KNOWLEDGE, INTENTIONS, AND BARRIERS TO USE VASECTOMY AMONG MARRIED MEN IN ETHIOPIA

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ABSTRACT

BACKGROUND: Among the arrays of permanent contraceptive methods, vasectomy is the least known method of contraception. Even when men are aware of vasectomy, their understanding is often incomplete or incorrect. So, the aim of the study was to assess knowledge, intention, and barriers to using vasectomy among married men living in Addis Ababa, Ethiopia.

METHOD: A community-based cross-sectional study was conducted on 264 participants in the Arada sub-city, Addis Ababa, Ethiopia. Data were collected via face-to-face interviews using a pretested structured questionnaire. Then the data were checked for completeness and entered into SPSS version 26 for analysis. A descriptive analysis was performed to describe the socio-demographic status, intention, and barriers to using vasectomy. A bivariable and multivariable logistic regression model was used to analyze the association between variables.

RESULTS: Two hundred sixty-four married men were included in this study. The mean age of the study participants was 38.7 with an age range between 21 and 70 years. About 51.7% of the participants had good knowledge, and 59.4% had a positive attitude toward using vasectomy. Intention to use vasectomy as a method of contraception was reported in 18% of married men. In multivariate analysis, participants with a positive attitude towards vasectomy were 2.1 times more likely to use it than their counterparts.

CONCLUSION: The intention to use vasectomy as a method of contraception among married men in our study was comparable to studies in similar settings. A positive attitude towards vasectomy was significantly associated with the use of vasectomy in future life. So, engaging in better education that improves the attitude of couples towards vasectomy is essential to enhance the intention of men to use vasectomy.

KEY WORDS: Vasectomy, Family Planning, Intention, Barrier, Ethiopia.

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INTRODUCTION

In the rugged, landlocked state of Ethiopia, around 117 million people settle, making the state the second most populous in Africa[1]. Ethiopia is categorized under countries with high maternal mortality, with 412 deaths per 100,000 live births, according to Ethiopian Demographic and Health Survey (EDHS)[2]. Family planning, including vasectomy, positively affects socioeconomic development and reduces maternal deaths[3].

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 (FP2020) indicators. These initiatives are believed to expand access and quality of family planning services, mainly for women. More recently, research and programs that engage men in family planning and combat inequitable gender norms have also increased in effectiveness and scope[4].

For couples who want to stop childbearing, vasectomy is a safe and highly effective contraception option. Compared to female sterilization, vasectomy has few side effects and provides a quicker recovery with much less cost. Even though all men who are satisfied with the size of their families are eligible for vasectomy, it remains a rejected family planning (FP) option among men[5].

Despite its acceptability in developed countries, in most African countries, including Ethiopia, there are still prevailing barriers to its acceptance by married men[3].

The 1994 International Conference on Population and Development (ICPD) set clear directions for improving men's involvement in family planning. Regardless, male participation is still meager in Africa[6].

Despite growing evidence on the benefits of engaging men in reproductive health decision-making, fertility rates and unmet need for family planning remain high in many Sub-Saharan African countries, including Ethiopia. One way to foster male involvement in family planning is to provide couples with more contraceptive choices by promoting male-oriented methods, including vasectomy[7].

More education and support for vasectomy at a national level would address the gender imbalance in contraceptive availability and use. It also promotes couples' fertility as a shared responsibility. This more holistic approach to reproductive health supports an informed choice of a wide range of high-quality contraceptive methods[8].

This study will discuss the factors behind men's passive participation in family planning compared to countries with high utilization rates. It will also help assess the knowledge status about vasectomy and the cultural barriers concerning health issues regarding the procedure to create a good insight for healthcare stakeholders and address any identified factors that may contribute to poor utilization.

METHOD AND MATERIALS

Study setting and period

The study was conducted in the Arada Sub-city of Addis Ababa, Ethiopia. Addis Ababa City Government has ten sub-cities, of which Arada sub-city was randomly selected for this study. Arada is one of the ten sub-cities in the town with a population size of over 225,000 per the latest estimate (9-10).The study period was one month, from December 1– 31, 2021.

Population and eligibility criteria

The source population for the research are all married men whose wives are in the reproductive age group living in Arada Sub-city, and the study population are all married men whose wives are in the reproductive age group in the selected woredas of the Arada sub-city during the study period and fulfill the inclusion criteria for the study. All married men who had already undergone vasectomy or whose wives are critically ill (bedridden), infertile or had undergone surgical sterilization were excluded.

Sample size and sampling procedure

The sample size was calculated using single population proportion formula with the assumption of proportion (p) for intention to use vasectomy to

be 19.6% (i.e., p = 0.196) from a previous study with 95% CI and a 5% marginal error (6). With an assumption of a 10% non-response rate, we planned to include 264 participants.

Arada sub-city has ten woredas, of which three woredas were selected by simple random sampling (lottery method) for the study. Then, the calculated sample size of 264 was proportionately allocated for each woreda based on the number of households. The study utilized systemic random sampling to select the study participants. One married man per household was interviewed. When two or more eligible men were found in one household, only one was interviewed by lottery method. If no eligible men are identified in the selected household, the next eligible household located in the clockwise direction was visited and included until we get the desired sample size.

Data analysis

Data were checked for completeness and entered into SPSS version 26 for analysis. Descriptive data analysis with frequencies and percentages was performed to describe the socio-demographic status, intention, and barriers to using vasectomy. The study used a 95% confidence interval (CI) and p-value of < 0.05 to determine statistical significance. The statistical association between the outcome variables and independent variables were first tested with binary logistic regression. To control confounders, those variables that showed significant association with a p-value of less than 0.05 were further analyzed with multivariate logistic regression.

Ethical Clearance and Data Collection

Ethical clearance was obtained from the institutional review board of St. Paul's Hospital Millennium Medical College (SPHMMC). Participants were recruited voluntarily after complete information about the research was provided.

Data were collected by trained data collectors via face-to-face interview techniques using a structured, validated, and pre-tested questionnaire. For some of the knowledge and attitude questions, we used questionnaires from similar studies customized to our study setting (3, 13). The tool was first prepared in English, then translated to Amharic and back to English by language experts to maintain the instrument's consistency.

RESULTS

Socio-demographic and reproductive health characteristics

During the study period, a total of 264 men were interviewed. The mean age of the participants was 38.7 with a range between 21 and 70 years. The study showed that most participants were between the ages of 31 to 40 years (35.6%). Moreover, in the study, 43.2% (n=114) stated that they had attended tertiary education (Table 1).

Table 1- Sociodemographic characteristics of study participants

	Classification	Frequency	Percentage
Age (years)	21-30	66	25.0%
	31-40	94	35.6%
	41-50	68	25.8%
	51-60	21	8.0%
	61-70	15	5.7%
Monthly income (in Ethiopian birr, ETB)	1000-5000 ETB	70	26.5%
	5000-10000 ETB	105	39.8%
	10000-15000 ETB	70	26.5%
	>15000 ETB	19	7%
Educational level	Does not read or write	3	1%
	Read and write	8	3%
	Primary school	40	15%
	Secondary school	99	37.5%
	College	114	43.2%
Religion	Orthodox	148	56.1%
	Muslim	53	20.1%
	Catholic	24	9.1%
	Protestant	39	14.8%

The majority, 76.9% (n=203) of study participants reported having one to three children. Not only the number of children but also the researcher explored the participants' intention to have any more children. On the other hand, the majority of participants, 54.5% (n=144) reported that they do not want to have any more children as illustrated in table 2.

Table 2: Reproductive Health Characteristics

Reproductive health-related issues	Values	Frequency	Percentage
No. of Pregnancies (N= 264)	Never Pregnant	19	7
	1-3 Pregnancies	192	72.7
	4-6 Pregnancies	53	20.6
No. of Children (N= 264)	Never gave birth	23	8.7
	1-3	203	76.9
	4 and above	38	14.4
Want to have more children (N= 264)	Yes	120	45.5
	No	144	54.5
If yes, how many? (N= 120)	1-2	85	70
	3-4	27	22.5

Knowledge of family planning

Among all study participants, 98.9% knew or had heard about family planning methods while 49% of participants have knowledge about female sterilization. The majority (67%) of participants did not know about male sterilization out of which 94.2% knew that vasectomy is permanent and irreversible (Table 3). Married men's knowledge about vasectomy was assessed using ten knowledge-related questions. Each correct and incorrect response was given a value of one or zero respectively. The individuals who scored below the mean score was considered to have poor knowledge while those who scored greater than or equivalent to the mean estimation of participants' scores were considered to have good knowledge[3].

About 51.7% (n=45) of the participants scored greater than the mean score which was categorized as good knowledge and 40% of participants have a positive attitude towards vasectomy (Table 3)

Participants' attitudes toward vasectomy and its utilization

A 10 item Likert scale with five response alternatives is adjusted from previous studies. The response alternatives include 'Strongly Disagree = 1, Disagree = 2, Neutral = 3, Agree = 4, and Strongly Agree = 5.' The mean attitude of married men towards vasectomy was 6 (SD ± 1.7); about 59.4% of the participants scored greater than or equal to the mean which was categorized as a positive attitude towards the use of vasectomy[13].

Table 3: Knowledge and attitude about FP, Female Sterilization, and Vasectomy among married men living in Arada Sub-city, Addis Ababa

		Frequency	Percentage
Knowledge of FP		261	98.9
Knowledge on Female Sterilization		128	49
Knowledge on Vasectomy		87	33
Know Vasectomy is permanent and irreversible		82	94.2
Knowledge on Vasectomy			
	Good knowledge	45*	51.7
	Poor knowledge	42*	48.3
Attitude about vasectomy			
	Positive attitude	157	51.4
	Negative attitude	107	40.6

* Out of 87 who knew about male sterilization.

The participants were also requested to indicate whether they agreed that family planning benefits themselves and their families; 44.3% (n=117) agreed, and 53.8% (n=142) strongly agreed (Fig.3). More than half of the participants, 58.3% (n=154)

agreed that men could play a significant role in family planning. In order to gauge the participants' views on wanting to share responsibility, they were asked to state whether they agreed to share the responsibility to use family planning. More than half of the participants, (56%) agreed on wanting to share responsibility and 28% strongly agreed. Figure 1 illustrates the findings.

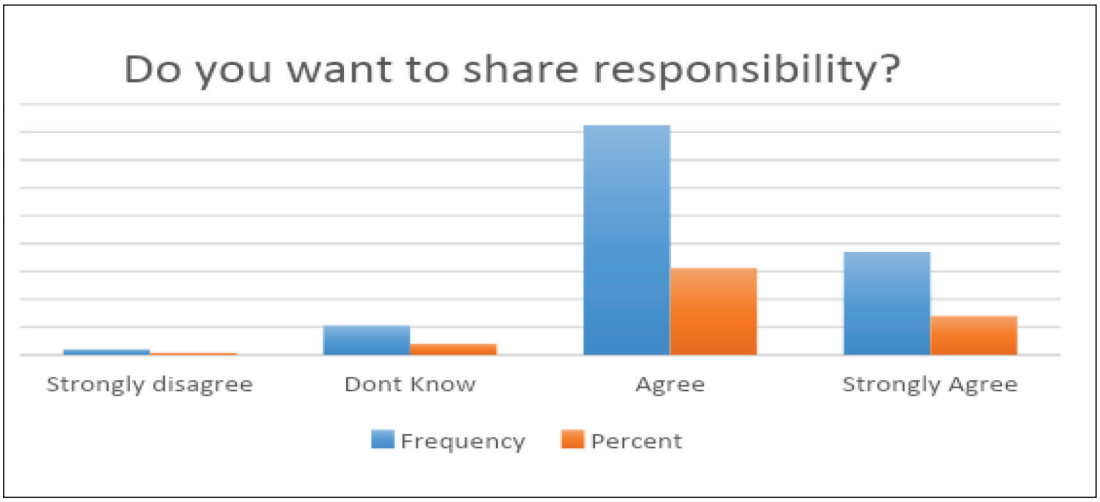

Figure 1: Men's opinion on sharing responsibility of using contraception among married men living in Arada Sub-city, Addis Ababa

Intention to use vasectomy

The participants were also asked to provide their views regarding their interest in having a vasectomy. Almost one-fifth (n=47) of participants reported that they are interested in having a vasectomy as a family planning method option (Fig.2).

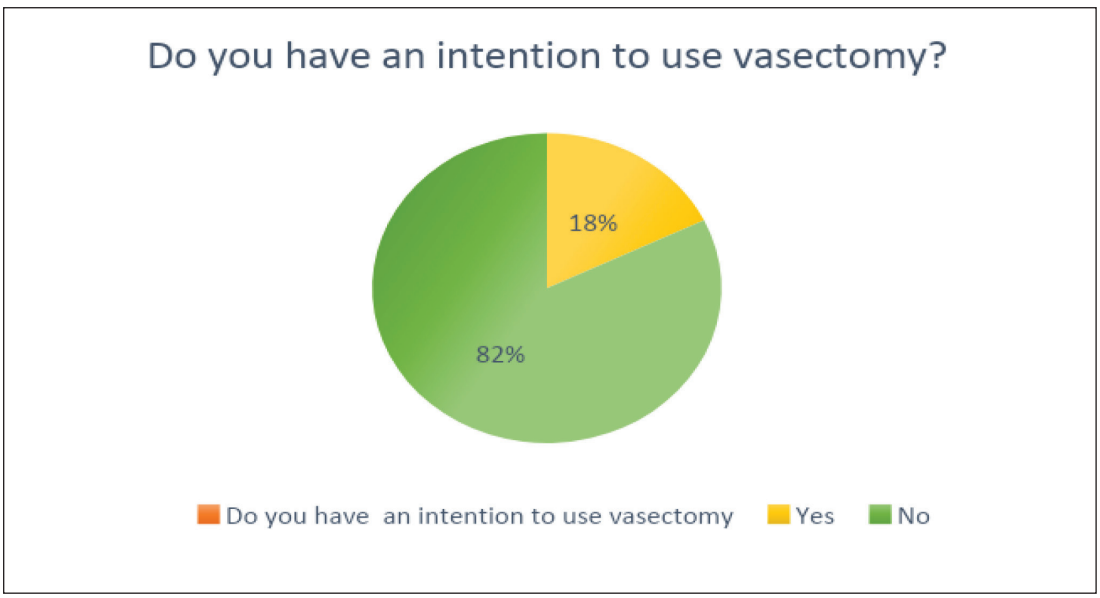

Figure 2: Intention to use vasectomy among married men living in Arada Sub-city, Addis Ababa

Barriers to using vasectomy

Around 89% (n=235) reported a lack of knowledge about vasectomy as the major reason for not using vasectomy. More than 45 % stated that they desire to have more children. Others stated the lack of role models who have undergone the procedure and the lack of trained providers as barriers to using vasectomy as a contraception option (Fig.3).

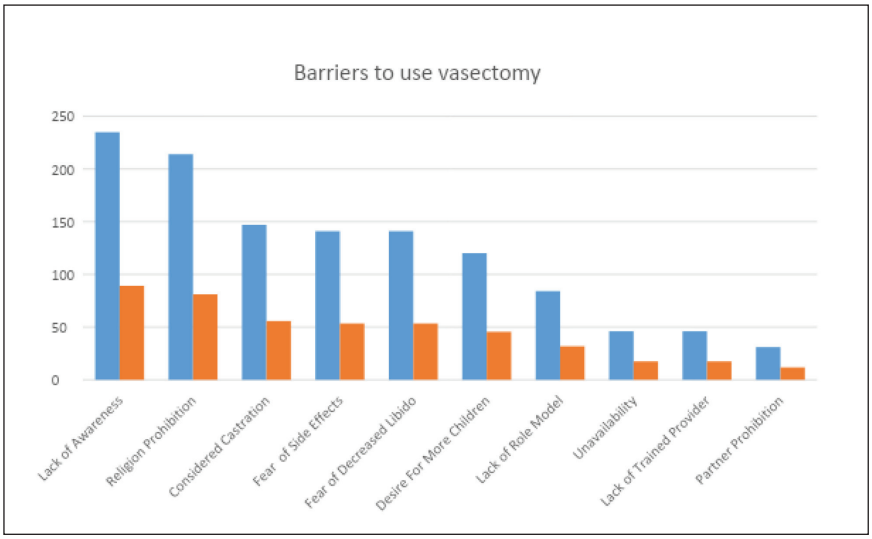

Figure 3: Barriers to using vasectomy among married men living in Arada Sub-city, Addis Ababa

Factors associated with intention to use vasectomy

In binary logistic regression, the age and attitude of participants had an association with the intention to use vasectomy. In multivariable binary logistic regression analysis, attitude towards vasectomy was found to have a significant association with intention of married men to use vasectomy (Table 4). Participants who had a positive attitude towards vasectomy were 2.1 times more likely to have the intention to use vasectomy as compared with their counterparts [AOR = 2.1(95%CI: 1.1–8.80)].

Table 4: Factors associated with intention to use vasectomy among married men living in Arada Sub-city, Addis Ababa

Variable	Intention to use vasectomy		COR(95%CI)	AOR (95%CI)	P-value
	Yes	No			
Age (in years)					
21 - 30	10(15.2)	56(84.8)	0.654(0.068-5.298)	0.457(0.05-4.158)	0.487
31 - 40	21(22.3)	73(77.7)	0.256(0.027-1.179)	0.185(0.022-1.528)	0.117
41 - 50	8(11.8)	60(88.2)	0.399(0.049-3.510) *	0.367(0.042-3.197)	0.364
51 - 60	6(28.6)	15(71.4)	0.108(0.019-1.675)	0.146(0.015-1.429)	0.098
61 - 70	2(13.3)	13(86.7)	1	1	1
Attitude					
Positive	34(21.7)	123(78.3)	0.388(0.204-0.740) *	2.1 (1.1 – 8.80)	0.035*
Negative	13(12.1)	94(87.9)	1	1	1

* P-value <0.05

DISCUSSION

Reproductive health decision-making is a shared responsibility of men and women. Effective utilization of family planning is one of the most important indicators of reproductive health. While vasectomy is an easy procedure with a high achievement rate (> 99%) and minimum complications, most FP methods often focus solely on women, with the objectives of preventing recurrent births and reducing maternal and fetal death[3].

In this study, of the 264 participants, around 33% knew or had heard about male sterilization. This finding is higher than the 2016 EDHS report, which indicated that only 23.5% of married men had ever heard about vasectomy. This may be because of a time change since EDHS 2016 was done five years ago. Also, the current study was done in a more urban setting, the EDHS incorporates both rural and urban areas. It is also higher than a study done in Dashen, Ethiopia, which reported that 17.1% had heard or knew about vasectomy. But compared to research done at Dangila regarding men's knowledge about vasectomy, the number is significantly low (75% to 33%)[11]. This may be due to differences in sample size, socio-demographic differences, and the involvement of non – governmental institutions and health care advisement at the peripheral level.

The present study showed that among those who knew or heard about vasectomy, 51.7% had good knowledge about the contraceptive method. This is higher than the results obtained from studies in Gulele, Addis Ababa (34.8%), Debre Tabor (38.5%), and Dangila (44.8%)[3,6,11]. The difference can be explained by the difference in the socio-demographic characteristics of the population and access to information, which is better in an urban setting. However, this finding is lower than a study conducted in India, which showed that 70.2% of married men were knowledgeable about vasectomy[12]. This could be attributed to a health system difference between the two countries.

In the current study, 40.6% had a negative attitude toward the use of vasectomy. Some of the reasons for refusing to use vasectomy as a means of contraception in this study are cultural/religious beliefs, lack of support from a spouse, fear of complications of the procedure, fear of irreversibility, and fear of impotence among others. This finding is consistent with studies conducted in East Wollega, Ethiopia, and Nigeria[13-14]. A study conducted in Turkey similarly showed that contraception is a women's obligation and undergoing vasectomy may lead to loss of men's status in the public eye as well as in the family[15].

In the current study, 18% reported that they are interested in having a vasectomy. This finding was similar to studies done in India, Indonesia, and Bangalore that showed between 16.6 - 21.4% of the participants had the intention to use vasectomy respectively[12,16-18]. Similar studies conducted in different regions of Ethiopia also showed that between 18.1-30% of men have intentions to use vasectomy[13, 19]. A slight discrepancy in the studies could be due to differences in study settings and participants. The current study was community-based while the previous was a facility-based study and the participants were men who were visiting health institutions together with their partners for family planning services which could have positively influenced their intention by increasing their awareness about the method.

Men with a positive attitude towards vasectomy had increased intentions to use the method than men who had a negative attitude. The finding of this study was in agreement with the study finding from two rural cities in Ethiopia (Debretabor and Gulele)[3, 6]. This indicates that men with a positive attitude towards vasectomy are better able to use it and share responsibilities in FP practice with their partners. Thus, attitude could be an entry point to improve vasectomy uptake in the community by breaking the myths and misconception that was negatively affecting intentions to use vasectomy.

Women can influence the contraceptive choice of thier partners. Hence further studies involving women's knowledge and attitude towards vasectomy are a potential area for future research.

In spite of its limitations, this study showed that the majority of married men do not have adequate knowledge about vasectomy as a family planning method option available to men and religion plays a significant role in the decision to use vasectomy as a contraception method. Educational strategies such as; training and public enlightenment may help in addressing these problems.

CONCLUSION

The study showed that a negative attitude towards vasectomy significantly affects the intention to use vasectomy as a contraception method. The study also enlightens the lack of awareness and the role of religion as a major barrier to using vasectomy as a form of contraception among married men. In view of these, health education strategies need to be employed to bring about a positive behavioral change in men and enhance the utilization of vasectomy as a method of contraception, and in turn, ensure their participation in family planning. To further promote the use of vasectomy, effective communication strategies in family planning programs could also play a role. This may also help in increasing awareness, and creating a positive attitude towards vasectomy. Men are key role players in the decision of family planning. So, to alleviate women's burden, it is imperative to make men part of this important reproductive health issue.

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