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Knowledge and Acceptability of Vasectomy Among Male Health Workers in Teaching Hospitals in Ogbomoso

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Abstract
Vasectomy is a minor and effective surgical method for permanent contraception in men. Despite its advantages, globally, female sterilizations outnumber vasectomies due to factors like limited awareness, cultural and religious influences, and fears about sexual performance in regions like Africa, including Nigeria. This study assesses knowledge and acceptability of vasectomy among male health workers in Teaching Hospitals in Ogbomoso with the aim of increasing its awareness and acceptability using standard techniques among 223 male healthcare workers who met the inclusion criteria. The results showed that larger percentages of the respondents are within the age range of 30-39 years, 94.6% of the respondents knew that contraception is important. The majority of male health workers (89.2%) had good knowledge of vasectomy nevertheless the willingness to accept the procedure is poor as only 29.1% of the respondents indicated acceptability. Cultural and religious beliefs are among the barriers identified among the respondents. In conclusion, more than two-thirds of participants have a high knowledge of vasectomy, but its utilization remains low due to socio-cultural beliefs, access, and religious beliefs. Addressing these factors through educational campaigns, counselling, and training can increase awareness and acceptance of vasectomy as a family planning method.

Keywords: Knowledge, Acceptability, Vasectomy, Male health workers
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1.2 Introduction

1.3 Contraception, also known as birth control, is the use of medicines, devices, or surgery to prevent pregnancy (Jain & Muralidhar, 2011). There are many different types. Some are reversible, while others are permanent. Some types can also help prevent sexually transmitted diseases (STDs). The use of contraception is beneficial in the advancement of human rights; helping people to determine the number and spacing of their children (Anderson & Johnston, 2023). The methods of contraception are available to include oral contraceptive pills, implants, injectable, patches, vaginal rings, intrauterine devices, condoms, male and female sterilization (Vasectomy and tubal ligation), lactational amenorrhoea methods, withdrawal and fertility awareness-based methods. In Nigeria, the percentage of couples in the reproductive age group using modern contraception is 17% (NDHS, 2018) compared to about 50% represented worldwide (UN, World Fertility and Family Planning 2020).

Vasectomy is a minor surgical procedure done as a method of permanent

contraception for men it is a relatively simple, safe and inexpensive yet highly effective method of contraception with a success rate of more than 99% at preventing pregnancy (Starbird et al., 2016). The American Urological Association guidelines of 2012 suggested that vasectomy is one of the most cost-effective contraceptives with an estimated cost per couple of years of protection (CYP) that is less than tubal ligation (Coward et al., 2014). The rate of unwanted pregnancies after vasectomy is generally less than 1% (Goodkind et al., 2018). It does not affect testosterone levels, pleasure or any other problems related to sex life. The procedure is also not known to have any effect on sexual function and ejaculation; less invasive, less time-consuming and possibly cheaper than tubal ligation (Corona & Maggi, 2022). Globally, 5 times as many female sterilizations are performed as vasectomies despite being associated with increased morbidity and mortality, higher cost, and increased use of general anaesthesia (Pallangyo et al., 2020). In Africa, Vasectomy acceptance is limited by several factors which include poor awareness and education, religion, culture, poverty and scarcity of skilled vasectomy providers (Shongwe et al., 2019). Furthermore, misunderstandings about vasectomy especially, the fear of decreased sexual performance as a result of the procedure limit its acceptance; these factors may contribute to the report that Vasectomy is not readily acceptable as a method of fertility control in Nigeria (Shongwe et al., 2019).

Nigeria is the most populous black nation and is ranked the seventh most populated country in the world, with a population of over 200 million people (Abubakar et al., 2022). The high population of Nigeria is related to its high growth rate of 2.5% per annum and fertility rate of 5.3 children per woman (Brown et al., 2020). Over-population, however, has been associated with a reduced standard of living, unemployment, and a pervasive negative effect on the family and society (Chu & Karr, 2017). The threat to the existence of mankind makes procreation very essential as a way of maintaining the human population but in as much as procreation is necessary; Family planning has beneficial effects in terms of sustainable socioeconomic development and protection of the environment (Vlassoff, 2007). Unfortunately, most family planning programs in Nigeria have primarily targeted women (Dahal et al., 2022) and men often do not participate in reproductive health matters. Family planning is needed to curb the high risk of morbidity and mortality associated with childbearing (Adebowale & Palamuleni, 2023). Over the years; the burden of family planning has been placed on women with very little to no attention on the men(Kassim & Ndumbaro, 2022), Nigerian men still have poor knowledge and attitude towards family planning despite the global move to increase the involvement of men in reproductive health matters (Mandara, 2012). A concerted effort is therefore needed to enhance men's knowledge and increase their involvement in reproductive health (Mandara, 2012). Over the last several decades, national family planning initiatives have led to significant gains in many developing countries, exemplified by improvements in key Family Planning 2020 (Jain & Muralidhar, 2011).

This study seeks to investigate the knowledge and acceptability of vasectomy among male health workers in Teaching

Hospitals in Ogbomoso with the aim of increasing its awareness and acceptability.

Material and Methods

1.4 Study Area

The study was carried out at Bowen University Teaching Hospital (BUTH), Ogbomoso, the Teaching Hospital annex of the College of Health Sciences, Bowen University, Iwo and Ladoke Akintola University of Technology (LAUTECH) Teaching Hospital, Ogbomoso, which serves as the Teaching Hospital annex of College of Health Sciences, Ladoke Akintola University of Technology in Ogbomoso, Oyo- State, Nigeria.

The study population was the male health workers at Bowen University Teaching Hospital and LAUTECH Teaching Hospital, Ogbomoso. Consented male health workers were recruited from both Teaching Hospitals.

i. Inclusion criteria
   - ✧ Married male
   - ✧ Health worker working in a teaching hospital located in Ogbomoso.

ii. Exclusion criteria
   - ✧ Unmarried male

It is a cross-sectional design study and with the aid of Fisher's formula, the sample size calculated was 225. Data collection involved the use of a well-structured questionnaire consisting of 3 sections with a total of 30 items of qualitative and quantitative questions. Section A was designed to collect data on the socio-demographic characteristics of the men, section B was designed to elicit knowledge and awareness of vasectomy and Section C was designed to collect information on the acceptability of vasectomy. Ethical approval for the study was obtained from the research Ethics Committee, and verbal informed consent was taken from consented male health workers before their inclusion in the study.

Data Collection: A convenience sampling technique was used in recruiting the male health workers at the Teaching Hospitals in Ogbomoso that met the inclusion criteria. Two-thirds of the calculated sample size was recruited from LAUTECH Teaching Hospital and the remaining one-third of the calculated sample size was recruited from Bowen University Teaching Hospital based on the numerical strength of the male health workers in each hospital. The study utilized primary data which were collected through the use of questionnaires from respondents.

Data Analysis: Statistical analysis was done using the IBM SPSS version 25.0 software package.

In the questionnaire, 20 questions assessed the knowledge of vasectomy. Participants who scored ≥ 70% under questions on knowledge were classified as having good knowledge, while scores below 70% were classified as having poor knowledge.

Result

A total of 230 questionnaires were administered, and 223 were returned properly filled and analyzed, giving a response rate of 97.0%. Table I represents the socio-demographic characteristics of the respondents in the study, the majority of the respondents were in the age range of 30-49 years (69.1%), followed by those aged 50 years and above (16.6%). More than half (56.1%), of the respondents, were Christians the remaining 43.9% were Muslims (43.9%). 215 respondents (96.4%) correctly identified contraception as the use of medicines, devices, or

surgery to prevent pregnancy, and all respondents identified at least one method of contraception (Table II); the most well-known type of contraceptive is condoms, with 100% of the respondents being aware of them, (29.1%) indicated wiliness to accept vasectomy (Table II). The majority of male health workers (89.2%) had good knowledge of vasectomy (Figure I).

Factors influencing the acceptability of vasectomy among male health workers show the majority (92.8%) understood that vasectomy involves surgery, with 81.2% disagreeing that it is difficult. About 43.9% believed vasectomy is painful, and 15.2% thought recovery is long. Among concerns raised, 19.3% believed it makes sex less enjoyable while 13.5% thought sperm would build up after vasectomy, 18.8% associated it with an increased risk of prostate cancer, 38.1% of the respondents stated sexual dysfunction as a concern to vasectomy (Table III). Most believed vasectomy was irreversible (76.2%). Cultural and religious belief was reported as barriers by 21.5% and 20.6%, respectively (Table IV).

1.5 Discussion

1.6 The respondents were mainly Yoruba 96.9% followed by the Igbo 1.3%. this is due to the location of the study area which is Yoruba dominated. The age of most of the respondents is between 30-59 years, this is because the study focused on the active workforce in the health facilities. About 42.6% were doctors, the orderlies were 33.2% and laboratory scientists were 12.1%. The majority of respondents (87.9%) in this study were aware of contraception, which is consistent with the study by (Akpamu et al, 2010) who found that 100% and 86.7% of respondents respectively knew about family planning and contraceptives.

1.7 This study shows a high level of knowledge of vasectomy (89.2%), this finding is comparably similar to the finding from a study carried out by (Grace et al, 2022) at the University of Ilorin Teaching Hospital, Ilorin among male health workers where 96% of the respondents knew about vasectomy. Similarly, a study conducted in India found that healthcare workers had a high level of knowledge of vasectomy (90%) (Mishra et al, 2018). The reason for the high level of knowledge of vasectomy could be attributed to the fact they were hospital-based studies conducted among health workers where knowledge is expected to be high. Contrarily, studies carried out in rural communities revealed that the knowledge of vasectomy was found to be low. In the Okada community of Edo state, 62.5% of respondents were found to have no knowledge about the procedure. Similarly, in the Ekpoma community in Edo state, only 23.3% of the respondents had knowledge of vasectomy (Onasoga et al, 2013) more in a study done by Nwankwo et al among Secondary School male teachers in Chikum, Kaduna State only 6.7% had good knowledge of vasectomy (Nwanko et al,2022)

The awareness of vasectomy is high among the respondents; 98,2% of the respondents who were aware of vasectomy understood its meaning (68.6%) and knew who could use it for family planning (78.5%). This study found that most respondents who were

aware of vasectomy heard about it from a health facility (82.1%), these findings were similar to reports from Ilorin among male health workers where awareness about vasectomy was 93.5%, and the commonest source of information was the health facility (55.3%) (Grace et al, 2022). The reported high level of awareness of vasectomy is a reflection of the study participants who were healthcare workers, unlike another study among non-health workers, which reported that 62.5% of the respondents were not aware of vasectomy (Onasoga et al, 2013). Also, the important contribution of the health facility as the major source of information about vasectomy corroborates a report from Rwanda with 91.2% of information from health facilities(Ntakirutimana et al, 2019).

However, despite the high level of knowledge and a good understanding of vasectomy, 29.1% of the respondents, compared to 1.6% in a report among non-health workers (Akpanmu et al, 2010) intended to undergo vasectomy on completion of their desired family size. This suggests that aversion to vasectomy remains prevalent among men in low-income countries, irrespective of the level of education or knowledge about the procedure. Previous studies in Nigeria have reported low levels of acceptability regardless of level of knowledge about the procedure among different study populations, a study conducted among male health workers in Ilorin, Kwara state of the North Central zone showed that only 16.6% of them found vasectomy acceptable (Grace et al, 2022) and in Ilishan-Remo, Ogun state a study conducted among married non-health worker men reported that only 37% of them found vasectomy acceptable (Owopetu et al, 2015). However, a study conducted in Uganda among men attending a reproductive health clinic reported that 45.8% of them found vasectomy acceptable (Kigozi et al, 2016). The low acceptability of vasectomy observed in this study and previous studies from Nigeria highlights the need for targeted educational campaigns and counselling to increase awareness and dispel misconceptions about the procedure.

Moreover, 21.5% of the respondents cited cultural belief as a barrier while 20.6% cited religious belief, 26% of male health workers believed that vasectomy decreases sex drive, and 19.3% believed that it makes sex less enjoyable. The report of fear of sexual dysfunction, other side effects as well and cultural and religious beliefs as the common barriers to acceptance of vasectomy is similar to reports from previous studies (Onasoga, et al, 2013, Appiah et al, 2018) in Nigeria. Worthy of mentioning is the fact that previous studies have shown that the fear of sexual dysfunction is not only expressed by men, concerns of erectile dysfunction resulting from vasectomy were expressed commonly by women and men (Tamunomie et al, 2016, Ezegwui et al, 2009 & Utoo et al, 2010). Men and women in these studies worried that vasectomy resulting in loss of libido would consequently provoke promiscuity among wives since male partners would no longer be able to satisfy them sexually. However, consistent evidence from previous studies has shown that vasectomy does not affect sexual function, several studies undertaken in recent years have also confirmed that men after undergoing a vasectomy experience markedly improved erectile function, orgasms, and sexual satisfaction and feel safer and more confident in their sexual

lives after surgery (Engl et al, 2017 & Bertero et al, 2005). Additionally, their female partners reported marked improvements in terms of sexual arousal, satisfaction, and orgasm, as well as lubrication and libido (Bertero et al, 2005). In this study, 15.2% of male health workers believed that the recovery time is long and difficult. Similarly, a study conducted in Pakistan reported that men perceived the recovery period as a barrier to vasectomy uptake (Khan et al, 2016). In the overall, the factors influencing the acceptance of vasectomy among male health workers are multi-faceted and complex. To increase vasectomy uptake among male health workers, it is important to address these factors through targeted interventions, such as education, counselling, and outreach programs.

Conclusion

This study concludes that there is an aversion to vasectomy as a form of male contraception among male health workers despite adequate awareness and knowledge about the procedure. The low acceptability of vasectomy among male health workers is attributed to misconceptions about the procedure, cultural and religious beliefs and fear of side effects. An integrated public policy is required to promote male involvement in reproductive health. Family planning programmes must be meaningful socioculturally and the inclusion of men in these programmes should be given priority, this will go a long way in mitigating the aversion, breaking the barriers to personal use of vasectomy among the male health workers and the general male population eligible for the procedure. Moreso, researchers should expedite actions to make reversible male contraceptives readily available to address unmet needs.

Conflict of Interest

There is no conflict of interest of any kind.

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Appendix

Table I: *Socio-demographic Characteristics of the Participants*

Variable	Categories	Frequency	Percent
Age	20-29	32	14.3
	30-39	92	41.3
	40-49	62	27.8
	50-59	29	13.0
	60-6	8	3.6
Religion	Christianity	125	56.1
	Islam	98	43.9
Occupation	Doctor	95	42.6
	Nurse	17	7.6
	Lab scientist	27	12.1
	Pharmacist	10	4.5
	Orderly	74	33.2
Ethnicity	Yoruba	216	96.9
	Igbo	3	1.3
	Other	4	1.8
Marital Status	Married	216	96.9
	Separated	3	1.3
	Divorced	4	1.8

How long have you been married	1-2	19	8.5
	3-5	37	16.6
	6-10	65	29.1
	above 10 years	77	34.5
Number of children	1-2	105	47.1
	3-4	81	36.3
	5 and above	12	5.4

Table II: Knowledge of the Respondents on Vasectomy

Variable	Categories	Frequency	Percent
What is contraception	Use of medicines, devices or surgery to prevent pregnancy	215	96.4
	use of medicines to cause an abortion	4	1.8
	Use of medicines to prevent sexually transmitted diseases	4	1.8
Is contraception important	Yes	211	94.6
	No	12	5.4
Awareness of male contraceptives	Yes	207	92.8
	No	16	7.2
Male contraceptives know	Withdrawal method	200	89.7
	Condoms	223	100.0
	Vasectomy	219	98.2
	Abstinence	102	45.7
Have you heard of vasectomy	Yes	219	98.2
	No	4	1.8
Do you know how vasectomy works	Yes	204	91.5
	No	19	8.5
What do you understand by vasectomy	Removal of the testes	42	18.8
	Removal of the scrotum	28	12.6
	Cutting of the vas deferens	153	68.6
Do you know who can use vasectomy for family planning	Yes	200	89.7
	No	23	10.3
If you answered yes, who can get a vasectomy	Men who have no children	28	12.6
	Men who have many children	20	9.0
	Men who have completed their desired family size	175	78.5
Will you like to do the procedure if conditions for it are appropriate	Yes	65	29.1
	No	158	70.9

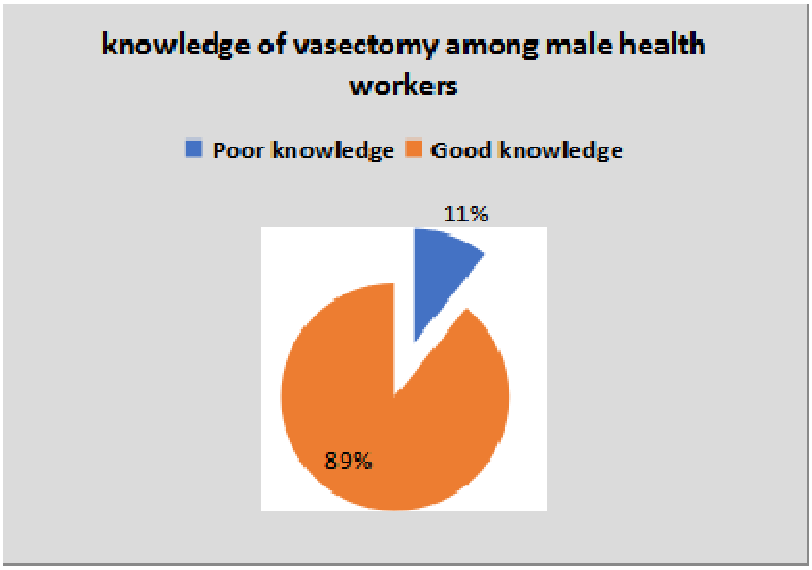

Figure I: Knowledge of Vasectomy among Male Health Workers

Table III: *Factors Influencing the Acceptance of Vasectomy among Male Health Workers*

Variable	Categories	Frequency	Percent
It requires surgery	Yes	207	92.8
	No	16	7.2
It is a difficult procedure	Yes	42	18.8
	No	181	81.2
It is painful	Yes	98	43.9
	No	125	56.1
Recovery time is long and difficult	Yes	34	15.2
	No	189	84.8
It decreases sex drive	Yes	58	26.0
	No	165	74.0
It makes sex less enjoyable	Yes	43	19.3
	No	180	80.7
Sperm will build up in your body	Yes	30	13.5
	No	193	86.5
Increases the risk of prostate cancer	Yes	42	18.8
	No	181	81.2
Doesn't prevent pregnancy	Yes	20	9.0
	No	203	91.0
It is permanent	Yes	147	65.9
	No	76	34.1
It is expensive	Yes	85	38.1
	No	138	61.9

Early resumption of sex after vasectomy is possible	Yes	99	44.4
	No	124	55.6
Being sterile affects the emotions	Yes	108	48.4
	No	115	51.6
It is simpler and safer than female sterilization	Yes	116	52.0
	No	107	48.0

Table IV: *Concerns of the Respondents on Acceptability to Vasectomy*

Variable	Categories	Frequency	Percent
I'm not willing to share family planning responsibilities with my wife	Yes	63	28.3
	No	160	71.7
Fear of sexual dysfunction	Yes	85	38.1
	No	138	61.9
Fear of side effects	Yes	119	53.4
	No	104	46.6
The procedure is irreversible	Yes	170	76.2
	No	53	23.8
My culture is against it	Yes	48	21.5
	No	175	78.5
It might result in infidelity	Yes	90	40.4
	No	133	59.6
My religion is against it	Yes	46	20.6
	No	177	79.4
Family planning is only for women	Yes	23	10.3
	No	200	89.7