


Perception and Acceptability of Plant-Based Male Contraception in Benin: Insights from a Public Opinion Survey

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Abstract

The growing distrust of modern contraceptive methods has led many couples to seek natural alternatives. This study aimed to assess the opinions of both men and women regarding the adoption of a plant-based male contraceptive method in Benin. An online opinion survey was conducted from October to November 2023 among 337 adults using KoboToolbox. An anonymous questionnaire was distributed via WhatsApp and Telegram, with a network of regenerated addresses provided by each respondent. The participants consisted of 66.77% men and 33.23% women from various ethnic, religious, and professional backgrounds, with a mean age of 38.57 ± 9.42 years. The results showed that 98.21% of women and 91.11% of men supported male involvement in family planning. Regarding the use of medicinal plants as a male contraceptive method, 87.50% of women and 72.44% of men expressed a favorable opinion. These findings highlight a strong willingness among men to participate in contraception, which is positively supported by women, regardless of ethnicity, religion, or profession. Most participants demonstrated a favorable attitude toward plant-based male contraceptive methods.

Keywords

Male Contraception, Opinion, Plant, Benin

1. Introduction

Over the past decades, the global population has experienced unprecedented growth, increasing by an estimated 80 million people per year. Projections suggest that it could exceed 9 billion by 2050 [1]. This demographic trend places increasing pressure on natural resources and healthcare systems, making family planning a critical issue for many countries. Despite advancements in contraception, however, unmet family planning needs remain high worldwide, especially in high-fertility countries [2]. Africa has the highest fertility rate and low contraceptive use, underscoring ongoing challenges in both access and acceptance [3].

In many African societies, family and sociocultural structures often assign men a predominant role in reproductive and family planning decisions [4]. However, family planning strategies have historically focused on women, providing them with a wide range of contraceptive methods, while male options remain limited to three main methods: condoms, withdrawal, and vasectomy [5]. Each of these methods has specific constraints. Although widely available, condoms are sometimes poorly perceived or rejected due to their impact on sexual sensation; withdrawal is an unreliable method with a high failure rate; and vasectomy remains marginal because of its irreversible nature and the cultural reluctance surrounding it.

In this context, the lack of effective and acceptable male contraceptive alternatives presents a barrier to male involvement in birth control. If the ultimate goal of family planning is to ensure that every pregnancy is desired and planned, diversifying available options—including those for men—is essential to promote shared responsibility between partners. The adoption of new male contraceptive methods therefore necessary to meet couples' expectations and enhance the effectiveness of family planning programs [5].

However, another major challenge in Africa is access to modern contraceptives. These methods are often expensive and remain out of reach for a significant portion of the population. In addition to this economic constraint, there is growing reluctance toward “chemical” solutions, which are perceived as potentially harmful or suspicious due to concerns about side effects [6]. In response to this distrust, many individuals are exploring natural alternatives, particularly the use of medicinal plants, which have a strong cultural foundation and are perceived as safer.

Despite the increasing interest in natural solutions, scientific literature on the perception and acceptability of plant-based male contraceptive methods remains limited. The perspectives of both men and women on male involvement in family planning, as well as their willingness to adopt a plant-based male contraceptive method, represent a significant area of research. This study aims to gather insights into the perceptions and attitudes of the Beninese population regarding male involvement in birth control and the acceptability of a plant-based male contraception method.

2. Methodology

2.1. Study Population

The opinion survey was conducted online among the adult Beninese population

on a voluntary and anonymous basis, using KoboToolbox, a digital survey management tool. The study took place over a one-month period, from October 12 to November 11, 2023. A questionnaire was developed on this platform, and an electronic link was generated to allow participants to access and respond to it. The link, along with an anonymous message introducing the study and explaining the participation process, was distributed via the social media platforms WhatsApp and Telegram.

2.2. Survey Implementation

The questionnaire was disseminated using a cascading sharing approach to maximize the survey's reach. The survey questions regarding favorable/unfavorable opinions were binary (Yes/No). Initially, the principal investigator shared the link with direct contacts. Each recipient was then encouraged to forward the link to their own network, ensuring a gradual and expanded participation. This process continued throughout the study period, facilitating broad engagement from a diverse range of participants.

The survey questions regarding favorable/unfavorable opinions were binary (Yes/No).

2.3. Data Processing

The collected responses were recorded and organized into a dataset generated by KoboToolbox. This dataset was then exported to Microsoft Excel for statistical processing and analysis. A descriptive and univariate quantitative analysis was performed, focusing on means and proportions of various sociodemographic variables such as gender, age, ethnicity, occupation, and religion. Additionally, this analysis explored men's and women's perceptions regarding male involvement in family planning, as well as their opinions on the acceptability of a plant-based male contraceptive method. These findings provide valuable insights into the attitudes and representations of the Beninese population concerning male contraception and its potential adoption. The survey questions regarding favorable or unfavorable opinions were formulated as binary (Yes/No) responses, which were subsequently grouped into the reported categories for analysis.

3. Results

3.1. Sociodemographic Data

The survey gathered opinions from 337 participants with diverse sociodemographic backgrounds. The distribution of respondents was analyzed based on gender, age, ethnicity, occupation, and religion. Proportions were calculated by dividing the number of respondents per category by the total number of participants. The study population was categorized into different age groups. The collected data are summarized in **Table 1** below.

Table 1. Sociodemographic characteristics of survey participants.

Category	Count	Frequency (%)
Gender		
Male	225	66.77%
Female	112	33.23%
Age		
[18 - 28[	46	13.65%
[28 - 38[	105	31.16%
[38 - 48[	129	38.28%
[48 - 58[	42	12.46%
[58 - 68[	15	4.45%
Main professions		
Civil servant	251	74.48%
Student	29	8.61%
Trader	15	4.45%
Others*	42	12.46%
Main ethnic groups		
Fon	140	41.54%
Goun	39	11.57%
Mina	29	8.61%
Others**	129	38.28%
Main religions		
Catholic	216	64.09%
Evangelical	57	16.91%
Muslim	33	9.79%
Others***	31	9.21%

The table presents the sociodemographic distribution of survey participants based on gender, age, occupation, ethnicity, and religion. The counts and percentages (%) are provided for each category. Minority groups within professions, ethnicities, and religions have been grouped under the category “Others” to enhance readability and facilitate analysis.

The gender distribution shows a predominance of male participants. This male overrepresentation may be attributed to greater availability or heightened interest among men in the topic addressed in the survey. The average age of participants

was 38.57 ± 9.42 years, with the most represented age group being 38 to 48 years (38.28%), followed by the 28 to 38 years group (31.26%). The Fon ethnic group was the most represented in the survey, accounting for 41.54% of participants, followed by the Goun (11.57%) and Mina (8.61%) ethnic groups. Various professional categories were represented, with civil servants making up the largest group (74.48%), followed by students (8.61%) and traders (4.45%). In terms of religious affiliation, Catholics were the most represented (64.09%), followed by Evangelicals (16.91%) and Muslims (9.79%).

3.2. Perception and Acceptability of Male Contraception

Participants in the study expressed diverse opinions on male involvement in family planning and the use of medicinal plants for male contraception. The opinions were assessed by calculating the proportion of respondents relative to the total number of participants. The collected data are summarized in **Table 2** below.

Table 2. Perception and acceptability of male contraception.

Category	Favorable opinion (Count - Frequency)	Unfavorable opinion (Count - Frequency)
Acceptability of male contribution to family planning		
Men	205 (60.83%)	20 (5.93%)
Women	110 (32.64%)	2 (0.60%)
Total participants	315 (93.47%)	22 (6.53%)
Acceptability of a plant-based male contraceptive method		
Men	163 (48.37%)	62 (18.40%)
Women	98 (29.08%)	14 (4.15%)
Total participants	261 (77.45%)	76 (22.55%)

This table presents participants opinions on male involvement in family planning and the acceptability of a plant-based male contraceptive method. The responses are categorized into favorable and unfavorable opinions, with both absolute numbers and percentages displayed for each group.

The survey results show strong support for male involvement in family planning, with 93.47% of participants in favor, consisting of 60.83% of men and 32.64% of women. Conversely, 6.53% of respondents expressed opposition, including 5.93% of men and 0.60% of women. The low overall opposition rate suggests a widespread acceptance of men's participation in contraception.

Regarding the acceptability of a plant-based male contraceptive method, 77.45% of participants expressed a favorable opinion, with this support coming from 48.37% of men and 29.08% of women. On the other hand, 22.55% of participants opposed the method, including 18.40% of men and 4.15% of women. This distribution indicates that while men constitute the majority of those in favor, they also

represent the largest proportion of those expressing reservations. The overall opposition rate to this method (22.55%) was higher than the 6.53% opposition to male involvement in family planning (based on descriptive statistics), suggesting that concerns are more specifically tied to plant-based contraception rather than the broader concept of male participation in reproductive health decisions.

4. Discussion

This opinion survey conducted in Benin assessed both men's and women's openness to male involvement in family planning and the acceptability of plant-based contraceptive methods. The results reveal a strong willingness among men to actively participate in birth control alongside their partners, with women also showing a positive reception to this shared responsibility. Notably, this acceptance does not appear to be influenced by sociocultural factors such as ethnicity, religion, or occupation, indicating a consensus in favor of increased male contribution to contraception.

The high level of acceptability observed aligns with findings from similar studies conducted in Africa and other regions. Research from Uganda and Burkina Faso reported 95% of men and 77% of women in Uganda, as well as 53% of men and 83% of women in Burkina Faso, supported male involvement in family planning [7]. These results reflect a growing recognition that male contraceptive methods can help alleviate the contraceptive burden on women, granting them greater control over their fertility.

Interest in innovative male contraceptive methods extends beyond Africa. In Europe, Asia, and the Americas, acceptability studies have been incorporated into clinical trials on new male contraceptive methods, with findings indicating strong support from both men and women [8]-[10]. However, cultural differences influence acceptance levels, as shown in a study involving 9,000 men from 9 countries across 4 continents, which revealed variations in attitudes toward male contraception based on sociocultural context [8]. These findings emphasize the importance of adapting male contraceptive methods to local cultural realities to ensure their acceptability and successful implementation.

One of the main barriers to adopting new contraceptive methods is concerns about side effects. In Africa, particularly in Benin, traditional medicine plays a significant role in healthcare, with many people turning to medicinal plants for treatment. Therefore, considering user preferences in the design of new contraceptive methods is crucial to optimizing their adoption and improving family planning outcomes [11] [12]. Despite widespread use of medicinal plants, there is a notable lack of opinion studies specifically addressing plant-based male contraception, even though Benin's flora is rich in medicinal species known for their pharmacological properties. Ethnobotanical surveys have identified various male contraceptive plants used both locally and globally, highlighting the potential of medicinal plants for male contraception [13] [14]. The male contraceptive effects of two hundred and one (201) medicinal plants were studied. Thirty-three (33) species of these

plants, belonging to twenty-three (23) botanical families, are found in Benin. The flora of Benin is rich in medicinal plants with male contraceptive properties that could be used for family planning within the population [14].

Our study makes a novel contribution by exploring the acceptability of plant-based male contraception. The results show strong adherence, with 72.44% of men and 87.50% of women supporting this natural approach. These findings suggest that integrating medicinal plants into male contraception could represent a credible and acceptable alternative, provided that further research ensures the safety and efficacy of these methods. Beyond men's attitudes, women's support plays a crucial role in the acceptability of male contraceptive methods. A study conducted in Scotland, Hong Kong (China), Mainland China, and South Africa showed that women trust their partners to use male contraception, with over 90% of respondents in Scotland and South Africa, 71% in Hong Kong (China), and 87% in Mainland China viewing it as a positive innovation [15]. Furthermore, between 40% and 78% of these women believed their husbands would use an innovative male contraceptive method if available [9]. In Australia, a study found that 79.8% of female partners of men participating in clinical trials on new male contraceptive methods supported their involvement [16]. These findings confirm that women's engagement is a key factor in facilitating the adoption of new male contraceptive methods.

Despite the high level of support observed among the Beninese population, some resistance persists. Several respondents expressed concerns about potential side effects, including loss of libido and the risk of sterility after prolonged use. These concerns, also noted in other countries, could hinder acceptance of plant-based male contraception if not properly addressed. In Rwanda and Burkina Faso, despite broad acceptance of new male contraceptive methods, some participants believed men should not use them due to possible side effects [7]. Similarly, in Mozambique and Niger, concerns centered around reversibility and long-term safety [17] [18].

Although our survey collected anonymous and online responses, certain limitations must be considered. Firstly, the exclusion of individuals without internet access presents a potential bias, particularly affecting rural populations with limited digital connectivity. As a result, our sample may be overrepresentative of urban and educated individuals, who are typically more exposed to contraception awareness campaigns and more likely to adopt innovative family planning methods.

Furthermore, the overrepresentation of civil servants (74.48%) among participants warrants careful consideration. Civil servants in Benin typically have higher education levels, more regular access to health information, and greater exposure to public health campaigns compared to the general population. They are likely more familiar with modern family planning concepts and may hold more progressive attitudes toward male contraceptive methods. Consequently, the high acceptability rates observed in this study may not fully reflect the views of rural populations, informal sector workers, or individuals with lower educational attainment. This demographic specificity should be accounted for when extrapolating the findings to the broader Beninese population.

Additionally, although the survey was widely disseminated via social media, self-selection bias may have influenced participation. Individuals already interested in male contraception or supportive of natural contraceptive methods may have been more inclined to respond, potentially leading to an overestimation of acceptability rates.

Finally, the absence of in-depth qualitative data is another limitation. While our study provides an overview of acceptability trends, it does not explore the underlying motivations, concerns, or cultural perceptions regarding plant-based male contraception. A complementary study incorporating individual interviews or focus groups would offer deeper insights into sociocultural dynamics shaping contraceptive preferences.

To enhance the analysis and improve representativity, a follow-up study using mixed methods (quantitative and qualitative) with a more stratified sample based on geographic regions, education levels, and socioeconomic categories is recommended. This approach would provide a more nuanced and inclusive understanding of Beninese attitudes toward male contraception and inform more effective awareness and adoption strategies for new contraceptive methods.

5. Conclusions

This study assessed men's and women's opinions on male contraception, highlighting strong acceptability of both conventional and plant-based male contraceptive methods. The findings emphasize the importance of male involvement in family planning, which serves as a crucial lever for effective fertility management and demographic regulation.

The adoption of plant-based male contraceptive methods represents a significant opportunity to broaden the range of available contraceptive solutions. The identification and scientifically validating medicinal plants with contraceptive properties—adapted to Benin's sociocultural realities—emerge as a promising avenue for future research. Our findings indicate that the need for greater male involvement in contraception is widely recognized by the Beninese population, reinforcing the relevance of developing natural, culturally acceptable alternatives.

Integrating these methods into family planning policies could meet the expectations of couples seeking effective, accessible contraceptive options with minimal side effects. Therefore, leveraging Benin's rich botanical resources through research and development of natural contraceptives presents an innovative path forward for reproductive health, not only in Benin but also beyond.

Authors Contributions Statement

G.T.H.T.R., K.F.E.E., and A.D.C. were responsible for material preparation, data collection, and analysis. G.T.H.T.R. drafted the initial version of the manuscript, which was subsequently reviewed by S.J.A.G., M.T.C.M., and A.D.C. All other authors, including K.F.E.E. and A.C., provided comments on earlier versions. All authors read and approved the final manuscript.

Ethics Approval and Consent to Participate

The need for ethical approval was waived by the Ethics Committee for Health Research (ECHR) of URMAPha, University of Abomey-Calavi, per Article 12.3 of the National Ethical Regulation (2020) for non-interventional and anonymous studies. Ethical Approval Notice No. URMAPha-ECHR/2025/045 dated May 30, 2025, granted a favorable opinion with no formal ethical approval required. The study was conducted in accordance with national and international guidelines for ethical research involving human participants (Helsinki Declaration, CIOMS 2016).

Informed Consent

Informed consent was obtained through voluntary participation in the anonymous online survey, which was deemed equivalent to informed consent by the ethics committee. No personally identifiable data were collected, ensuring participant anonymity throughout the study.

Ethics Approval Accordance

This study was conducted in accordance with the ethical standards of the University of Abomey-Calavi and Benin's legal framework for public health research. The research adhered to principles of participant anonymity, voluntary participation, and posed no physical or psychosocial risks as confirmed by the institutional ethics review.

Consent for Publication

Not applicable—no individual participant data requiring consent for publication was collected due to the anonymous nature of the survey.

Data Availability Statement

The dataset generated and analyzed during the current study is available from the corresponding author upon request.

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Conflicts of Interest

The authors report no conflicts of interest.

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