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Male Contraception in Senegal: Knowledge, Attitude, and Perception of Couples on Vasectomy According to a Survey Carried Out at the Fatick Regional Hospital

Medina Ndoye[1], Mahmah Sarah Diaby[2], Serigne Mbacke Ndiaye[1], Ibrahima Dara Diamé[2], Ermelindo Rodrigues Pereira[2], Abdoulaye Mihimit[2], Idrissa Ngom[2], Lamine Niang[1]

[1]Urology Department, Université Cheikh Anta Diop de Dakar, Dakar, Senegal
[2]Urology Department, Hopital Regional De Fatick, Fatick, Senegal
Email: Medina.ndoye@ucad.edu.sn, diabymsarah@gmail.com, nserignembacke035@gmail.com, daraurol@yahoo.fr, gikitensco@gmail.com, mihimit2122@yahoo.fr, docidrissangom@hotmail.fr, nianglamine72@gmail.com

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Abstract

The use of male contraception in general, more specifically vasectomy, could become a valuable choice in case of high risk for women during pregnancy and/or intolerance to female contraceptive methods. In this study, the main objective was to assess the population's level of knowledge, attitude, and perception towards vasectomy in a West African country renowned for its Islamic cultural background. **Study population and methods:** This was a descriptive and analytical cross-sectional study of 100 people selected at the Regional Hospital of Fatick, during 3 months through a direct interview based on a questionnaire. **Results:** The average age was 40, with extremes ranging from 23 to 63 years. The male sex was predominant (54%) with a sex ratio of 1.17. Male contraception was known by 93% of respondents. Vasectomy was known by only 18%, with 16% of respondents willing to perform it after a clear explanation of the method. There was a significant association between education level and knowledge of vasectomy, with P less than 0.05. **Conclusion:** Our study showed that vasectomy is little known by the population, but it remains a possible alternative for couples where women's contraception is forbidden for medical reasons.

Keywords

Vasectomy, Contraception, Sexual and Reproductive Health, Family Health

1. Introduction

The advent of several modern contraceptive methods in the 21st century has allowed easier access to birth spacing, allowing for the improvement of maternal and infant health indicators, including the reduction of maternal mortality from 44% in 2008 to 38% in 2017 [1] [2]. In Senegal, in 40 years, the population has almost quintupled, going from 3 million inhabitants in 1960 [3] to 16,705,608 inhabitants in 2020 [4]. Furthermore, in 1990, 14% of children died before the age of one and the maternal mortality rate was 1200 deaths per 100,000 live births [5]. These high maternal and infant mortality rates were one of the main factors that motivated the establishment and development of contraception, allowing, from 1991, the advent of a national family planning program. Despite the efforts made, maternal mortality remains high at 236 per 100,000 births in 2020 [4], as contraception methods are not always adopted by the population due to sociocultural beliefs and religious reasons. Elsewhere in the world, the use of contraceptive methods has increased considerably over the last ten years. In 2009, its use reached 72.4% in developed countries compared to 34.1% [6] in developing countries, where it is only 16% in Sub-Saharan Africa [1] [6]. This contraceptive prevalence in couples only concerns women. Contraception has long remained the domain of women as part of the reduction of maternal and infant mortality strategies. Indeed, the use of male contraceptive methods in couples represents only 2.4% [2]. Vasectomy is a male contraceptive method, although surgical, that is recognized for its effectiveness with a failure rate of less than 1% [7]. In Senegal, to date, no study in the literature has been reported on vasectomy; hence, the importance and relevance of this work, which aims to fill the scientific void surrounding male contraception in couples, particularly in the Sub-Saharan context.

2. Populations and Methods

This was a descriptive and analytical cross-sectional study involving 100 people interviewed on the basis of a questionnaire, under the cover of anonymity, which took place during 3 months, in the surgery and gynecology departments at the Fatick Regional Hospital. The inclusion criteria were married couples or in a relationship, divorced men and women, selected according to age and number of children; the non-inclusion criteria were single, never married or never been in a relationship, men under 30 years old and women under 20 years old. Patients were selected in the urology and gynecologic department while they were waiting in the patient waiting room during their appointment, for any clinical reason, but non-urgent ones. For a preliminary study, first in the country to our knowledge, the sample study was limited to 100 patients during the 3-month research period. There was only one interviewer which resulted in one to two enrollments per day allowing an open discussion without time pressure from both sides. The data collected were analyzed and entered with SPSS 12 software and Excel 2013. For the analytical part, the student test was used for the comparison of means and Fisher tests for the comparison of frequencies with a significance threshold of 5%. The

study was approved by the hospital's local ethics committee and all patients, received a written informed consent form depending on their level of education.

3. Results

During our study period, 100 interviews were conducted. The average age was 40, with a range from 23 to 63. Forty-five percent (45%) of couples were between 30 and 40 years old (Figure 1). Men represented nearly 54% of our sample, with a sex ratio of 1.17. The majority ethnic group was the Serer, representing 65%. Muslims predominated, with 91%. Eighty-four percent were educated Table 1. Regarding occupation, the formal sector employed 51% of participants, compared to 49% in the informal sector. Married couples represented 96% of the sample, with polygamous marriages predominating in 80% of cases. The average number of children was 4.71 per couple and 40% of the study population had at least 4 children Table 2. In couples, contraception decision-making was made by both spouses (46%), 27% by husbands versus 23% by wives. Male contraception was known by 93% of our study population at Fatick Hospital. Among participants,92% knew the use of condoms, 32% knew sexual abstinence, 24% coitus interruptus, while vasectomy was known by 18% of participants. In the surveyed population, only 15% used condoms, 4% practiced sexual abstinence, 1% coitus interruptus and 80% of the population did not use any contraceptive method. Thirty percent of respondents found vasectomy interesting and 16% of participants were willing to accept it as a contraceptive method in our sample Table 3. The main reason that would have motivated a refusal of vasectomy was the desire to have children shortly with a total of 42%. The main factor associated with the knowledge of vasectomy was the high study level with a P value under 0.003 (Table 4). The socio-cultural context, namely religious and traditional beliefs, with a total of 31% and 11% would refuse surgery as a family planning method. Among those who would have agreed to perform vasectomy, 8% did not want to have any more children and 6% would have chosen it to preserve the precarious state of health of their partner Figure 2.

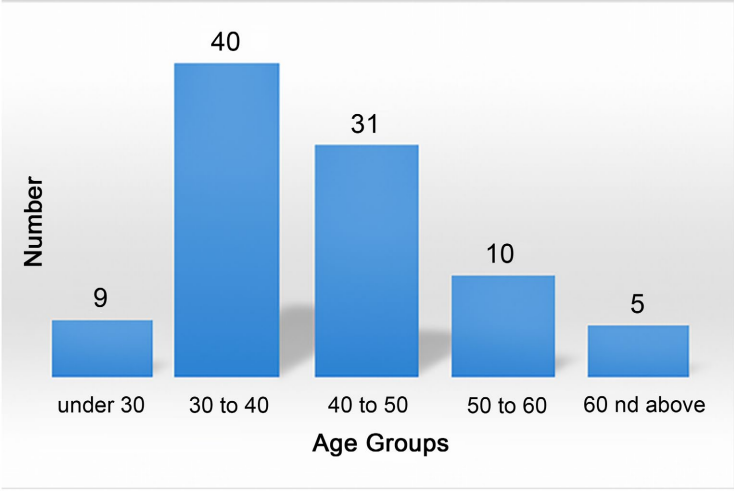

Figure 1. Distribution of respondents by age group.

Table 1. Socio-demographic characteristics of participants.

Variables	Proportion
Sex	**Percentage**
Male	54%
Female	46%
Ethny	**Percentage**
Sérère	65%
Wolof	18%
Peulh	5%
Autres	12%
Religion	**Percentage**
Muslim	91%
Christian	9%
Study Level	**Percentage**
Unschooled	16%
Primary School level	21%
College	37%
University level	22%
Religious education	4%

Table 2. Social and family status.

Matrimonial Situation	Proportion
Married	96%
Divorced	1%
Cohabitation	2%
Widow (wer)	1%
Matrimonial Regime	**Proportion**
Monogamy	18%
Polygamy	80%
Common-law union	2%
Number of Children	**Percentage of couples**
1 child	13%
2 children	24%
3 children	23%
4 children	40%

Table 3. Knowledge and practice of male contraception methods.

Knowledge of male contraception methods	Proportion
Abstinence	32%
Coïtus interuptus	24%
Condom	92%
Vasectomy	18%
Usage of male contraceptive methods	**Percentage**
Abstinence	4%
Coïtus interruptus	1%
Condom	15%
Participant willing to use vasectomy	16%

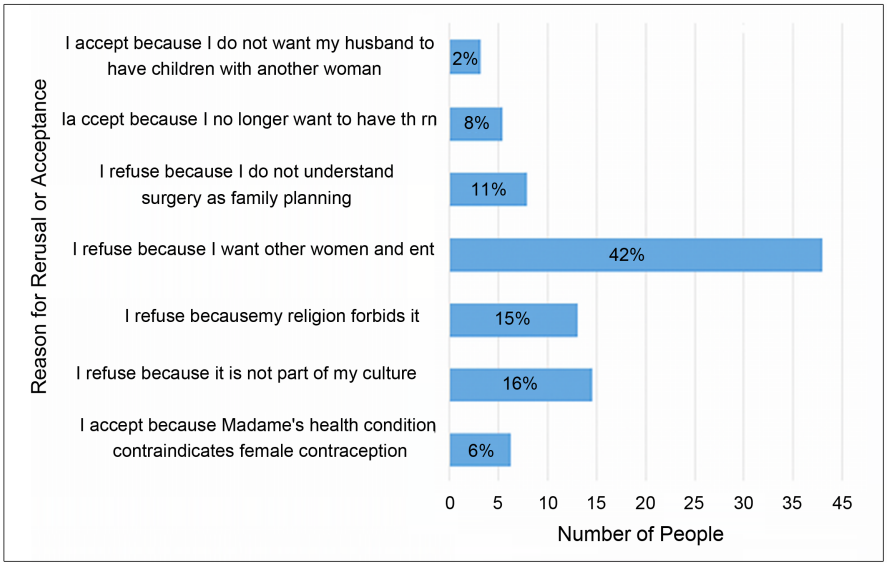

Figure 2. Perception of vasectomy from participants and reasons for adoption or rejection.

Table 4. Knowledge of vasectomy and study level.

Education level / Do you know vasectomy?	Nonschooled	Primary Level	College	Universitary	Religious
NO	18.3%	24.4%	39.0%	13.4%	4.9%
YES	5.6%	5.6%	27.8%	61.1%	0%

P = 0.003 inferior to 0.05.

4. Discussion

Male contraception remains uncommon in the world compared to female contraception. In some countries, this practice is estimated at less than 10%, with coitus

interruptus abstinence condom use and vasectomy respectively (5.1%, 2%, 7.6%, and 2.5%) [8] [9]. The latter is a method of male contraception that consists of surgically isolating and interrupting the continuity of the vas deferens which transports spermatozoa from the testicles. It is preferably practiced by couples who have already procreated. In our study, the average age of the participants was 40 years with extremes of [23; 63 years], the same as found by Rostam C. *et al.* [10]. Elsewhere in the world, forties is the age at which vasectomies are most commonly practiced [11]-[13]. Indeed, at this age, couples who engage in this practice have already had an average of 3 or 4 children [12] [14], and the need for procreation is no longer felt. In Senegal, the practice of male contraception cannot be based on the number of children per couple due to the common practice of polygamy. The age of practice of vasectomy around forty is also important to avoid too early practice of vasectomy, which could lead to regrets on the part of the client. In all cases, reversibility is always possible with success rates of vasovasostomy better before the 3rd year of approximately 72% [1]. This re-permeabilization is expected to yield a better pregnancy rate, depending on the woman's age, which is 14%, 56%, and 67% for the age groups of 40 years and over, 25 - 39 years, and 20 - 24 years, respectively [15]. Male contraception was well known by the participants in the study, in particular, the condom, which is also used in the fight against STIs. Indeed, the context of the HIV pandemic has favored the implementation of several awareness campaigns allowing the popularization of this method especially among young populations. According to Cheikh Ndiaye *et al.*, in their study on the knowledge and use of contraceptive methods in rural areas in Senegal, 64% of young people knew the condom as a method of male contraception, while for married men, this method was only used during extra-marital relations [5]. Male contraception, with only a 1% failure rate, could represent an alternative to prevent unwanted pregnancies of which 80 to 90 million occur each year [16] [17]. Despite all its limitations in the knowledge of male methods, 18% of our respondents claimed to know about vasectomy. This knowledge of vasectomy was correlated with the level of education. Indeed, the higher the level of education, the higher the rate of knowledge of vasectomy was, *i.e.*, 61% for university-level versus 18.3% for those not in school, with P less than 0.05. In Nigeria, Owopetu *et al.* [18] had higher results with 38% of participants who knew about vasectomy. Similarly, in Ethiopia, according to a study by Jemila *et al.* [13], 34.8% of men had a good knowledge of vasectomy, while in Pakistan, Humaira *et al.* [12] obtained the rate of 85.6% of men who knew about vasectomy. To increase access to and awareness of vasectomy, it is imperative to develop a good communication strategy, the primary factor influencing the rate of awareness of this contraceptive method. In West Africa, national health policies do not yet promote vasectomy as a family planning option for couples. This could be the reason for the low rate of awareness of vasectomy. In addition, due to the existence of socio-cultural norms prevailing in African societies of Sub-Saharan countries, men are much less considered as being able to be the one in the couple to support a contraceptive method. The

socio-cultural reluctance toward male contraceptive methods, as well as the misinformation around the issue, reduced the widespread appreciation of this method. In Nigeria, in 2009, in a study on the attitude of men towards vasectomy, 40.7% of 146 participants, considered the method as a castration; C. Desjeux [19] in one of these surveys on the history and current state of representations and practices of male contraception explained the representation that men have of their bodies "vasectomy creates a separation between those who use it (very positive perception) and the collective imagination that it covers (negative perception)" [20]. The rate of 16% of participants, willing to perform a vasectomy if necessary, constitutes a very encouraging rate of positive responses, given the context of the study. The absence of applicable policy to promote male contraception, and also the sociocultural and religious particularities inherent to Senegalese society are the main blockage factors. Among the reasons that could be at the origin of using the method, the state of women's health was one of the first mentioned. Indeed, high blood pressure is a comorbidity often present in women and can contraindicate the taking of certain types of pills. After lengthy explanations to these women, their solicitation of their men allowed them to obtain 6% positive response for a possible use of the method for medical reasons related to the woman. The study of Jemila *et al.* reported 33% acceptance of the practice of vasectomy for women's health motivation [13]. For all these reasons, women could play a key role in communication and awareness within the couple. On the other hand, the refusal of vasectomy has been reported in many African countries for various reasons including the subsequent desire for fertility, cultural and religious beliefs, fear of complications of the intervention, fear of irreversibility, and fear of impotence [12] [13] [18]. Vasectomy has long been considered irreversible. In case of desire for pregnancy, a microsurgical technique, vasovasostomy, however, can restore fertility [15]. Furthermore, vasectomy has no impact on virility and sexuality; it reassures the man about the absence of the risk of pregnancy and requires another contraceptive method for 3 months after the operation [15]. The surgical technique remains completely mastered and feasible on an outpatient basis and under local anesthesia, all guarantees necessary for the acceptance of the method. From another WHO (World Health Organization) study,41% to 75% of men would welcome a male contraceptive method on the condition that it is safe, reversible, and non-surgical and that it can be used outside of sexual intercourse [21]. The use of communication, training of highly qualified providers, and awareness campaigns could bring higher rates of acceptance of vasectomy compared to our 16% results but the task is huge and complex involving the entire African region. In the Sub-Saharan Africa region, state of family planning reveals the same statistics as in this present study. Low uptake of men in family planning has the same characteristics elsewhere with the main reasons being lack of education, religious beliefs and number of sexual partners as stated by a study that took place in Rwanda during 2019 [22]. Another interesting study in Uganda, highlighted the strong negative attitude towards vasectomy in relation to sociocultural beliefs [23] and these are

the most difficult to get rid of.

5. Limitations

The results of this study are limited by the small number of participants and sampling methodology. It's a preliminary, hospital-based study and results are solely applicable to the local context of the Fatick region. Further research protocol with improved methodology, sampling and geographic area coverage will be necessary to be interpreted in a wider perspective, at national level.

6. Conclusion

The acceptability of vasectomy by a quarter of our sample participants, although low, remains encouraging for the possible inclusion of male contraception in our practices for specific cases. In the event of intolerance, contraindication to certain contraceptive methods, and or life-threatening prognosis risk factors during pregnancy, this method can be an important asset.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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