons why the method was not popular in many districts so as to embrace the opportunity to provide permanent methods in these districts.

Vasectomy could be one most effective and cost friendly family planning method with major impact on sustainable development and population growth if the procedure could well be understood [11]. This implies that correct knowledge and positive attitude are important to ensuring informed acceptance of vasectomy [4] this further suggests that lack of knowledge about vasectomy and inaccurate information underlie its poor

uptake and often influence the way men perceive the procedure [12]. A study done in the Eastern Province of Rwanda revealed that misconceptions about vasectomy played a great role in vasectomy rejection where by 59.9% of the participating men perceived vasectomy to be a form of castration [13] when castration was defined as, removal or destruction of the testicles [14].

Another related study done among women in Tanzania produced similar results. Women expressed concerns that vasectomy could damage a man's pride and masculinity [15]. James D and Roy Jacobstein pointed out that, low demand of vasectomy by men was as a result of; men still viewing contraception as a women's responsibility, poor awareness on vasectomy, lack of discussion of any kind of contraception- notably vasectomy among couples and poor knowledge or bias about vasectomy among providers [16].

Although vasectomy is one of the permanent family planning methods recommended in all districts of Uganda as an intervention of birth control [17], no research specific to Kikuube district had been carried out to evaluate its acceptability among married men. Therefore, the researcher sought to evaluate factors that influenced acceptability of vasectomy in Kiziranfumbi sub-county Kikuube district.

METHODOLOGY

Study design

This was a cross sectional descriptive study [18].

Study area

The study was conducted among married men of Bulimya, Munteme and Kidoma, parishes in kiziranfumbi sub-county, Kikuube district in the Bunyoro Sub-Region of Western Uganda.

Study population

All married men of Kiziranfumbi Sub-County Kikuube District.

Inclusion criteria

Randomly selected married men living with their wives in the Kiziranfumbi Sub-County Kikuube District

All married men who consented to participate in the study during the study period were eligible for the study.

Exclusion criteria

Married men who had lived less than six months in the study area and those who did not consent to the study were excluded.

Sample size determination

The sample size was determined using the formula.

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

Where;

n = Sample size for the study

Z = standard normal deviation set at 95% confidence level

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P = percentage picking a choice or response (50%)

e = Margin of error set at 0.05 (5%)

$n = [(1.96)^2(0.5)(1 - 0.5)] / (0.05)^2$

$n = (3.8416)(0.5)(0.5)/0.0025$

$n = 0.9604/0.0025$

$n = 384.16$

Therefore, the sample size of 384 participants was used for the study.

Sampling procedure

Kiziranfumbi sub-county has 3 parishes namely: Bulimya, Kidoma and Munteme. All were selected for the study. Then, the calculated sample size of 384 was proportionately allocated for each parish based on the number of households. A systematic random sampling technique was then used to select the study participants.

Data collection methods

A questionnaire was developed by reviewing relevant literature and with input from different interest to be used to collect data to evaluate factors that influenced acceptability of vasectomy as a family planning method among married men of Kiziranfumbi sub county Kikuube district.

Structured, pre-tested questionnaire was used for each participant to collect

Semu information on socio-demographic and known factors that were related to vasectomy acceptability.

The questionnaire included questions pertaining to socio demographic details (age, tribe, religion, education status, occupation, and family/reproductive history), knowledge, attitude and cultural beliefs that influenced acceptability of vasectomy among married men.

Data analysis

Data on questionnaires was entered in Microsoft Excel version 2010, and then exported to IBM SPSS statistics version 23. Data was analyzed per objective:

Ethical consideration

Ethical clearance was obtained from the institutional review board of Kampala International University. Permission to conduct the study was obtained from Kikuube district authorities under the District Health Officer. Participants of the study were informed about the purpose, objectives, and their right to participate or not to participate in the study. Privacy and confidentiality of the study participant was ensured by keeping all information anonymous. Written informed consent was obtained from each participant [19].

RESULTS

Table 1: A table showing social demographic characteristics of the study participants

Age	Frequency (N)	Percentage (%)
<20	21	5.5
21-30	116	30.2
31-40	96	25.0
41-50	89	23.2
51-60	37	9.6
>60	25	6.5
Tribe		
Munyankole/Mukiga	125	32.6
Munyoro	255	66.4
Others	4	1.0
Religion		
Anglican	18	30.7
Catholic	207	53.9
Muslim	118	4.7
SDA	8	2.1
Pentecostal	33	8.6
Education		
Primary	271	70.6
Secondary	69	18.0
Tertiary	44	11.5
Occupation		
Peasant	317	82.6
Private Business	51	13.3
Civil Servant	11	2.9
Student	5	1.3

The modal age of the study participants was 21-30 years with 116(30.2%), the mean age being 38.59 years with a standard error of 12.534. There were a few participants in the extremes of age with 21(5.5%) 20 years and below and 25(6.5%) above 60 years. Majority of the study participants were Banyoro 255(66.4%) followed by Banyankole/Bakiga 125(32.6%) and others 4(1.0%). Catholics were the majority of the study participants with 207(53.9%) followed by Anglicans 118(30.7%) and the least being SDA 8(2.1%).

Majority of the study participants had primary level education as the highest education attained 271(70.6%) with tertiary education as the least with 44(11.5%). Consequently, majority of the participants were peasant farmers 317(82.6%) with only 2.9% of the participants having formal employment. This is as shown in Table 1: A table showing social demographic characteristics of the study participants Table 1 above.

Table 2: A table showing family/reproductive characteristics of the study participants

Variable	Frequency (N)	Percentage (%)
Type of Marriage		
Monogamy	265	69.0
Polygamy	119	31.0
Marriage Duration		
<5	58	15.1
5-15	175	45.6
16-25	90	23.4
>25	61	15.9
Number of children		
<5	195	50.8
5-10	116	30.2
11-15	45	11.7
>15	28	7.3

Monogamy was the main marriage type existing among the study participants with only 11(31%) practicing polygamous marriage. 265(69%) had marriage duration of between 5-25 years of marriage and 58(15.1) were less than 5 years and 61(15.9%) were above 25 years of

marriage. Furthermore, many of the families interviewed had less than 5 children 195(50.8%) followed with those having 5-10 children 116(30.2%) and the least being those with above 15 children 28(7.3%). This is as shown in Table 2 above.

Table 3: A Table showing participant's knowledge about Vasectomy

Variable	Frequency (N)	Percentage (%)
Heard about Vasectomy		
No	54	14.1
Yes	330	85.9
Source of information		
N/A	54	14.1
Family and Friends	97	25.3
Health Workers	125	32.6
Mass media	62	16.1
Others	46	12.0
Is Vasectomy permanent		
Don't Know	103	26.8
No	16	4.2
Yes	265	69.0
Sexual function return to Normal after vasectomy		
Don't Know	200	52.1
No	73	19.0
Yes	111	28.9
Vasectomy is same as castration		
Don't know	141	36.7
No	169	44.0
Yes	74	19.3

Majority of the study participants had heard about vasectomy as a family planning method 330(85.9%) with 54(14.1%) without any knowledge about vasectomy. The main source of information on vasectomy was obtained from health workers 125(32.6%) and family and friends 97(25.3%). Social media contributed about 16.1% as source of information on vasectomy.

Among the participants, 265(69.0%) knew that vasectomy is a permanent family planning method, however, 103(26.8%) were not aware. Additionally, 200(52.1%) never knew if sexual function returns to normal after vasectomy and 73(19.0%) knew that sexual functionality never returns to normal after vasectomy and only 111(28.9%) who knew that sexual functionality returns to normal after

vasectomy. Worth noting is that 141(36.7%) of the participants don't know if vasectomy is the same as castration and 74(19.3%) know that vasectomy is the

same as castration. Only 169(44%) know the difference between castration and vasectomy.

Table 4: A table showing participants' attitude towards vasectomy

No:	Question	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
1.	Men should undergo vasectomy	54(14.1)	172(44.8)	50(13)	99(25.8)	9(2.3)
2.	Contraception is wife's responsibility alone	10(2.6)	131(34.1)	50(13.0)	173(45.1)	20(5.2)
3.	Vasectomy has its influence on self-confidence and masculinity	2(0.5)	90(23.4)	50(13.0)	223(58.1)	19(4.9)
4.	Vasectomy is better than tuboligation	41(10.7)	240(62.5)	50(13.0)	48(12.5)	5(1.3)

Majority of the participants agreed that its men to undergo vasectomy 226(58.9%) and 193(50.3%) disagreed that contraception is a wife's responsibility alone with 141(36.7%) agreeing that contraception is not a man's responsibility.

Majority disagreed that vasectomy influences self-confidence and masculinity 242(63%) and 281(73.2%) agreed that vasectomy is better than tuboligation. This is as shown in Table 4 above.

Table 5: A table showing participant's cultural beliefs in relation to vasectomy

No:	Question	Strongly agree	Agree	Don't know	Disagree	Strongly disagree
1.	My cultural beliefs would not influence my decision to have vasectomy	26(6.8)	132(34.4)	50(13.0)	134(34.9)	42(10.9)
2.	I consider it a taboo to get a vasectomy	8(2.1)	141(36.7)	50(13.0)	150(39.1)	35(9.1)
3.	My cultural beliefs, would not approve me to get a vasectomy.	24(6.3)	113(29.4)	50(13)	162(42.2)	35(9.1)
4.	Vasectomy diminishes men's roles in the family and society	8(2.1)	154(40.1)	50(13.0)	130(33.9)	42(10.9)

There was a relatively equal cultural belief on influence against 158(41.2%) and influence for 176(45.8%) making decision to have vasectomy, with 50(13%) unsure about its role on decision making. Of the participants 149(38.8%) consider it a cultural taboo to get vasectomy,

137(35.7%) of the participants could consider vasectomy as its not approved by their cultural beliefs and 162 (42.2%) believe that vasectomy diminishes men's roles in the family and the society. This is as shown in Table 5 above.

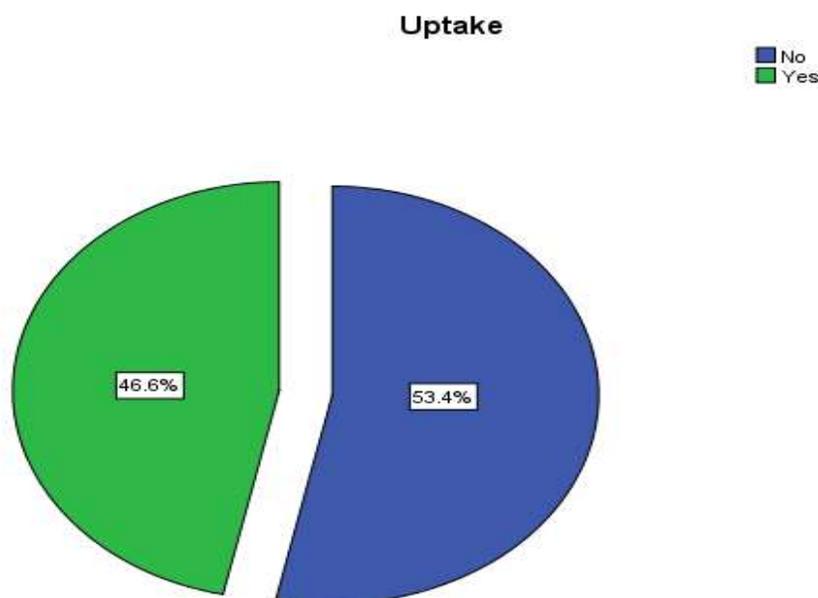


Figure 1: A pie-chart showing participants' willingness to take up vasectomy as family planning method

Only 46.6% of the study participants were willing to take up Vasectomy as a family planning method among the study participants.

Table 6: A Table showing participant's knowledge, Attitude and cultural beliefs about Vasectomy

Parameter	Mean	SD of the mean	Interpretation
Knowledge			
Is Vasectomy permanent	2.38	0.926	high
Sexual function return to Normal after vasectomy	2.10	0.686	low
Vasectomy same as castration	1.75	0.757	low
Overall	2.1189	0.38994	Low
Attitudes towards vasectomy			
Men should undergo vasectomy	2.08	1.366	low
Contraception is wife's responsibility alone	2.84	1.040	high
Vasectomy has its influence on self- confidence and masculinity	2.57	0.920	High
Vasectomy is better than tuboligation	3.69	0.871	High
Overall	3.1289	0.30335	High
Cultural Beliefs			
My cultural beliefs would not influence my decision to have vasectomy	2.91	1.182	High
I consider it a taboo to get a vasectomy	2.84	1.087	High
My cultural beliefs, would not approve me to get a vasectomy.	2.82	1.140	High
Vasectomy diminishes men's roles in the family and society	2.89	1.118	High
Overall	2.8620	0.58887	High

Legend: 1.00-1.74 (very low), 1.75-2.49 (Low), 2.50-3.24(high), 3.25-4.00(very high)

There was an overall low level of knowledge (Mean 2.1189, SD 0.38994) among the study participants as depicted

by the low level of knowledge on sexual functionality after vasectomy (Mean 2.10, SD 0.686) and misconception that vasectomy is same as castration (mean 1.75, SD 0.757).

There is an overall high attitude against vasectomy (mean 3.1289, SD 0.30335) among married men in Kiziranfumbi sub-county. This is depicted by the high level of attitude that contraception is a wife's responsibility (mean 2.84, SD 1.366) and the perception that vasectomy has influence on self-confidence and masculinity (mean 2.57, SD 0.920) and a

low perception that men should undergo vasectomy (mean 2.08, SD 1.366).

Regards to cultural beliefs, there is an overall high cultural belief against vasectomy (Mean 2.8620, SD 0.58887). This is reflected with a high cultural belief that it's a taboo to get vasectomy (mean 1.087, SD 1.087), vasectomy not approved by cultural beliefs (Mean 2.82 SD 1.140) and belief that vasectomy diminishes men's roles in the family and society (mean 2.89, SD 1.118). This is as shown in Table 6 above.

Table 7: A table showing relationship between knowledge, Attitude and Cultural beliefs with uptake of vasectomy as family planning method

	Pearson correlation	P-value
Knowledge	0.130	0.011
Attitude	0.089	0.081
Cultural beliefs	-0.704	0.000

At bivariable analysis, there was observed significant contribution of Knowledge and cultural beliefs towards uptake of vasectomy as family planning method among married men (p-value 0.011 and 0.000 respectively)

At multivariable analysis, knowledge and cultural beliefs were significantly

associated with vasectomy uptake (P-value <0.05) and it explained about 51.5% of the observed intension of vasectomy uptake as family planning method among married men in Kiziranfumbi sub-county, Kikuube district.

Table 8: A table showing multivariate relationship between associated factors

	Beta	P-value	Interpretation
Knowledge	-0.599	0.000	Significant
Cultural beliefs	0.181	0.000	Significant
R= 0.718			
R ² = 0.515			
F=202.602			
Std error =0.349			
ANOVA P-value =0.000			

DISCUSSION

The researcher found a lower knowledge of vasectomy among the married men in Kiziranfumbi sub-county in Kikuube district. This is evidenced with only 28.9% knowing that sexual function returns to normal after vasectomy, 44% only knew that vasectomy is different from

castration despite the fact that majority 330(85.9%) and 265(69%) herd about vasectomy and knew that vasectomy is a permanent method of family planning respectively. The overall mean of knowledge was low (mean 2.1189, SD 0.38994). This could be attributed to

unauthenticated source of information on vasectomy where 97(25.3%) got it from family and friends, 46(12%) got it from other sources with only 125(32.6%) getting information from health workers. This is a similar scenario observed in Nigeria where majority 23 (45.1%) heard about vasectomy from friends/partner, 11(21.6%) from literature, 13(25.5%) from the hospital, while the least 7.8% was from the mass media [20]. The findings of this study disagree with a study in Burundi where an overall level of knowledge of vasectomy was high. However, the author agrees with this study on the aspect of low knowledge gaps on specific details related to vasectomy [21]. This study also agrees with a study in turkey where 35.4% of men believed vasectomy had a negative effect on marriage and 35.4% of men believed vasectomy could negatively affect sexual health [22] and 66(48.5%) of the respondents in Nigeria strongly agreed that vasectomy to any man is castration and should not be done, while 21(15.4%) agreed [23]. On the contrary the study findings disagree with findings in Ethiopia where only 64.7% (n=97) indicated that they hadn't heard or didn't know about male sterilisation. Consequently, the overall knowledge of male sterilisation was low at 18% and only 35.33% of respondents knew that vasectomy is permanent and irreversible [24] while in Nigeria 62.5% had no knowledge of vasectomy while out of the 51 (37.5%) who claimed to have knowledge, only 18 (13.2%) had high knowledge and the remaining 33(24.3%) had poor knowledge of vasectomy [23]. There is an overall high attitude against vasectomy (mean 3.1289, SD 0.30335) among married men in Kiziranfumbi sub-county. This is depicted by the high level of perception that contraception is a wife's responsibility (mean 2.84, SD 1.366), vasectomy has influence on self-confidence and masculinity (mean 2.57, SD0.920) and a low perception that men should undergo vasectomy (mean 2.08, SD 1.366). There was a high level of perception that contraception is women's

responsibility this concurs to the largely held misbelief that contraception is solely a woman's business and men have to be on side-lines [23]. This also resonates with [20] in their study in Edo state ,Nigeria where Most of the respondents also showed negative attitude towards vasectomy and believed that vasectomy should not be done by men and that females should be responsible for family planning. Furthermore 3.6% of women and 35.4% of men believe vasectomy could negatively affect sexual health [22]. Additionally, the study found that 281 (73.2%) of the participants believed that vasectomy is better than tubal ligation (mean 3.69, SD - 0.871). This finding disagrees with a study in India where only 50% of participants believed that tubectomy is always a better choice of the permanent method [25].

On cultural beliefs, there was a relatively equal impact of cultural belief on influence against 158(41.2%) or for 176(45.8%) making decision to have vasectomy with 50(13%) unsure about its role on decision making.

Of the participants 149(38.8%) consider it a cultural taboo to get vasectomy, 137(35.7%) of the participants could consider vasectomy as its not approved by their cultural beliefs and 162 (42.2%) believe that vasectomy diminishes men's roles in the family and the society.

This differs with a study in Nigeria where vasectomy cultural acceptability was at 82.5% [20] while its lower than that observed in Burundi where 95.6% of respondents agreed that vasectomy was not culturally acceptable [21]. The study findings further agree with the Turkish study where 29.7% of men agreed that vasectomy is western culture being imposed on them and 100% of women with 18.4% Of men and 100% women and 35.4% of men concurred that vasectomy is a cultural taboo and diminishes man's status in society respectively [22].

A total of 179(46.6%) of the study participants were willing to take up Vasectomy as a family planning method among the study participants. This is

higher number compared to 22% in Bangalore rural population [25], 24% in Addis Ababa, Ethiopia [26] and 16.6% in Ilorin, Nigeria [27]. However, its lower than the 49.4% observed in Rwanda [28] and 68.0% observed in Delhi India [29].

The factors that were strongly associated with the intention to uptake vasectomy as a family planning method in the study participants included level of Knowledge on vasectomy ($P < 0.05$) and cultural beliefs towards uptake of vasectomy ($P < 0.05$). Further analysis showed that level of knowledge and cultural beliefs explain about 51.5% of the observed intentions to uptake vasectomy as family planning method. This could be because when there's enough knowledge about the pros and cons of vasectomy, the procedure

and its availability as a FP method, men may be more empowered to take up vasectomy despite a strong cultural belief against it. The study findings agree with study in Ethiopia were having good knowledge about vasectomy increased chances of uptake by 6.22 (AOR = 6.22, 95% CI = (3.17-12.21)), compared to those with poor knowledge [26] thus a study in Ethiopia, 76% of the participants recommend improving awareness of vasectomy among the community as a means of improving uptake of the services [24]. Furthermore, the study concurs with a Nigerian study where 25.0% hindrance to vasectomy uptake was because of cultural beliefs and prohibition [27].

CONCLUSION

There was a low level of knowledge on vasectomy among married men in Kiziranfumbi sub- county Kikuube district. There was a high level of negative attitude and cultural influence against the use of vasectomy as a family planning method among study participants.

The factors found significantly influencing vasectomy uptake among study participants were level of knowledge and cultural influence with 51.5% contributory role to the observed intended uptake of vasectomy among study participants.

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