

# Analysis of factors associated with the non-use of modern contraceptive methods among multiparous women in Kisangani City, Democratic Republic of the Congo

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## ABSTRACT

### Introduction

Family planning is a cornerstone of women's reproductive health and plays a pivotal role in the socio-economic development of communities. The adoption of modern contraceptive methods (MCM) is critical for improving reproductive health and ensuring effective birth control. Despite its importance, the adoption of MCM remains limited in Kisangani City, Democratic Republic of the Congo, due to a range of sociodemographic, sociocultural, and socioeconomic factors.

### Purpose

This study aims to investigate the determinants of non-use of modern contraceptive methods among multiparous women in Kisangani, with a focus on understanding the barriers to adoption. By highlighting these determinants, the study seeks to contribute to global efforts to improve reproductive health interventions.

### Methods

Data were collected between February and July 2024 from various health areas in the urban and rural communities of Kisangani. A sample of 811 women participated in the study. The data were entered and analyzed using SPSS software (version 21.0). Logistic regression analysis was employed to identify the factors significantly associated with the non-use of modern contraceptive methods. Odds ratios (OR) with p-values were calculated to determine the strength and significance of these associations.

### Results

The analysis revealed that several factors significantly influenced the non-use of modern contraceptive methods. Women belonging to non-Christian religions were less likely to use MCM (OR = 0.46, p = 0.00). A low level of education, either by the woman or her partner, was strongly associated with a higher likelihood of non-use (OR = 2.66 and 2.40, respectively, p = 0.00). Unemployed women were significantly more likely not to use MCM (OR = 2.37, p = 0.00), and unemployed spouses also influenced non-use (OR = 2.17, p = 0.00).

### Conclusion

The study reveals socio-demographic, cultural, and economic barriers hindering the use of modern contraceptives in Kisangani, particularly among women with low levels of education, those who are economically disadvantaged, and those belonging to certain religious groups. It recommends targeted strategies (education, economic empowerment, and tailored campaigns) to reduce unwanted pregnancies and improve women's reproductive health.

## INTRODUCTION

Family planning is an essential component of women's reproductive health and the socio-economic development of communities (Kassim et al., 2022; Olakunde et al., 2022; Phiri et al., 2023; Woto et al., 2024). The adoption of modern contraceptive methods (MCM) not only helps prevent unwanted pregnancies but also reduces the risks associated with maternal and infant mortality, while improving family well-being by alleviating the economic pressures generated by large families (OMS, 2021).

Despite global advances in the use of MCMs, sub-Saharan Africa, and more specifically the Democratic Republic of the Congo (DRC), remains a region where their use is notably low. According to the Demographic and Health Survey (EDS-RDC, 2018), the contraceptive prevalence rate in the DRC stands at approximately 19.8%, well below the African average of 28.5% (UNFPA, 2022). In the city of Kisangani, this issue is further compounded by various socio-economic factors, restrictive cultural and religious norms, and limited access to reproductive health services (Mpunga et al., 2020). While the contraceptive situation in Kisangani reflects broader regional trends, there are unique contextual challenges specific to this area of the DRC that need to be addressed. Comparative regional data from neighboring sub-Saharan African countries, such as Nigeria and Ethiopia, highlight the complexities of family planning in resource-limited settings and the influence of cultural and socio-economic factors on contraceptive uptake. For instance, in Nigeria, although contraceptive use is relatively high, many women opt for less effective traditional methods over modern contraceptives, primarily due to fears of side effects. This finding suggests the importance of patient education on the variety of modern contraceptive methods, their side effects, and management strategies (Ajayi et al., 2018).

In Ethiopia, family planning interventions targeting younger women, those in rural areas, the poor, and Muslim women, as well as efforts to empower women, have been shown to increase contraceptive uptake among sexually active women (Mulugeta et al., 2022). These findings underscore the need for region-specific approaches to family planning that consider socio-cultural and economic differences. In Kisangani, multiparous women face particular challenges, as their ability to space

or limit births is often influenced by their social status, cultural environment, and both their own and their partners' perceptions of contraceptive methods (Tchokossa et al., 2019). The benefits associated with the use of MCMs, particularly in reducing the risk of complications from closely spaced and multiple pregnancies, are significant for this population. Previous research has established that various factors, such as educational level, socio-economic status, and religious beliefs, play a critical role in the non-use of MCMs (Cleland et al., 2012; Hounton et al., 2015). However, in Kisangani, where resources are limited and cultural norms are deeply ingrained, it is essential to identify the specific barriers preventing the uptake of these methods. This knowledge is crucial for developing targeted interventions aimed at overcoming these barriers and promoting effective family planning.

The aim of this study is to explore the socio-demographic, socio-cultural, and socio-economic factors associated with the non-use of MCMs among multiparous women in Kisangani. By identifying these factors, the study seeks to provide an evidence base to guide reproductive health policies and programs tailored to the unique context of Kisangani and contribute to the broader efforts to improve family planning practices across sub-Saharan Africa.

## METHODS

### *Study Design*

This research is a cross-sectional analytical survey aimed at identifying factors associated with the non-use of modern contraceptive methods (MCM) among multiparous women in Kisangani, DRC. The study site was chosen for its unique socio-economic and cultural dynamics, which influence the adoption of family planning methods. Kisangani is a key urban-rural city in the DRC, where access to reproductive health services and adherence to cultural and religious norms vary, making it a representative site to explore the barriers to MCM use. Data collection took place between February and July 2024 in various health areas within the urban and rural communities of Kisangani.

### *Eligibility Criteria*

#### *Inclusion Criteria:*

- Multiparous women (having had at least two live children).

- Residing in the city of Kisangani for at least 12 months.
- Willing to participate voluntarily in the study after signing an informed consent form.

#### Exclusion Criteria:

- Women who are nulliparous or primiparous.
- Women suffering from cognitive or mental disorders that limit their active participation.

#### Sample Size

The sample size was determined using Cochran's formula, specifically designed for cross-sectional studies. After applying the formula, a minimum sample size of 615 participants was estimated. To account for potential non-response, the final sample size was increased to 811 women.

#### Methods of Data Collection

Data were collected by trained interviewers using a structured questionnaire. The questionnaire was designed to include both closed and open-ended questions, focusing on socio-demographic, socio-cultural, and socio-economic factors related to the non-use of MCMs. The questionnaire underwent a validation process to ensure its clarity, reliability, and relevance. This process included a pre-test conducted in a pilot study with 50 women (not included in the final sample) to assess the clarity of the questions and identify any issues in the questionnaire's design. The feedback from the pre-test led to modifications, particularly simplifying the wording of questions to ensure they were easily understood by the study participants. The validated questionnaire was used to collect data from the final sample.

#### Statistical Analysis

The data were entered and analyzed using SPSS software (version 21.0). The analysis steps included:

##### Descriptive Analysis:

- Calculation of frequencies, proportions, and averages to describe the characteristics of the study population.

##### Bivariate Analysis:

- A Chi-square test was used to examine the association between independent variables and non-use of MCMs.

- Variables with a p-value of  $\leq 0.05$  were retained for multivariate analysis.

##### Multivariate Analysis:

- A binary logistic regression model was used to identify factors independently associated with non-use of MCMs.
- Results were expressed in terms of odds ratios (OR) with 95% confidence intervals (95% CI). The choice of logistic regression was justified because it is appropriate for modeling binary outcomes, where the dependent variable (use or non-use of MCMs) is categorical.

##### Ethical Considerations

The study received approval from the bioethics committee of the ISTM Kinshasa (Reference: N°0013/CBE/ISTM/KIN/RDC/PMBBL/of 29/11/2023). Ethical considerations included ensuring participants' rights and privacy were respected. All participants were fully informed about the study's objectives, methodology, and potential implications. Written informed consent was obtained from all participants prior to data collection. Participants were assured of their right to withdraw at any time without any consequences. Confidentiality of the data was rigorously maintained, and the data were stored in a secure database accessible only to the research team. All findings were anonymized to ensure participants' privacy.

## RESULTS

**Table 1** presents the analysis of socio-demographic variables and their association with the non-use of modern contraceptive methods (MCM). It includes data on age, marriage age, form and type of marriage, and number of children, alongside their respective odds ratios (OR), 95% confidence intervals (CI), chi-square ( $\chi^2$ ) values, and significance levels.

**Table 1:**  
Socio-demographic factors associated with non-use of modern contraceptive methods (MCM)

VARIABLES	UAMCM		OR	(IC95%)	$\chi^2$	p	Sign.
	No n=559	Yes n=252					
<b>Age</b>							
≤ to 31	306	133	1.02	(0.93 - 1.12)	0.27	0.64	NS
> to 31	253	119					
<b>Marriage age</b>							
≥ to 19	244	125	0.78	(0.58 - 1.06)	2.48	0.12	NS
≤ to 18	315	127					
<b>Form of marriage</b>							
Legal marriage	122	55	1.00	(0.69 - 1.43)	0.00	1.00	NS
Common-law union	437	197					
<b>Type of marriage</b>							
Monogamous	488	215	1.18	(0.77 - 1.81)	0.59	0.50	NS
Polygamous	71	37					
<b>Number of children</b>							
≤ to 5	251	142	0.63	(0.46 - 0.85)	9.11	0.00	S
6 and mores	308	110					

The data in **Table 1** highlight socio-demographic factors associated with the non-use of modern contraceptive methods (MCM). Factors such as age, marriage age, form of marriage, and type of marriage were not found to have statistically significant associations with MCM use, as their p-values exceeded 0.05. This suggests that, in Kisangani, these socio-cultural norms do not strongly influence women's decisions regarding contraception. In contrast, the number of children was significantly associated with MCM usage ( $p = 0.00$ ). Women with five or fewer children are less likely to avoid using MCM (OR = 0.63, 95% CI: 0.46-0.85) compared to those with six or more children. This indicates that women with larger families may be more likely to adopt modern contraception, possibly due to the economic and physical burdens of having many children, which makes birth spacing or limiting family size more appealing. The odds ratio of 0.63 means the odds of non-use of MCM decrease by 37% among women with five or fewer children, suggesting that family size plays a key role in contraceptive decision-making.

**Table 2:**  
Socio-cultural factors associated with non-use of MCMs

VARIABLES	UAMCM		OR	(IC95%)	$\chi^2$	p	Sign.
	No n=559	Yes n=252					
<b>Religion</b>							
Non-Christian	201	52	0.46	(0.32 - 0.65)	18.99	0.00	S
Christian	358	200					
<b>Level of education</b>							
Low level	521	211	2.66	(1.66 - 4.26)	17.72	0.00	S
Higher level	38	41					
<b>Spouse's level of education</b>							
Low level	411	135	2.40	(1.76 - 3.28)	31.43	0.00	S
Upper level	148	117					

**Table 2** reveals significant associations between religion and education level with the non-use of modern

contraceptive methods (MCM). Non-Christian women were found to be less likely to avoid using MCM (OR = 0.46, 95% CI: 0.32-0.65,  $p = 0.00$ ), suggesting that religious beliefs may influence contraceptive use, with non-Christian women being more open to modern contraception compared to their Christian counterparts. Additionally, education level played a critical role: women with lower education levels were significantly more likely to not use MCM (OR = 2.66, 95% CI: 1.66-4.26,  $p = 0.00$ ), and the same trend was observed for their spouses' education levels (OR = 2.40, 95% CI: 1.76-3.28,  $p = 0.00$ ).

**Table 3:**  
Socio-economic factors associated with non-use of modern contraceptive methods (MCM)

VARIABLES	UAMCM		OR	(IC95%)	$\chi^2$	p	Sign.
	No n=559	Yes n=252					
<b>Woman's occupation</b>							
Unemployed	519	213	2.37	(1.48 - 3.79)	13.67	0.00	S
Working	40	39					
<b>Husband's occupation</b>							
Unemployed	442	160	2.17	(1.56 - 3.01)	22.03	0.00	S
Employee	117	92					

A significant association was observed for both employment status of women and their husbands with the non-use of modern contraceptive methods (MCM). Unemployed women were more likely to not use MCM compared to those who were employed (OR = 2.37, 95% CI: 1.48-3.79,  $p = 0.00$ ). Similarly, women with unemployed husbands were significantly more likely to not use MCM compared to those whose husbands were employed (OR = 2.17, 95% CI: 1.56-3.01,  $p = 0.00$ ).

## DISCUSSION

The findings of this study emphasize key factors associated with the non-use of modern contraceptive methods (MCM) among multiparous women in Kisangani, shedding light on socio-demographic, socio-cultural, and socio-economic determinants. A significant association was found between the desire for fewer children ( $\leq 5$ ) and MCM use (OR = 0.63;  $p = 0.00$ ), which aligns with [Cleland et al. \(2012\)](#), who observed that smaller family preferences encourage contraceptive adoption. However, age and age at marriage were not significant predictors ( $p > 0.05$ ), diverging from [Tchokossa et al. \(2019\)](#). This discrepancy may stem from cultural and informational differences in Kisangani, where other factors, such as socio-cultural norms or access to family planning services, may play a

more substantial role in contraceptive choices. In contrast to the findings of Tchokossa et al. (2019), this study highlights the need for region-specific research to better understand the nuances of contraceptive decision-making in different cultural contexts.

Socio-cultural factors such as religion and education were also significant. Non-Christian women (OR = 0.46;  $p = 0.00$ ) and those with low education levels (OR = 2.66;  $p = 0.00$ ), or whose partners had low education levels (OR = 2.40;  $p = 0.00$ ), were less likely to use MCM. These results are consistent with the findings of Hounton et al. (2015) and Bongaarts and Hardee (2019), who emphasized the impact of education on reproductive autonomy and the demystification of contraceptives. Notably, the influence of religion on contraceptive use warrants further investigation. Qualitative insights could provide a more nuanced understanding of how religious beliefs shape contraceptive attitudes and behaviors. Moreover, secondary data could further substantiate these findings and help design culturally sensitive family planning interventions that account for religious influences.

In terms of socio-economic factors, both employment status and the employment status of partners were significant. Unemployed women (OR = 2.37;  $p = 0.00$ ) and those with unemployed partners (OR = 2.17;  $p = 0.00$ ) were more likely to forgo MCM use, a finding corroborated by Mpunga et al. (2020). Economic constraints may limit access to healthcare and family planning services, making it essential to consider the economic dimension in future interventions. These findings suggest that improving economic empowerment could enhance contraceptive uptake. Employment programs targeting both women and their spouses could be a practical intervention to increase contraceptive use. This finding also resonates with studies by Manet et al. (2023), who highlighted the importance of financial accessibility in facilitating contraceptive use, particularly in resource-constrained settings.

The limitations of this study should be critically assessed. Self-reported data are inherently prone to biases, including social desirability bias, where respondents may underreport behaviors like non-use of contraception. Additionally, the representativeness of the sample may limit the generalizability of the findings to other regions or

demographic groups. Future studies should address these limitations by incorporating more robust sampling techniques and using objective measures of contraceptive use, such as health service records.

Implications for practice include the need for culturally tailored family planning interventions that account for socio-economic, educational, and religious factors. Community-based education programs that involve religious leaders, address gender inequalities, and promote economic empowerment could facilitate greater uptake of MCM. Specific policy recommendations include improving access to affordable contraceptive methods, integrating family planning education into school curricula, and providing support for unemployed women and their families to alleviate financial barriers to contraceptive access. These findings contribute to a broader understanding of the barriers to contraceptive use and emphasize the importance of considering multiple socio-demographic, socio-cultural, and socio-economic factors in the design of effective family planning programs in Kisangani. Further studies could explore the interplay between these factors and examine the role of partners in contraceptive decision-making, as well as the potential impact of improving economic conditions on contraceptive use.

## CONCLUSION

This study identified key factors limiting the use of modern contraceptive methods (MCM) among multiparous women in Kisangani, focusing on socio-demographic, socio-cultural, and socio-economic barriers, particularly among poorly educated women, non-Christian groups, and economically vulnerable households. The strong link between low education, financial insecurity, and non-use of MCM highlights the need for comprehensive interventions. Awareness campaigns should target women, their partners, and the broader community, with culturally tailored messages. Economic empowerment, alongside improved access to affordable MCM services, is crucial. Future research, including longitudinal studies, will help refine strategies and monitor MCM adoption trends over time.

**Ethical Approval:** The study received approval from the bioethics committee of the ISTM Kinshasa (Reference: N°0013/CBE/ISTM/KIN/RDC/PMBBL/of 29/11/2023).

**Conflicts of Interest:** None declared.

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