



Knowledge and Attitude of Married Women in Kwara State, Nigeria Towards Vasectomy as a Choice of Male Contraception

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Abstract

Despite the well-documented impact men have on women's choice of contraception, it appears that women's input into their partners' decisions about contraception has been undervalued and underutilized. Vasectomy being one of the few options available for males, is not often used as a means of family planning. This study examined the knowledge and attitude of married women in Kwara state, Nigeria towards vasectomy as a choice of their male partner's contraception. Specifically, differences in knowledge and attitude based on selected demographic characteristics were assessed. The study design was descriptive survey type. Six hundred married women were sampled from the six Local government areas selected across the three senatorial districts of Kwara State, Nigeria through a multistage procedure. Two research questions and hypotheses were tested for the study. Data collected were analyzed using percentage and pie-chart to answer the research questions raised while 4-way Analysis of Variance to test the hypotheses postulated at 0.05 alpha level. Results revealed that respondents had inadequate knowledge of vasectomy and negative attitudes towards it as choice of contraceptive for their partners. There was no significant difference in the knowledge of vasectomy among respondents based on years of marriage, family size and religion. However, when tested, a significant difference existed in knowledge of vasectomy based on educational level ($F_{(8, 532)} = 0.665; p > 0.05$). Also, no significant difference was found in the attitude of females on vasectomy as a choice of male contraception based on years of marriage, education, family size and religion in Kwara State, Nigeria ($F_{(8, 532)} = 1.047; p > 0.05$) The findings suggest a need for effective awareness programmes as well as improvement in health talks and counselling topics targeted to enhance their knowledge of vasectomy as well as improve their attitude towards it.

Keywords: Vasectomy, Knowledge, Attitude, Contraception, Married women

Introduction

Vasectomy stands out among the range of contemporary contraceptive methods due to its capacity to empower men with the principal role in managing fertility. According to Ross and Frankenberg (1993), vasectomy not only expands the range of options for users but also plays a role in encouraging male participation in family planning. According to the findings of USAID and Engenderhealth (2007), vasectomy is a form of permanent contraception intended for men who no longer desire additional children. Vasectomy, as a method of permanent contraception, is deemed to be a safer, easier, and more cost-effective alternative to female sterilisation. Despite its comparable effectiveness, it is noteworthy that the utilisation rate of female sterilisation surpasses that of vasectomy by a ratio of five to one. At present, there exists no contraceptive method that surpasses vasectomy in terms of efficacy.

Despite its safety, simplicity, and effectiveness as a family planning method for men seeking a permanent contraceptive solution, vasectomy continues to face challenges due to limited awareness and prevailing attitudes, which discourage men from contemplating the procedure (Karamat, Zarel & Arabi, 2007). According to Muhondwa and Rutenber (1997), the underutilization is sometimes attributed to men's lack of interest in pregnancy reduction, limited knowledge of the procedure, its likeness to castration, among others.

The impact of males on women's decisions about bilateral tubal ligation (BTL) in our societal

context has been widely acknowledged, however the significance of women's involvement in their spouse's decision-making process regarding vasectomy has been undervalued and underutilized. Reports show men in developing countries to make most of the decisions regarding family formation (Akpamu, Nwoke, Osifo, Igbinovia & Adisa, 2010), family planning choice also requires spousal decision even when the choice concerns the woman. This translates to the fact that women may not have a say in the choice of method that concerns them, so much so, one that concerns their partners especially a choice regarded as extreme as vasectomy.

Historically, family planning initiatives in Nigeria have mostly focused on women, as evidenced by the work of Olawepo and Okedare (2006). This emphasis can be attributed to the objective of alleviating women from the burden of excessive childbirth, mitigating maternal and newborn mortality rates (Toure, 1996), and controlling population increase.

However, it is imperative to note that the rate of population expansion remains a matter that necessitates public awareness and concern. According to research findings by Bankole and Singh (1998), men in poor countries are predominantly responsible for making decisions related to family formation. However, it has also been demonstrated that men have a desire for involvement in reproductive concerns and require access to relevant information (PIP, 1994). This chance might be seized to engage men and promote the utilization of male contraceptive methods.

According to a study conducted by Bob's Blog in 2007, female sterilization is more prevalent than male sterilization in the industrialized world, with a ratio of two to one. However, in Asia, the prevalence of female sterilization is significantly higher, with a ratio of eight to one. Similarly, in Latin America and the Caribbean, the prevalence of female sterilization is even more pronounced, with a ratio of fifteen to one. The prevalence of male sterilization in sub-Saharan Africa is insufficient to provide a reliable comparative analysis (Bob's Blog, 2007). According to the Population Reference Bureau (2002), the number of tubal ligation procedures performed globally is more than five times greater than the number of vasectomy treatments. The prevalence of the mentioned condition in Africa is relatively low, with a rare occurrence rate that seldom surpasses 0.1% (Bunce et al., 2007). Moreover, this prevalence has exhibited a consistent level of stability throughout the course of the previous decade.

The inclusion of male contraception within the array of contraceptive methods is a feasible proposition. Nevertheless, it is worth noting that the available options for male are limited, constituting a mere 14% of the global contraceptive landscape. According to Utoo & Utoo (2010), vasectomy is a widely practiced outpatient operation that is characterized by its safety, simplicity and global prevalence. It boasts low failure rates and a reduced likelihood of complications. The authors further opined that despite the prevalence of high acceptance rates in wealthy countries like United States, vasectomy remains somewhat unpopular in most African countries, including Nigeria. Mutihir, Ujah, Ekwempu, Daru and Olabisi (2004); Mutihir and Pam (2008); Ebeigbe Igherese., & Eigbefoh (2011) reiterated that this method of contraception is widely neglected and has notably low rates of acceptability in Nigeria.

The limited utilization of this method of contraception may be ascribed to a dearth of public

knowledge on its efficacy, safety profile, and convenience. According to Ebeigbe et. al. (2011) and Akpamu et al. (2010), the Nigerian Demographic and Health Survey of 2013, reported that the prevalence of awareness of vasectomy was found to be 15.5% among women and 42.8% among men. Muhondwa and Rutenberg (2009) opined that prevalence of misconceptions regarding vasectomy serves as an indication of widespread ignorance. These beliefs encompass the notion that it leads to erectile dysfunction, inability to ejaculate, increased body weight, and its association with the act of castration. The dissemination of precise information throughout a population has demonstrated a positive correlation with the enhancement of perception and tolerance towards vasectomy.

Asare, Otupiri, Apenkwa, and Odotei-Adjei (2017) reported that women view the vasectomy procedure as a convenient method for male partners to engage in promiscuous behaviour and perhaps cheat on their female partners. This perception stems from the fact that vasectomy renders males infertile, eliminating the risk of unintended pregnancies. This however, exposes their partners to the risk of sexually transmitted viruses, including HIV/AIDS. The adoption of vasectomy also does not confer advantages to a subsequent wife in the event of divorce or the demise of a prior spouse. Nevertheless, certain women may consent to their partners undergoing the treatment solely under the condition that both parties would experience health benefits and that it would alleviate the financial strain on the family (Asare et al., 2017).

Incorrect and incomplete information about vasectomy is no doubt the reason of its low prevalence. The ACQUIRE project (2006) reported that barriers posed by lack of knowledge and incorrect or incomplete information concerning vasectomy have been noted in past studies. These barriers include fear of impotence, the equation of vasectomy with castration (Qureshi & Solomon, 1995; Muhondwa et al, 1997; Fapohunda & Rutenberg 1999), wives' concerns about sexual functioning and physical strength of their husband after vasectomy (Ruminjo, 1999), lack of access to vasectomy provision sites (Ross et al, 1993), age, religion and the community one belongs to. This has however raised a research question- 'will women choose vasectomy as a method of contraceptive for their spouse'?

Research Questions

- What is the knowledge of females on vasectomy as a choice of male contraception in Kwara State, Nigeria
- What is the attitude of females towards vasectomy as a choice of male contraception in Kwara State, Nigeria

Research Hypotheses

- There will be no significant difference in the knowledge of females on vasectomy as a choice of male contraception in Kwara State, Nigeria based on level of education, years of marriage, family size and religion
- There will be no significant difference in the attitude of females towards vasectomy as a choice of male contraception in Kwara State, Nigeria based on level of education, years of marriage, family size, religion

Research Methodology

This study was a descriptive survey type of research. The target population for this study comprised married women in Kwara State. There are three (3) senatorial districts i.e., Kwara Central, North and South with each containing 4, 5 and 7 Local Government Areas respectively making the total number of sixteen (16) Local Government Areas in Kwara State. Six hundred (600) married women constituted the sample size for this study using a multistage sampling technique. At the 1st stage, systematic random sampling technique was used to disproportionately select two (2) Local Government Areas from each of the stratified districts in Kwara State making six (6) Local Government Areas that constituted this study. At the 2nd stage, a simple random sampling technique was used to randomly pick hundred (100) married women from each of the selected Local Government Areas to make up 600 married women sampled for this study.

A researcher's designed questionnaire with a reliability coefficient of 0.69 was used for data collection. The questionnaire contained Section A which was used to gather the demographic data such as years of marriage, religion, educational level and family size. Section B (which comprised 12 items structured in a two-response-type of *Yes or No*) was used to elicit females' knowledge of vasectomy while the Section C (which contained 15 items structured in a four-response-type of *Strongly Agree, Agree, Disagree or Strongly Disagree*) was used to obtain data on the attitude towards vasectomy as a choice of male contraception. Data collected were analyzed using percentage and pie-chart to answer the research questions raised for this study while 4-way Analysis of Variance to test the hypotheses postulated for this study at 0.05 alpha level.

Data Analysis and Results

Demographic Data of the Participants

Out of 600 married women sampled for this study, 12.7% (76) having been married less than 10 years, 31.2% (187) having been married for 10-15 years, 32.2% (193) having been married for 16-20 years, and 24.4% (144) having been married for more than 20 years. The majority (438; 73.0%) had university education. The minority (119; 19.8%) belonged to small family sizes, while the majority (283; 47.2%) had moderate family sizes.

Research Questions Analysis

Descriptive statistics of percentage and pie-chart were used to answer research questions.

Question One: What is the knowledge of females on vasectomy as a choice of male contraception in Kwara State, Nigeria?

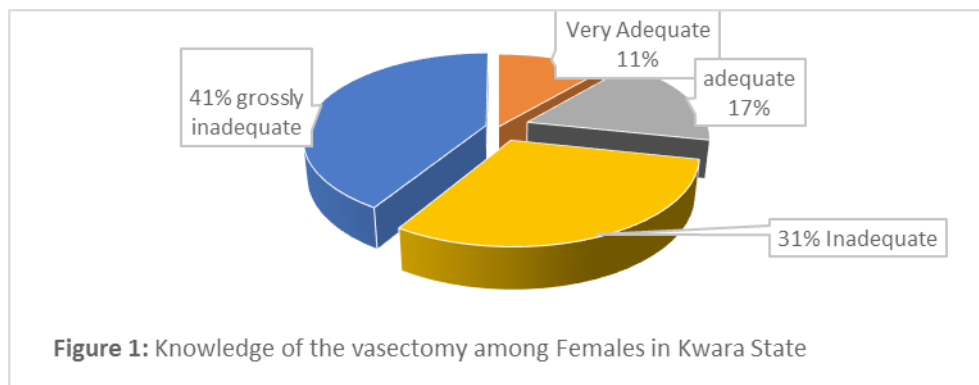
The scores of each female sampled on knowledge of vasectomy were subjected to percentage analysis. Given that the questionnaire contained 12 items structured in two response-type, the minimum, maximum and range score were 12, 24 and 12 respectively. The range was therefore divided by 4-response of Very Adequate; Adequate; Inadequate; and Grossly Inadequate (i.e. $12/4=3$). Thus, respondents' scores that fell within 12 – 15; 16 – 18; 19 – 21 and 22 – 24 were categorized as Grossly Inadequate (GI), Inadequate (I), Adequate (A) and Very Adequate (VA) knowledge of

vasectomy respectively. The statistics of the participants' responses are presented in Table 1

Table 1: Knowledge of females on vasectomy as a choice of male contraception in Kwara State, Nigeria

Knowledge of Vasectomy	Score Range	Frequency	Percentage
Very Adequate	22 – 24	68	11.3%
Adequate	19 – 21	102	17.0%
Inadequate	16 – 18	183	30.5%
Grossly Inadequate	12 – 15	247	41.2%
Total		600	100.0%

Table 1 reveals that out of 600 (100%) females sampled for this study, 68 (11.3%) of them had very adequate knowledge of vasectomy and 102 (17.0%) were of adequate knowledge. However, 183 (30.5%) had inadequate knowledge while 247 (41.2%) had grossly inadequate knowledge of vasectomy. Thus, the knowledge of the vasectomy was grossly inadequate among females in Kwara State. This is also depicted in Figure 1.



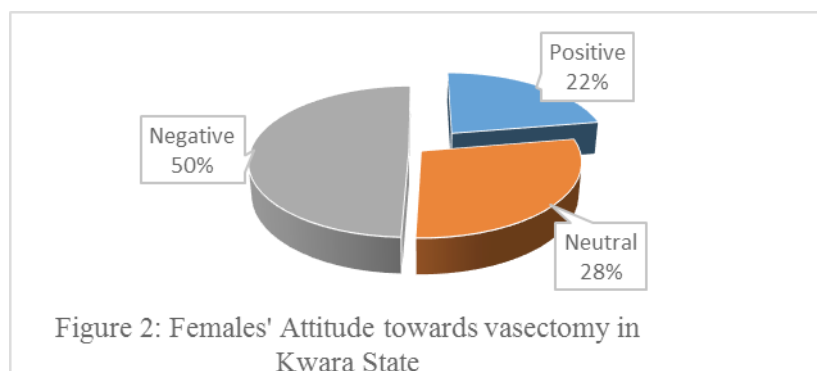
Question Two: What is the attitude of females towards vasectomy as a choice of male contraception in Kwara State, Nigeria

The scores of each female sampled on attitude towards vasectomy were subjected to percentage analysis. Given that the questionnaire contained 15 items structured in four-response-type, the minimum, maximum and range score were 15, 60 and 45 respectively. The range was therefore divided by 3-response of Positive, Neutral and Negative (i.e. $45/3=15$). Thus, females whose scores fell within 15 – 30; 31 – 45; and 46 – 60 were categorized as Negative, Neutral and Positive attitude towards vasectomy respectively. The summary statistics is presented in Table 2

Table 2: Attitude of Females towards vasectomy as a choice of male contraception in Kwara State, Nigeria

Attitude towards Vasectomy	Score Range	Frequency	Percentage
Positive	46 – 60	134	22.3%
Neutral	31 – 45	169	28.2%
Negative	15 – 30	297	49.5%
Total		600	100.0%

As shown in Table 2, 134 (22.3%) of the females were of positive attitude towards vasectomy, 169 (28.2%) had neutral attitude while 297 (49.5%) of them dispensed negative attitude towards vasectomy. Hence, the attitude of the majority of females towards vasectomy in Kwara State was negative. This is also depicted in Figure 2.



Hypotheses Testing

Inferential statistics of 4-way Analysis of Variance was used to test the hypotheses at 0.05 alpha level.

Ho₁: There will be no significant difference in the knowledge of females on vasectomy as a choice of male contraception based on level of education, years of marriage, family size and religion in Kwara State, Nigeria.

Table 3a: 4-way Analysis of Variance showing the difference in the knowledge of females on vasectomy as a choice of male contraception based on level of education, years of marriage, family size and religion in Kwara State, Nigeria

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	184.546 ^a	67	2.754	.794	.880
Intercept	13965.609	1	13965.609	4023.801	.000
Years of Marriage	3.103	3	1.034	.447	.640
Educational Level	30.481	2	15.240	2.927	.033
Family Size	2.938	2	1.469	.423	.655
Religion	9.033	2	4.516	1.301	.273
Educational Level * Years of Marriage	18.473	6	3.079	.887	.504
Educational Level * Family Size	6.223	4	1.556	.448	.774
Educational Level * Religion	8.309	2	4.155	1.197	.303
Years of Marriage * Family Size	30.547	6	5.091	1.444	.187
Years of Marriage * Religion	16.467	3	5.489	1.581	.193
Family Size * Religion	2.382	2	1.191	.343	.710
Educational Level*Years of Marriage* Family Size	24.797	11	2.254	.650	.786
Educational Level * Years of Marriage * Religion	8.357	6	1.393	.401	.878
Educational Level*Family Size * Religion	13.375	4	3.344	.963	.427
Years of Marriage * Family Size * Religion	15.699	6	2.617	.754	.607

Educational Level *Years of Marriage * Family Size * Religion	18.469	8	2.309	.665	.722
Error	1846.439	532	3.471		
Total	123783.000	600			
Corrected Total	2030.985	599			

a. R Squared = .091 (Adjusted R Squared = -.024)

Table 3a shows that on the basis of years of marriage, family size and religion, no statistical difference existed among females' knowledge of vasectomy as a choice of male contraception in Kwara State ($p > 0.05$). Given the F-value of 0.665 obtained with a p-value of 0.722 when computed at 0.05 alpha level (**as bolded in the table**), the null hypothesis one was retained. Hence, there was no significant difference in the knowledge of females on vasectomy as a choice of male contraception based on years of marriage, family size and religion in Kwara State, Nigeria ($F_{(8, 532)} = 0.665; p > 0.05$)

However, a significant difference occurred among females' knowledge of vasectomy based on educational level ($p < 0.05$). thus, table 3b presents which of the married women made the difference on the basis of their educational levels.

Table 3b: Duncan' Post-hoc analysis showing the difference in females' knowledge of vasectomy based on educational level

Educational Levels	No	Subset	
		1	2
Primary Education	69	13.651	
Secondary Education	93	14.187	
Tertiary Education	438		16.731
Sig		1.000	.0392

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square (Error) = 3.471.

a. Uses Harmonic Mean Sample Size = 139.828.

b. The group sizes are unequal. The harmonic mean of the group sizes is used.

Type I error levels are not guaranteed.

c. Alpha = .05.

As revealed in Table 3b, females with tertiary level of education were observed to have more knowledge of vasectomy as a choice of male contraception having the highest mean score of 16.73 than those with secondary and primary education having the mean scores of 14.19 and 13.65 respectively.

Ho₂: There will be no significant difference in the attitude of females towards vasectomy as a choice of male contraception in Kwara State, Nigeria based on level of education, years of marriage, family size, religion

Table 4: 4-way Analysis of Variance showing the difference in the attitudes of females on vasectomy as a choice of male contraception based on level of education, years of marriage, family size and religion in Kwara State, Nigeria

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	902.558 ^a	67	13.471	1.194	.150
Intercept	45338.647	1	45338.647	4020.083	.000
Educational Level	6.422	2	3.211	.285	.752
Year of Marriage	10.315	3	3.438	.305	.822
Family Size	11.696	2	5.848	.519	.596
Religion	3.577	2	1.789	.159	.853
Educational Level * Years of Marriage	36.429	6	6.071	.538	.779
Educational Level * Family Size	34.963	4	8.741	.775	.542
Educational Level * Religion	15.982	2	7.991	.709	.493
Years of Marriage * Family Size	100.735	6	16.789	1.489	.180
Years of Marriage * Religion	10.562	3	3.521	.312	.817
Family Size * Religion	12.985	2	6.493	.576	.563
Educational Level * Year of Marriage * Family Size	181.183	11	16.471	1.460	.143
Educational Level*Year of Marriage * Religion	89.464	6	14.911	1.322	.245
Educational Level * Family Size * Religion	47.577	4	11.894	1.055	.378
Year of Marriage * Family Size * Religion	69.834	6	11.639	1.032	.403
Educational Level*Year of Marriage*Family Size* Religion	94.507	8	11.813	1.047	.399
Error	5999.916	532	11.278		
Total	414898.000	600			
Corrected Total	6902.473	599			

a. R Squared = .131 (Adjusted R Squared = .021)

As revealed in Table 4, all the factors i.e. years of marriage, educational level, religion and family size considered individually do not have statistical intervention on the attitude of females towards vasectomy as a choice of male contraception ($p > 0.05$). Hence, given the F-value of 1.047 obtained with a p-value of 0.399 when computed at 0.05 alpha level, the null hypothesis two was retained. Thus, no significant difference was found in the attitude of females on vasectomy as a choice of male contraception based on years of marriage, education, family size and religion in Kwara State, Nigeria ($F_{(8, 532)} = 1.047; p > 0.05$).

Discussion

Based on the researchers' current understanding and expertise, this study represents one of the few examining married women's knowledge and attitudes towards vasectomy. Numerous research conducted throughout various regions, with a special emphasis on Africa, that have examined attitudes and knowledge regarding vasectomy have mostly concentrated on men.

The knowledge of vasectomy as a form of contraception among respondents for this study was inadequate as they scored very low in response to questions testing their knowledge on vasectomy.

Out of the 600 respondents, only 68 (11.3%) had very good knowledge of vasectomy, majority had poor knowledge 430 (71.7%). This is consistent with most studies in this environ, for example, the study of Tijani, Ojewola, Yahya, Oluwole and Odusanya (2013) showed that women (75%) had poor knowledge of vasectomy as a method of contraception. This may not be farfetched from the fact that women usually receive counseling on Tubal Ligation but not vasectomy when they go for Family Planning services. However, Ebeigbe et al. (2011) revealed that most of the respondents in their study had good knowledge of Vasectomy, this was because respondents were doctors and as such, would have received training on various forms of contraception. Also, the study of Gad (2020) showed that most of the respondents (married men and women), had overall good knowledge of vasectomy however, this was attributed to the fact that the study was conducted in a health centre.

The attitude of majority of female respondents towards vasectomy in this study was negative. This finding corroborates the finding of Asare et. al. (2017), which revealed that the attitudes of urban Ghanaian women on vasectomy were predominantly negative, and they regarded vasectomy as an unacceptable method of contraception. The women virtually had no reasons to encourage their partners to undergo a vasectomy. This was also in line with the study of Tijani et al. (2013), where the attitudes of women towards their husbands receiving a vasectomy was poor. Though the study made a comparison between men and women, but the women appeared to be more averse to it than the men. Misconceptions about the procedure appeared to be the main factor responsible.

When sorted for selected demographic characteristics, this study revealed that, no statistical difference existed among the married women's knowledge of vasectomy based on years of marriage, family size and religion, however, a significant difference occurred among respondents' knowledge of vasectomy based on educational level. Married women with tertiary education were observed to have more knowledge of vasectomy as a choice of male contraception than female with secondary and primary education. The study of Yesuneh, Momina, Feleke, Gebresilasea, Rediet, Minychil, Abebaw and Mickiale (2023) was similar to the present study where it was found that educational status caused a significant difference in the knowledge of vasectomy among respondents, respondents who were college or university graduates or higher were 4.1 times more likely to have good knowledge about vasectomy. However, the same study revealed a significant difference in knowledge of vasectomy based on family size. These findings also corroborate the work of Tijani et. al. (2013) which showed that the effect of religion on knowledge of vasectomy was not statistically significant among their respondents.

No significant difference was found in the attitude of females on vasectomy as a choice of male contraception based on years of marriage, education, family size and religion in Kwara State, Nigeria. In the study of Yesuneh et. al. (2023), 82.6% of the married women agreed that it was against their religious belief for a man to get a vasectomy. This finding of Onasoga, Edoni and Ekanem (2013) also found that religion influenced attitude towards vasectomy to up to 72.1% of respondents similar findings were noted in a study conducted in Rwanda (Ntakarutimana et al, 2019). In the Focus Group Discussion (FGD) conducted in the study of Pallangyo, Msoka, Brownie and Holroyd (2020), a key influence on attitude towards vasectomy was identified to be religious beliefs. Majority of female respondents interviewed perceived men who had a vasectomy as living against "God's plan." Also, the study of Akpamu et. al. (2010) revealed that on religious belief, all of the Muslim respondents had

negative attitude towards vasectomy as male contraceptive. In the study of Utoo and Utoo (2010), religion was noted to negatively affect the attitude towards vasectomy by women. This is also similar to findings of a study of Ibrahim and Okolo (1997) done in Sokoto, Northern Nigeria where it was observed that the use of family planning methods for birth/population control was traditionally considered strictly unislamic and therefore culturally unacceptable. The study of Yesuneh et al. (2023) further revealed a significant difference in attitude towards vasectomy caused by years of marriage.

Conclusion

Based on the findings of this study, it could be concluded that females in Kwara State had inadequate knowledge of vasectomy while their attitude was negative towards vasectomy. Although the impact of males on a woman's contraception choices is widely recognized, the significance of women's influence on their partner's decision about vasectomy has been undervalued and underutilized. The findings of this study indicate that the responsibility for the low level of acceptance of vasectomy in developing countries may not only rest with men. The women's attitude towards their spouses' use of vasectomy is equally discouraging. The approach for enhancing this tendency should entail more focused endeavors through the promotion of women's education, economic empowerment, the transmission of knowledge, and enlightenment campaigns led by family planning professionals. The participation of religious leaders and traditional rulers is essential for enhancing knowledge and acceptance of vasectomy in Low Middle Income Countries (LMICs) such as Nigeria.

References

- Akpamu, U., Nwoke, E. O., Osifo, U. C., Igbinovia, E. N. S. & Adisa, A. W. (2010). Knowledge and Acceptance of 'Vasectomy as a Method of Contraception' amongst Literate Married Men in Ekpoma, Nigeria. *African Journal of Biomedical Research*, 13(2):
- Bunce, A., Guest, G., Searing, H., Frajzyngier, V., Riwa, P., Kanama, J., & Achwal, I. (2007). Factors affecting vasectomy acceptability in Tanzania. *International family planning perspectives*, 33(1), 13–21. <https://doi.org/10.1363/3301307>
- Ebeigbe, P. N., Igberase, G. O., & Eigbefoh, J. (2011). Vasectomy: a survey of attitudes, counseling patterns and acceptance among Nigerian resident gynaecologists. *Ghana medical journal*, 45(3), 101–104.
- Engenderhealth (EH). (2007). No-scalpel vasectomy curriculum participants' handbook. A training course for vasectomy providers and assistants. 2nd edition. New York: USAID and Engenderhealth
- Ibrahim, M. T. & Okolo, R. U. (1997) Profile of contraceptive acceptors in UDUTH, Sokoto, Nigeria. *The Nigerian Medical Practitioner*, 33, 9-13.
- Keramat, A., Zarei, A., & Arabi, M. (2011). Barriers and facilitators affecting vasectomy acceptability (a multi stages study in a sample from north eastern of Iran), 2005-2007. *Asia Pacific family medicine*, 10(1), 5. <https://doi.org/10.1186/1447-056X-10-5>
- Muhondwa, E & Rutenberg, N. (1997). A study of the effects of the vasectomy promotion project on knowledge, attitudes and behaviour among men in Dar es Salaam. Nairobi, Kenya, Population Council, Africa Operations Research and Technical Assistance Project, 1997

- Mutihir, J. T., Ujah, I. A., Ekwempu, C. C., Daru, P. H. & Olabisi, A. A. (2004). Acceptability of vasectomy in Jos, Northern Nigeria. *Tropical Journal of Obstetrics and Gynaecology* 21(1):56-7 DOI: [10.4314/tjog.v21i1.14467](https://doi.org/10.4314/tjog.v21i1.14467)
- Mutihir, J. T. & Pam, V. C. (2008). Overview of contraceptive use in Jos University Teaching Hospital, North Central Nigeria. *Nigerian Journal of Clinical Practice*. 11(2):139-143. PMID: 18817054. <https://europepmc.org>
- National Population Commission (NPC) [Nigeria] and ICF International. Nigeria Demographic and Health Survey (2013). Abuja, Nigeria, Rockville, Maryland, USA: NPC and ICF International; 2014.
- Olawepo, R. A. & Okedare, E. A. (2006). Men's Attitudes Towards Family Planning in a Traditional Urban Centre: An Example from Ilorin, Nigeria, *Journal of Social Sciences*, 13:2, 83-90, DOI: [10.1080/09718923.2006.11892535](https://doi.org/10.1080/09718923.2006.11892535)
- Onasoga O. A., Edoni E. E. & Ekanem J. (2013) Knowledge and attitude of men towards vasectomy as a family planning method in Edo State Nigeria. *Journal of Research in Nursing and Midwifery* (JRNM) 2(1): 13–21 <http://www.interestjournals.org>
- Pallangyo, E. S., Msoka, A. C., Brownie, S., & Holroyd, E. (2020). Religious beliefs, social pressure, and stigma: Rural women's perceptions and beliefs about vasectomy in Pwani, Tanzania. *PloS one*, 15(3), e0230045. <https://doi.org/10.1371/journal.pone.0230045>
- Ross, J. A. & Frakenberg, E. (1993). Findings from two decades of family planning research. *The population Council. New York*. www.cpc.unc.edu
- Tijani, K. H., Ojewola, R. W., Yahya, G. L., Oluwole, A. A., & Odusanya, B. (2013). Attitudes and acceptance of nigerians towards vasectomy--a comparison of married men and women in lagos. *East African medical journal*, 90(3), 89–94.
- Touré L. (1996): Male Involvement in Family Planning A Review of the Literature and Selected Program Initiatives in Africa. *Support for Analysis and research in Africa, USAID (SARA)*. <https://www.eldis.org/organisation/A3648>
- Utoo, B. T. & Utoo, P. M. (2010). Awareness and attitude of women towards their spouse's use of vasectomy as a fertility control method in Jos, North-Central Nigeria. *Jos Journal of Medicine* 2010; 5(1):26-9. (1) Accessed Oct 08 2023 DOI:[10.4314/jjm.v5i1.62019](https://doi.org/10.4314/jjm.v5i1.62019).
- Yesuneh, D. W., Momina, A., Feleke, G., Gebresilasea, G. U., Rediet, G., Minychil, D. Abebaw, K. & Mickiale, H. (2023). Knowledge, Attitude and Associated Factors towards Vasectomy among Married Men in Arba Minch Town, Southern Ethiopia, 2021; A Cross-Sectional Study. *Open Access Journal of Contraception*, 14:1-13, DOI: [10.2147/OAJC.S387836](https://doi.org/10.2147/OAJC.S387836)