

Barriers to Family Planning Utilization and the Effectiveness of Family Planning Programs in Bor South County, South Sudan

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Abstract

Despite high awareness of modern contraceptives among postpartum women in Bor South County, South Sudan, actual usage remains low. This study explored the barriers to family planning and assessed program effectiveness in improving contraceptive uptake. In a cross-sectional study of 288 women aged 15-49, results showed that 85% were aware of contraceptives, but only 34% used them. Barriers included limited male involvement, fear of side effects, and cultural beliefs, while rural access challenges persisted. Financial factors were less significant. Findings emphasize the need for targeted interventions addressing socio-cultural issues and improving accessibility to family planning services.

Keyword: *Contraceptive Barriers, Family Planning Utilization, Reproductive Health, South Sudan.*

Introduction

Family planning (FP) is a fundamental aspect of reproductive health, enabling individuals and couples to plan and space their children, which significantly improves health outcomes [18, 20]. By allowing control over the timing and intervals of pregnancies, FP plays a critical role in reducing maternal and child mortality rates, preventing unplanned pregnancies, and enhancing the social and economic well-being of families. Efficient FP practices are associated with decreased health risks for both mothers and children, as well as broader societal benefits, including economic growth and improved gender equality [16, 21, 22]. Despite the clear benefits, the global usage rates of modern contraceptives remain insufficient, particularly in regions where access to FP services is limited, leading to

continued high rates of unintended pregnancies and associated adverse outcomes [4].

These challenges are particularly pronounced in low-income settings like South Sudan, where the utilization of FP services remains low due to a range of barriers. South Sudan faces unique challenges, including ongoing conflicts that disrupt health services, deeply entrenched cultural beliefs favoring large families, and limited male involvement in reproductive decision-making [1, 13]. Furthermore, existing FP programs in the country have struggled with consistent service delivery and accessibility, exacerbating the unmet need for contraception [14]. To improve reproductive health outcomes, it is essential to not only address these barriers but also critically evaluate the effectiveness of existing FP initiatives.

Barriers to the use of family planning have been identified across different contexts, with both commonalities and unique challenges depending on the region and population. These barriers include spousal disapproval, fear of side effects, low perceived risk of pregnancy, and misconceptions about contraceptives [5, 14]. Cultural and religious beliefs, particularly in Sub-Saharan Africa, significantly shape attitudes toward FP, often limiting its acceptance and use [1, 3]. Additionally, a significant barrier in many settings is the absence of male involvement in FP decisions [11, 12].

These dynamics have accounted for the critical role of contraceptive counseling, as it can influence not only women's autonomy but also the involvement of their partners in the decision-making process [17]. However, tiered-effectiveness counselling, while informative, has been critiqued for potentially restricting patient autonomy by prioritizing certain methods over others based on their effectiveness rather than individual preference and context [6, 8]. Therefore, emphasizing person-centered methods and reproductive justice frameworks that support women's autonomy and shared decision-making is essential for improving family planning outcomes [15].

Further, behavioural obstacles, such as reliance on traditional methods and widespread misconceptions about modern contraceptives, persist, especially among youth. Misunderstandings about the safety and efficacy of contraceptive methods can deter individuals from seeking out and utilizing these services [10]. Financial limitations also present significant challenges, as the cost of contraceptives and associated services can be prohibitive for marginalized groups, impacting their ability to make autonomous reproductive choices [9]. Innovative solutions like self-care practices and self-administration of contraceptive injectables are promising

advancements in enhancing access and autonomy [7].

In this study, we aim to gain a deeper understanding of the specific obstacles faced by women in Bor South County, South Sudan, and evaluate the effectiveness of current FP programs. By focusing on service delivery and increasing male involvement, this research seeks to contribute to better reproductive health outcomes in the region.

Hypotheses

1. *Male Involvement:* Insufficient male involvement in family planning decisions negatively impacts the utilization of family planning programs.
2. *Access to Services:* Less access to family planning services is the main barrier to their utilization.
3. *Factors Influencing Utilization of Family Planning Services:* There is no significant relationship between an individual's utilization of family planning services and their location, knowledge of family planning programs, occupation, and religion.

The other sections of the study include the materials and methods. The next section presents the findings and discusses the existing literature, and the last section concludes.

Materials and Methods

Study Design

The study used a cross-sectional method to identify barriers to family planning utilization as well as evaluate the efficacy of current family planning methods in Bor South County, South Sudan. The cross-sectional approach was selected since it allows the gathering of the data at a single point in time, which offers a glimpse of the current situation regarding the use of family planning in the region.

Study Area and Population

The work was conducted in Bor South County, located in South Sudan. This area was

selected due to its peak fertility rates, low contraceptive prevalence, and significant need for improved family planning services. The study population covers women of reproductive age (15-49 years) who live in Bor South County.

Sample Size and Sampling Technique

The study involved a random selection of 288 women of reproductive age. The sample size was obtained using a standard sample size calculation formula for cross-sectional studies, which includes the estimated prevalence of contraceptive use as well as the desired level of precision. A multistage sampling method was used with random selection of households and eligible women within those households.

Data Collection

Data were gathered from January to March 2024 using standard questionnaires. The questionnaires were created to gather extensive information on socio-demographic characteristics, family planning knowledge and attitudes, barriers to family planning utilization, and satisfaction with existing family planning programs. The questionnaires were validated and pre-tested to ensure their clarity, relevance, and reliability.

Data Collection Procedure

Trained female data collectors conducted the surveys through face-to-face interviews. This approach was selected to ensure accurate data collection, especially in a context where literacy levels may vary. Thorough training was received by the data collectors on the study objectives, ethical considerations, and interview techniques. Data collection was supervised by the principal investigators to ensure compliance with standards, protocols, and data quality.

Hypotheses

1. Male Involvement

- i. *H0*: Insufficient male participation in family planning decisions has no

adverse effect on the utilization of family planning methods.

- ii. *H1*: Insufficient male engagement in family planning decisions has a detrimental effect on the use of family planning services.

2. Access to Services

- i. *H0*: Insufficient access to family planning services does not significantly hinder their utilization.
- ii. *H1*: Less availability of family planning methods significantly hinders their utilization.

3. Factors Influencing Utilization of Family Planning Services

- i. *H0*: There is no significant relation between an individual's usage of family planning services and their location, occupation, religious affiliation, and familiarity with family planning methods.
- ii. *H1*: There is a significant relation between individuals' usage of family planning services and their location, occupation, religious affiliation, and familiarity with family planning methods.

Data Analysis

Data analysis was done by SPSS version 26.0 software which involves the following steps

1. *Univariate Analysis*: The socio-demographic characteristics of the participants, knowledge and attitudes towards family planning, and the amount of family planning usage were summarized using descriptive statistics.
2. *Bivariate Analysis*: Cross-tabulations and chi-square tests were conducted to examine associations between key variables such as cultural and religious beliefs, male involvement, access to services, and contraceptive use.
3. *Logistic Regression*: Logistic regression analysis was utilized to identify relevant

predictors of family planning. This method helped to control potential confounders and find the independent effects of various factors on contraceptive use.

4. Normality Check is performed to validate the use of statistical tests. Chi-square tests explored associations, while logistic regression identified predictors.

Analysis and Results

Male Involvement

Table 1 illustrates the distribution of responses regarding male participation in family planning services and their personal use of these services.

Table 1. Male Involvement in Family Planning Services

Do you think men are cooperative and like family planning?	Have you ever used family planning services?			Total
	No Response	No	Yes	
No Response	130	0	0	130
No	0	43	11	54
Yes	0	30	74	104
Total	130	73	85	288

Pearson chi-square = 355.224, p-value = 0.00

1. A large number of respondents (130) did not provide a response on the level of cooperation among men who are cooperative or like family planning.
2. Among those who did respond, 43 did not think men are cooperative or like family planning, while 30 thought they do, and 11 thought they do but have not used family planning services.
3. The majority (74) of those who thought men are cooperative and like family planning have used family planning services.

H1: Insufficient male engagement in family planning decisions has a detrimental effect on the use of family planning services.

The Pearson chi-square value of 355.224 and p-value of 0.00 suggest a significant association, which rejects the null hypothesis that the absence of male engagement has no effect on the utilization of family planning services.

Access to Services

Table 2 presents the reasons given by respondents who have never used family planning services and those who have used them.

Results of Hypothesis Test

H0: Insufficient male participation in family planning decisions has no adverse effect on the utilization of family planning methods.

Table 2. Barriers to Family Planning Service Utilization

Never used family planning, what are your reasons for not using	Ever used family planning services			Total
	No Response	No	Yes	
No Response	130	0	85	215
Against culture/religion	0	15	0	15
Desire to have more children	0	7	0	7
Fear of side effects	0	35	0	35
Lack of knowledge	0	16	0	16
Total	130	73	85	288

Pearson chi-square = 288.00, p-value = 0.00

1. The majority (215) did not provide a specific reason for not using family planning services.
2. Cultural or religious beliefs, desire to have additional children, concerns about potential adverse effects, and lack of understanding were identified as factors contributing to the decision not to utilize family planning services.

Results of Hypothesis Tests

1. H0: Insufficient access to family planning services does not significantly hinder their utilization.

2. H1: Less availability of family planning methods significantly hinders their utilization.
3. The Pearson chi-square value of 288.00 and a p-value of 0.00 suggest a strong association between these factors and the use of family planning methods leads to the rejection of the null hypothesis that inadequate access is not a major barrier.

Factors Influencing Utilization of Family Planning Services

Table 3 illustrates the logistic regression analysis identifies crucial factors that impact the utilization of family planning methods.

Table 3. Logistic Analysis of Factors Influence Use of Family Planning Services

Variable	Coefficient (B)	Interpretation	Hypothesis
Constant	0.152	Denotes the initial log odds value when all predictors have a value of 0.	Not applicable (baseline reference)
Payam	0.347	For each unit increase in Payam, the odds of using family planning services increase by 1.414 times	Individuals residing in specific regions (Payam) are likely to use family planning services.
Knowledge of FP Methods	0.228	Acquiring knowledge about family planning methods enhances the likelihood of using the method by 1.256 times	Individuals who have knowledge of family planning methods are more likely to use family planning methods.
Religion	21.542	Due to the large standard error, the impact of Religion on using family planning services is uncertain and requires further investigation	Pending further analysis and refinement of the variable, religion may significantly impact family planning service utilization.
Occupation	-1.959	Certain occupations are associated with 0.141 times lower odds of using family planning services compared to other occupations	Occupation influences the likelihood of using family planning methods, and certain occupations show lower utilization rates.

1. Payam: Individuals from specific areas are more likely to use family planning methods with a positive coefficient indicating increased odds.

2. Knowledge of Family Planning Methods: The positive coefficient indicates that knowledge increases the likelihood of utilizing family planning methods.

3. Religion: The high coefficient and large standard error suggest that religion's impact is uncertain and needs further investigation.
4. Occupation: The negative coefficient suggests that certain professions are associated with less utilization of family planning methods.

Results of Hypothesis Test

H0: There is no significant relation between individuals' usage of family planning services and their location, occupation, religious affiliation, and familiarity with family planning methods.

H1: There is a significant relation between individuals' usage of family planning services and their location, occupation, religious affiliation, and familiarity with family planning methods.

The results reject the null hypothesis that there is no significant relationship between family planning service utilization and location, knowledge, religion, and occupation, supporting the alternative hypothesis of a significant relationship.

Discussion

The findings of our study align with and expand upon the existing body of literature regarding family planning utilization and its barriers in Sub-Saharan Africa and other low- and middle-income countries. This study confirms several key barriers identified in previous research while also offering new insights into specific contextual factors that influence contraceptive use among postpartum women in our study region.

Our study reveals that while participants exhibited high levels of awareness and knowledge about modern contraceptives, the actual usage rates remained significantly low. This suggests that awareness alone does not necessarily translate into increased contraceptive use, underscoring the presence of other influential factors. This observation is consistent with findings from [1], who also

noted high awareness but low contraceptive use among market women in Ghana. They identified determinants such as negative perceptions about contraceptives and the influence of husbands or partners in decision-making, which significantly reduced the likelihood of contraceptive use. These findings highlight the importance of addressing deeper sociocultural barriers beyond simply raising awareness. Both studies emphasize the critical role of male involvement in contraceptive decision-making, particularly in contexts where women with less autonomy are less likely to use contraceptives. Therefore, interventions must not only focus on improving knowledge but also on addressing the socio-cultural dynamics that inhibit contraceptive use.

Furthermore, fear of side effects, in our study, is found to be a significant factor influencing the use of modern contraceptives, which aligns with findings from [23]. They highlighted that fear of side effects was a prevalent reason for the non-utilization of family planning methods among women in Sub-Saharan Africa. This fear, rooted in the health system and socio-demographic determinants, contributes significantly to the unmet need for family planning in the region. Similarly, [5] found that side effects were a major reason for discontinuation of long-acting modern contraceptive methods, with 40.2% of women discontinuing due to side effects in their analysis across 36 low- and middle-income countries. The consistency of these findings across different studies emphasizes the critical need for health systems to address concerns about side effects more effectively. Comprehensive counseling and reassurance about the safety and management of potential side effects are essential strategies to improve the uptake and continuation of modern contraceptive methods.

Misconceptions about modern contraceptives and cultural taboos were significant deterrents to contraceptive use in our study. This finding is consistent with [10], who

emphasized the importance of addressing behavioral barriers and misconceptions. Our study also highlights the role of cultural norms in shaping contraceptive behavior, with many participants expressing concerns rooted in traditional beliefs. Recent research has found that cultural taboos and gender norms can significantly hinder male participation in contraceptive use, further complicating efforts to increase contraceptive uptake [2]. Therefore, tailored educational interventions that offer these misconceptions and provide exact information are needed to improve contraceptive uptake.

Our study did not find strong evidence that financial constraints were a major barrier to contraceptive use. This discrepancy may be due to differences in the local economic context or the availability of subsidized contraceptive options. However, financial constraints were highlighted as a barrier to contraceptive use in a study by [9]. They reported that the cost of contraceptives was prohibitive, particularly among those using fewer effective methods. This underscores the need for policies that decrease the financial barriers as well as increase access to affordable contraceptive options, especially for low-income women. Moreover, geographical barriers and poor infrastructure have been cited as significant challenges to accessing contraceptive services, particularly in rural areas. Research from Tanzania suggests that the distance to health facilities and the costs associated with transportation were substantial barriers to accessing contraceptives, reinforcing the need for enhanced service delivery in rural regions [19].

Based on the findings of this study and the existing literature, several critical policy implications and recommendations can emerge. First, enhancing education and counseling efforts is essential to address fears, health concerns, and misconceptions about contraceptives. Programs engaging men in family planning and promoting couple-based

decision-making are crucial for challenging restrictive gender norms. To ensure financial accessibility, policies should aim to reduce contraceptive costs, making them affordable for all women, particularly those from low-income backgrounds. Moreover, a shift towards patient-centered, justice-oriented family planning services that prioritize women's autonomy and preferences is necessary.

However, this study is limited in various aspects that warrant consideration. One primary limitation lies in the absence of establishing a causal relationship between barriers and contraceptive use, thus lacking a crucial depth of understanding. Moreover, the study's vulnerability to recall and social desirability biases raises questions about the reliability of the results. Furthermore, the findings' limited generalizability to diverse socio-cultural settings may hinder their applicability in broader contexts, possibly overlooking various nuanced experiences and barriers. Lastly, the study's failure to focus on the significance of service availability and quality represents a notable gap in investigating the broader landscape of contraceptive usage.

Future research should focus on several areas to build on the current findings. Longitudinal studies are needed to explore causal relationships over time. Qualitative research should be conducted to gain deeper insights into socio-cultural dynamics. Investigating health system factors, such as service availability and provider attitudes, is essential. Lastly, evaluating the effectiveness of interventions through pilot studies in diverse settings, with a focus on scalability and sustainability, is crucial.

Conclusion

This study highlights several critical barriers to the utilization of family planning services among postpartum women in Bor South County, South Sudan. Despite high levels of awareness and knowledge about modern contraceptives, actual usage rates remain low,

primarily due to significant socio-cultural barriers, including insufficient male involvement in reproductive health decisions, fears related to side effects, and deeply rooted cultural and religious beliefs. In addition to socio-cultural barriers, financial constraints and geographical barriers further complicate access to family planning services, particularly in rural areas where infrastructure is limited. To improve contraceptive uptake and ultimately enhance reproductive health outcomes, it is essential to adopt patient-centered, justice-oriented approaches that prioritize women's autonomy and address the broader societal factors at play. By focusing on these critical areas, future initiatives can foster a more supportive environment for contraceptive use in the women of Bor South County.

What is Already Know on this Topic

Knowledge, Attitudes, Practices, Family Planning, Women of Reproductive Age, Socio-demographic Factors, Bor South, Jonglei State, South Sudan.

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What this Study Adds

This study adds the understandings of the Barriers to Family Planning Utilization and the Effectiveness of Family Planning Programs in Bor South, Jonglei State. The research will help the State MoH to design interventions; inform decision for improvement of family planning in the state.

Authors' Contributions

The author participated in questionnaire design, data collection, data analysis and interpretation and writing including drafting and approval of manuscript, review and manuscript.

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Competing Interests

The authors declare that they have no competing interests.

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