



Title: Knowledge, Perception and Acceptability of Vasectomy among Adult Males at University of Nigeria, Enugu Campus

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Abstract

Background: Vasectomy is a minimally invasive surgical procedure involving the severing of the vas deferens, effectively cutting off the supply of sperm to the semen so that the ejaculated semen is devoid of sperm cells. However, despite its high efficacy and minimal invasiveness, it remains underutilised in sub-Saharan Africa.

Aim: This study assessed knowledge, perception, and acceptability of vasectomy among adult males at the University of Nigeria, Enugu Campus.



Methods and Materials: A cross-sectional survey design was employed among 106 men attending St Mulumba Chaplaincy and Chapel of Redemption UNEC. A researcher-developed questionnaire was used to collect data, which was analysed using descriptive and inferential statistics with the aid of (SPSS) version 25 and Microsoft Excel.

Results: The mean age and standard deviation of the respondents was 43.08 ± 9.12 . A greater percentage ($n=70$, 66%) had poor knowledge about vasectomy. The majority ($n=74$, 69.85%) had a negative perception of vasectomy. Only 1.9% ($n=2$) of the men have undergone vasectomy. Of those who have not had a vasectomy, only 6.7% ($n=7$) reported that they would consider it. The overall acceptability of vasectomy was 8.5% ($n=9$) and was not significantly associated with knowledge ($p = .268$).

Conclusion: Overall, there was poor knowledge, negative perception, and low acceptability of vasectomy among the respondents. Although acceptability was not dependent on knowledge, there is still a need for healthcare workers to carry out educational programs, especially geared towards religious and cultural beliefs, engage community leaders, and train peer educators to improve the knowledge and acceptability of vasectomy among men.

Keywords: *Vasectomy, Acceptability, Adult men, Knowledge, Perception.*

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Background

Family planning, a cornerstone of public health, involves the conscious decision-making and utilisation of strategies to regulate the number and spacing of children within a family unit (Olubodun et al., 2020). Ouedraogo et al. (2021) asserted that as an essential part of reproductive health, it goes beyond birth control to encourage informed decisions about reproduction and fertility. Thus, vasectomy offers a conscientious avenue to improve the health of mothers and children, reduce poverty, and enhance societal well-being in general. Vasectomy offers male partners a secure, very effective, and long-term choice in a world where female contraception options are the majority (Hoover et al., 2023). However, according to Nwankwo et al. (2022), vasectomy uptake remains significantly lower compared to female methods despite its benefits, raising concerns about limited knowledge and negative perceptions surrounding the procedure. Studies indicated that awareness of vasectomy as a family planning option is often low, particularly among men in developing countries (Nwankwo et al., 2022; Umeobieri et al., 2023). Misconceptions regarding its safety, efficacy, and reversibility further contribute to negative perceptions (Appiah et al., 2018).

Global contraceptive use has increased over the past decades, reaching 57.4 per cent in 2019, with significant disparities existing across regions and genders (United Nations, 2020). However, vasectomy still accounts for only 2% of the global contraceptive mix, with wide variations observed across countries and cultures. Shongwe et al. (2019) noted higher

utilisation rates in North America and Europe compared to Africa and Asia, where sociocultural factors and misinformation impede wider acceptance. This supports the need for enabling educational initiatives that will equip men with informed decisions to willingly be included in family planning and reproductive health on an equal footing with women, not merely as their default partners (Nkomde et al., 2023).

Johnson (2023) defined vasectomy as a minimally invasive surgical procedure for a nearly permanent male sterilisation. Vasectomy involves surgical interruption of the vas deferens, the tubes that transport sperm from the testicles to the urethra, thereby effectively preventing sperm from reaching the ejaculate, resulting in virtually no risk of conception. It is an elective and relatively minor family planning contraceptive approach that is similar to tubal ligation in women but less complicated than tubal ligation (Stormont & Deibert, 2023).

The contemporary vasectomy procedure, often performed using a no-scalpel technique, represents a minimally invasive approach (Johnson, 2023). In this method, a small puncture in the scrotum replaces the traditional incision, minimising tissue trauma. The vas deferens are then isolated and sealed, employing techniques like cauterisation or ligation. This approach aims to reduce bleeding, lower the risk of complications, and hasten recovery. Postoperatively, patients may experience some discomfort, swelling, or bruising, managed with over-the-counter pain relievers and ice packs (Johnson, 2023; Stockton et al., 2021).

Vasectomy has numerous benefits, one of which is its remarkable effectiveness (Stormont & Deibert, 2023). With a success rate



exceeding 99.9%, it ranks among the most reliable forms of birth control, surpassing popular methods like oral contraceptives and condoms (Stormont & Deibert, 2023; Centres for Disease Prevention and Control, 2023). This high efficacy translates to peace of mind and eliminates the constant worry of unintended pregnancy. Furthermore, a common concern surrounding vasectomies is their potential impact on sexual function. Evidence has shown that the procedure does not affect hormone levels, libido, or erectile function, as men still experience orgasms and ejaculation, with the only difference being the absence of sperm in the semen (Yang et al., 2020). In some cases, vasectomies can even improve sexual satisfaction due to the eliminated anxiety of unplanned pregnancy (Engl et al., 2017).

Also, for couples where the female partner experiences adverse effects from hormonal birth control, vasectomy offers a valuable alternative, eliminating the potential health risks associated with hormonal contraceptives, such as increased blood clot risk or mood swings (Shattuck et al., 2016). More so, while the initial cost of a vasectomy may seem higher than some reversible methods, its long-term cost-effectiveness is undeniable as it eliminates the need for ongoing purchases of birth control products, making it a financially sound investment over time (Shattuck et al., 2016).

Like every other procedure with advantages, vasectomy has its risks. It is a permanent form of contraception, with reversal procedures offering decreasing success rates over time. Complications such as infection,

bleeding, or post-vasectomy pain syndrome can occur, albeit rarely. Additionally, some men may experience psychological effects such as regret or anxiety about sexual function (Anderson et al., 2022). However, research has shown that the benefits of vasectomy outweigh the associated risks by a significant margin (Yang et al., 2020; Anderson et al., 2022).

In a nutshell, vasectomy presents a safe, effective, and permanent option for male family planning (Shongwe et al., 2019). As argued by Shattuck et al. (2016), its historical journey reflects changing perspectives on its purpose and growing recognition as a valuable tool for reproductive autonomy. Understanding the knowledge and perception of vasectomy among men attending St. Mulumba Chaplaincy and Chapel of Redemption UNEC is essential for promoting informed decision-making regarding family planning and reproductive health. By examining factors such as religious beliefs, cultural norms, and access to healthcare, this study gains insight into the barriers and facilitators influencing men's attitudes towards vasectomy, with the aim to address and dispel misconceptions surrounding vasectomy among men. Ultimately, this will help promote the proper spread of accurate information regarding this contraceptive option. By examining the knowledge and perceptions held within the selected congregation, areas of actual or potential misinformation can be identified. Consequently, targeted educational interventions can be developed to provide clear, evidence-based guidance on vasectomy, thereby leading to improved knowledge and perception of vasectomy as a safe and effective method of family planning within the community.

Method

The study design was a cross-sectional survey. The study setting consisted of two



prominent churches in the University of Nigeria Enugu Campus (UNEC): St Mulumba Chaplaincy and Chapel of Redemption. St. Mulumba Chaplaincy is a Catholic Church located just after the Faculty of Law in UNEC, while the Chapel of Redemption is a Methodist/Anglican church that is located just before UBA Bank in UNEC. Due to the small population of married men worshipping at both churches, all were included in the research. The sample size was 106. A researcher-developed questionnaire was the instrument for data collection. The validity and reliability of the instrument were done to ensure appropriateness and consistency. Ethical approval was obtained from the Health Ethics and Research Committee of the Enugu State Ministry of Health (Ref. No: MH/MSD/REC24/119). The administrative permit was obtained from the two vicars in charge of the churches before data collection. The researchers obtained informed consent before the questionnaire was administered to the eligible respondents after church service and was collected on-the-spot to ensure a high return rate. The principles of voluntary participation, anonymity, and confidentiality were upheld throughout the study. Data were analysed descriptively using frequency, percentage, mean, and standard deviation. An overall knowledge score was obtained for each respondent by scoring and summing each correct response to the knowledge items. The knowledge score was grouped as good (if the score is above 50%) and poor (if the score is 50% or below). An overall mean score for perception was obtained for each respondent by taking the mean response scores. The mean score was grouped as positive (if the mean is above 2.5) and negative (if the mean is 2.5 and below). The Chi-Square test with the Fisher exact test was used to test the hypothesis at a 5%

significance level; the Fisher exact test was used if data failed to meet the Chi-Square test assumption. These assumptions include: two categorical variables; two or more categories (groups) for each variable; independence of observation (there is no relationship between the subjects in each group, and the categorical variables are not paired in any way, e.g. pre/post-test observation) and lastly, relatively large sample size (expected frequencies for each cell are at least 1 and expected frequencies should be at least 5 for the majority (80%) of the cells). Significant difference/association hence existed if the p-value is less than .05; otherwise, there is no significance. All analyses were done using the Statistical Package for Social Sciences (SPSS) version 25 and Microsoft Excel.

Results

Table 1: Demographic Characteristics of the Men n = 106

	Frequency	Percent	M±SD
Age			43.08±9.12
- Below 30 years	8	7.5	
- 30-39 years	33	31.1	
- 40-49 years	33	31.1	
- 50 years and above	32	30.3	
Occupation			
- Student	5	4.7	
- Unemployed	2	1.9	
- Self-employed	37	34.9	
- Employed	60	56.6	
- No response	2	1.9	
Educational level			
- Primary	1	0.9	
- Secondary	26	24.6	
- Tertiary	75	70.8	
- No school	1	0.9	
- No response	3	2.8	
No. of children			
- 1-2	27	25.5	
- 3-4	44	41.5	
- 5+	19	17.9	
- No response	16	15.1	
Church attended			
- St. Mulumba Chaplaincy	43	40.6	
- Chapel of Redemption	62	58.5	
- No response	1	0.9	



The results presented in Table 1 show that the men's mean age and standard deviation were 43.08 ± 9.12 , and the modal age group was 30-39 years (31.1%) and 40-49 years (31.1%). More than half were employed (56.6%). Most

had tertiary education (70.8%). The majority had 3-4 children (41.5%). 58.5% worshipped in the Chapel of Redemption (58.5%), while 40.6% worshipped in St. Mulumba Chaplaincy (40.6%).

Table 2: Knowledge of Vasectomy among the Men

n = 106

	Frequency	Percent
Your understanding of vasectomy		
- Vasectomy is a surgical procedure performed to remove the uterus	4	3.8
- Vasectomy is a surgical procedure for male sterilization or permanent contraception, involving, involving the cutting and sealing of the vas deferens	69	65.1
- Vasectomy is a medical treatment used to induce ovulation in women	1	0.9
- Vasectomy is a contraceptive method involving the insertion of a hormonal implant under the skin	5	4.7
- Don't know	27	25.5
Which of the following is a benefit of vasectomy?		
- Provides a highly effective and permanent form of contraception for men	60	56.6
- Increases sexual libido and performance	9	8.5
- Reduces the risk of prostate cancer	4	3.8
- Enhances fertility and sperm production	3	2.8
- Don't know	30	28.3
Which of these is a potential risk or side effect associated with vasectomy?		
- Increased risk of erectile dysfunction	27	25.5
- Risk of infection at the surgical site	33	31.1
- Risk of developing testicular cancer	14	13.2
- Risk of hormonal imbalances	6	5.7
- Don't know	26	24.5
What is the primary purpose of vasectomy?		
- To increase sperm production	4	3.8
- To prevent sperm from reaching semen	68	64.1
- Risk of developing testicular cancer	4	3.8
- Risk of hormonal imbalances	2	1.9
- Don't know	28	26.4
How long does it typically take for a vasectomy to become effective as a contraceptive method?		
- Immediately after the procedure	35	33.0
- After a few weeks or months	22	20.8
- After one year	2	1.9
- Never becomes fully effective	1	0.9
- Don't know	46	43.4
Which part of the male reproductive system is cut or sealed during a vasectomy?		
- Epididymis	4	3.8
- Vas deferens	42	39.6
- Prostate gland	6	5.7
- Seminal vesicles	11	10.4
- Don't know	43	40.5



Can vasectomy be reversed through another surgical procedure?

- No, it cannot be reversed	47	44.4
- Yes, through a procedure called vasovasostomy	9	8.5
- Yes, through hormone therapy	3	2.8
- Yes, through medication	7	6.6
- Don't know	40	37.7

How long does a typical vasectomy procedure take

- Less than 15 minutes	4	3.8
- About 30 minutes	25	23.6
- About 1 hour	8	7.5
- More than 2 hours	9	8.5
- Don't know	60	56.6

Overall knowledge

- Good (<i>knowledge score > 50%</i>)	36	34.0
- Poor (<i>knowledge score ≤ 50%</i>)	70	66.0

From Table 2, the level of knowledge of vasectomy among the men was poor; not many had good knowledge (34.0%). The men mainly knew that vasectomy is a surgical procedure for male sterilisation or permanent contraception

involving the cutting and sealing of the vas deferens (65.1%), that it provides a highly effective and permanent form of contraception for men (56.6%) and prevents sperm from reaching semen (64.2%).

Table 3: Men's Perception of Vasectomy

n = 106

	No idea	VN	N	P	VP	M±SD
What is your perception of vasectomy as a surgical procedure	27	28	34	2	15	2.05±1.07
How do you perceive the impact of vasectomy on sexual function	27	28	22	23	6	2.09±0.98
What is your perception of the societal stigma surrounding vasectomy	42	28	15	10	11	2.06±1.14
How do you perceive the role of religious beliefs in influencing attitudes towards vasectomy?	29	47	17	10	3	1.60±0.86
What is your perception of the societal acceptance of vasectomy as a family planning method	22	21	45	11	7	2.05±0.85
Overall perception	Freq.	%				
- Positive (<i>mean perception score > 2.5</i>)	16	15.1				3.03±1.09
- Negative (<i>mean perception score ≤ 2.5</i>)	74	69.8				1.97±0.98
- Indifferent(<i>no idea for all items</i>)	16	15.1				

Key: VN = Very negative (score 1); N = Negative (score 2); P = Positive (score 3); VP = Very Positive (score 4); No idea was not scored
Note: The options in each itemised question were grouped together and analysed



From Table 3, the majority of the men had a negative perception of vasectomy (69.8%). Their perceptions mainly were that religious beliefs strongly opposed it (45.2%), that it is not well accepted in society (42.5%), and that the surgical procedure of vasectomy carries some risks like any surgery (33.0%).

Table 4: Acceptability of Vasectomy as a Method of Family Planning among Adult Men

n = 106		
	Frequency	Percent
Have you undergone vasectomy?		
- Yes	2	1.9
- No	104	98.1
If no, would you consider undergoing vasectomy as a method of family planning (n = 104)		
- Yes	7	6.7
- No	97	93.3
If no, why will you not consider vasectomy as a method of family planning (n = 97)		
- Not interested	28	28.9
- Not natural/unfamiliar	18	18.5
- Risky	28	28.9
- Not God's will	6	6.2
- Against my religion/tradition	3	3.1
- Too old	2	2.1
- No response	12	12.3
Overall acceptability of vasectomy		
- Yes (undergone or considered undergoing)	9	8.5
- No (never considered)	97	91.5

Results from Table 4 revealed that only 1.9% of the men had undergone vasectomy. Of those who have not undergone it, only 6.7% of them would consider doing it as a method of family planning. For those who would never consider it, they were majorly not interested (28.9%) or considered it risky (28.9%). In general, the acceptability of vasectomy was 8.5%.

Table 5: Associating Knowledge and Acceptability of Vasectomy

	Acceptability			Fishers exact
	Yes	No	Total	p-value
Knowledge				.268
- Good	5(13.9)	31(86.1)	36	
- Poor	4(5.7)	66(94.3)	70	

There was no significant association between knowledge and acceptability of vasectomy ($p = .268$) from the result in Table 5. Acceptability was almost the same, being generally poor for those with good (13.9%) and poor knowledge (5.7%).

Discussion

Knowledge of Vasectomy as a Method of Family Planning Among Adult Men

Findings from this study showed that the majority of respondents (65.1%) indicated that vasectomy is a surgical procedure for male sterilisation or permanent contraception involving the cutting and sealing of the vas deferens. More than half (56.6%) indicated that the major benefit of vasectomy is to provide a highly effective and permanent form of contraception for men. One-third (33.0%) of the population knew vasectomy was associated with the potential risk of infection at the surgical site, while others (38.5%) associated vasectomy with the potential risk of erectile dysfunction and risk of testicular cancer. The majority of the respondents (64.2%) knew the primary purpose of vasectomy is to prevent spermatozoa from reaching the semen but did not know how long it typically takes for vasectomy to be effective as a contraceptive method. Two-fifths (40.4%) of the respondents did not know the part of the male reproductive system that was cut or sealed during vasectomy. Only a minute number (8.5%) knew vasectomy could be reversed by another surgical procedure called vasovasostomy. Subsequently, most of the respondents (56.6%) do not know how long a typical vasectomy procedure takes. Generally, the overall knowledge of vasectomy among the



respondents was revealed to be poor, with about 66% of the population possessing poor knowledge of vasectomy. This finding is similar to the findings obtained from the study carried out by Ayele et al. (2021) on men's knowledge of vasectomy and its associated factors in Debre Tabor town, Northwest Ethiopia, where respondents demonstrated poor knowledge of vasectomy. Howbeit, Chinnaiyan and Babu (2021) found a contrasting finding of moderate knowledge of vasectomy among men in India. Differences in these findings might be attributed to the geographical location of the study. Notwithstanding, there is a need for men to be taught more about this method of family planning to improve their knowledge.

Perception of Vasectomy as a Method of Family Planning Among Adult Men

Results from this study showed that one-third (33.0%) of the respondents perceived vasectomy as a surgical procedure that carries some risks, like any surgery. A good number of respondents (26.4%) perceived vasectomy as an unsafe and dangerous procedure, but a lesser number (14.2%), albeit notable, perceived vasectomy as a completely safe procedure. The perception of the vasectomy on sexual function was almost evenly spread out, with 21.7% of respondents saying it does not affect sexual function, 26.4% saying vasectomy permanently impairs sexual function, 25.5% had no idea, and only 20.8% knew vasectomy might affect sexual function temporarily. Furthermore, a good number of respondents (39.6%) indicated that they had no knowledge or awareness of the societal stigma surrounding vasectomy. Quite a high number of respondents (45.2%) indicated

that religious beliefs strongly oppose vasectomy, impeding its social acceptance. Generally, the perception of vasectomy as a method of family planning among respondents was revealed to be negative (1.970.98), as the majority of the respondents (69.8%) had wrong perceptions of vasectomy. The findings of Nwankwo et al. (2022) in their study on knowledge, perception and acceptance of vasectomy among male teachers in secondary schools in Chikun LGA of Kaduna state, Nigeria, corroborated this result. However, Hateshet al. (2021), on the contrary, reported a positive perception among men in Karachi, Pakistan. They opt for it, keeping the comfort of children up front, with the belief that it is a better option than female tubal ligation. The discrepancy found in the study might be due to the geographical setting of the studies. Based on these findings, it is evident that there is a need for more teachings focused on dispelling misconceptions about the effect of vasectomy on sexual function, as a substantial portion of the respondents seemed to believe that vasectomy permanently impairs sexual function.

Acceptability of Vasectomy as a Method of Family Planning Among Adult Men

Findings from this study reveal that almost all the respondents have not undergone vasectomy (98.1%), and an equally great number (93.3%) would not consider vasectomy as a method of family planning. Not being interested, perception of vasectomy as a risky procedure, and an unfamiliar procedure were the three major reasons indicated by respondents for not considering vasectomy as a method of family planning. The results of this study have shown similarity to that of Nwankwo et al. (2022) on



the acceptance of vasectomy as a male method of contraception, where only very few respondents showed a willingness to accept vasectomy as a method of family planning. Again, Shongwe et al. (2019) revealed a very low acceptability of vasectomy as a family planning option in Eswatini.

Association between the Level of Knowledge of Vasectomy and the Acceptance of Vasectomy as a Method of Family Planning.

Findings from this study revealed that among respondents who demonstrated good knowledge of vasectomy (13.9%), the majority of them (86.1%) subsequently showed low acceptance of vasectomy as a method of family planning. Additionally, almost all of the respondents who demonstrated poor knowledge of vasectomy (5.7%) also showed low acceptance of vasectomy (94.3%) as a method of family planning. Hence, there was no significant association ($p = 0.268$) between knowledge and acceptability of vasectomy, as acceptance was almost the same, being generally poor for those with good knowledge and poor knowledge.

Conclusion

The study revealed a poor knowledge, negative perception, and low acceptability of vasectomy as a method of family planning among married men. Inadequate knowledge and negative perceptions about vasectomy may lead to misconceptions and myths, hindering informed decision-making regarding contraception, and may also perpetuate stigma and cultural barriers, discouraging men from considering it as a viable option. More so, the

low acceptability of vasectomy may limit access to a safe and effective form of contraception, contributing to unintended pregnancies and population growth. Addressing these barriers through education, counselling, and community engagement is crucial for promoting reproductive health and family planning choices.

Strengths and Limitations of the Study

The strengths of this study include the provision of information on the knowledge, perception and acceptability of vasectomy as a method of family planning among married men in two prominent churches at the University of Nigeria, Enugu campus, a high return rate (100%), and the inclusion of married men from varied denominational background (Methodist, Anglican and Catholic). Thus, enabling the findings to be generalised to married men from this denominational background. However, the sample size and the dependence on self-report of the respondents can tamper with the accuracy of the findings due to recall bias and/or misunderstanding of the questions, which could affect the generalizability of the data.

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All the authors contributed adequately and agreed on responsibility for the contents of this article. The authors are fully responsible for the contents of the paper and for any plagiarism or other problems of the paper. The manuscript has not been published elsewhere. We affirm that the Nursing Scope Journal has sole rights to the article's copyright.



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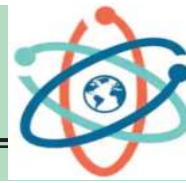
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Conflict of Interest

There is no conflict of interest.

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