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Brief Report

Factors associated with modern contraceptives use in Nigerian women: a systematic review of quantitative studies

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Abstract

Background Contraceptive use is essential for promoting sexual and reproductive health, directly impacting public health and national development through effective fertility management. In Nigeria, however, the adoption of modern contraceptive methods remains consistently low, contributing to high maternal mortality rates despite a broad awareness of contraceptive options among women of reproductive age. The systematic review synthesised key factors associated with the utilisation of modern contraceptives among Nigerian women of reproductive age, identifying specific influences on contraceptive uptake to guide future health interventions.

Method A comprehensive search was conducted across three databases, MEDLINE, Scopus, and Web of Science, to identify studies examining the determinants of modern contraceptive use among Nigerian women. Eligible studies were assessed and manually extracted, and findings were consolidated in a narrative review format.

Results From the literature search, ten studies met the criteria for inclusion. The synthesis highlighted a generally high level of awareness regarding contraceptive methods among Nigerian women, although modern contraceptive prevalence remains significantly low. The male condom emerged as the most known and utilised contraceptive method, while implants and injectables were mostly used by women.

Key factors influencing contraceptive uptake were categorised into sociodemographic, economic, cultural, and religious domains. Barriers to modern contraceptive use included a strong desire for additional children, concerns about side effects, spousal opposition, limited access to contraceptive services, and a lack of comprehensive knowledge.

Conclusion Collaborative efforts between health agencies, community leaders, and advocacy groups should prioritise raising awareness, particularly through culturally sensitive education, to help mitigate sociocultural and economic obstacles. Additionally, it is crucial to involve male partners in these initiatives, as their support and understanding can significantly influence contraceptive decisions, helping to overcome some of the barriers to use. Strengthened advocacy efforts and inclusive educational programs are imperative to improving contraceptive uptake and ultimately enhancing reproductive health outcomes in Nigeria.

Keywords Modern contraceptives · Nigeria · Reproductive age · Barriers · Maternal mortality

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1 Introduction

The sexual and reproductive health of women is a prominent public health concern globally [1]. The United Nations Sustainable Development Goals (SDG) agenda for 2030 has set targets 3.7, to ensure healthy lives and promote wellness for all, and 5.6, to achieve gender equality. This is done through the empowerment of women and the promotion of accessibility to reproductive and sexual health services by incorporating them into national programs [2]. According to the Statista Research Department [3], the prevalence of contraception in Nigerian women aged 15 to 49 is 18% with only 21% use among women in a union [3]. Nigeria's fertility is among the highest in the world at 5.1 children per woman compared to the global rate of 2.3 creating challenges to its development and public health [4]. The maternal mortality ratio is 1,047 per 100,000 births and is high when compared with developed countries like the United Kingdom with a rate of 11.56 [4]. Nigeria has been ranked globally as the 2nd country contributing to maternal death. It continues to encounter high rates due to factors like pregnancy and postpartum complications, unsafe abortions, labour complications, anaemia, and eclampsia [5].

Nigeria has huge diversity and is ranked as the 7th most populous country in the world with a growing population of 223.8 million after China, India, the United States, Indonesia, Japan, and Brazil [6]. The country's population is increasing rapidly and is projected to be the 3rd most populated country by 2050 if left uncontrolled [6]. Nigeria has over 133 million of its population living in poverty and has been classed as a lower middle-income country due to the high number of people living in poverty [7]. Many findings have reported a high awareness of family planning services among Nigerian women, but the knowledge has not been translated into use [3, 8]. Many countries have instituted diverse population policies to curb the high fertility rate. A proven approach to controlling this is the efficient use of contraception methods [9]. Considering the strict abortion regulations in some sub-Saharan African countries; Nigeria inclusive, the low rate of contraceptive use is a significant public health challenge in this region [10].

Despite various quantitative and qualitative studies analysing contraceptive use across different regions in Nigeria and broader reviews in Sub-Saharan Africa, there remains a gap in understanding the diverse factors influencing contraceptive uptake among Nigerian women [10–12].

Several studies have explored factors influencing contraceptive use in Nigeria [8, 13, 14], with systematic reviews carried out in Sub-Saharan Africa [15, 16] and studies using national demographic surveys [17–19]. However, limited research specifically compiles primary studies or articles from different regions of Nigeria.

This study aims to bridge this gap by synthesizing findings from primary quantitative research conducted across various Nigerian states. By consolidating region-specific evidence, it seeks to provide a more comprehensive understanding of the factors influencing contraceptive use. The findings will contribute to informing targeted policies and interventions aimed at improving family planning uptake among Nigerian women of reproductive age.

2 Methodology

Three electronic databases MEDLINE, Scopus, and Web of Science were searched following the steps and recommendations from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement [20]. Three databases were used based on systematic review guidelines [20, 21]. Across the databases, the keywords and their variations were combined using the "OR" Boolean operator to ensure the databases searched for at least one of the keywords. The interest group was combined using the "OR" operator as well. For each of the groups, the combined generated search was then merged with the "AND" operator to achieve a search result that included all the search key terms generated previously.

The review process involved initial screening and selection of the articles. The studies retrieved from the database search were exported to the EndNote reference manager and duplicate studies were removed. The abstract screening was the next step to identify studies that might meet the inclusion criteria, leading to more journals being excluded before proceeding to the full-text retrieval. The study included girls and women aged 15–49 years; the common age range referred to as the reproductive age group based on previous studies. Only studies that presented results as quantitative data were included. The articles searched were limited to studies published between 2015 and 2023 to provide recent data. The study design was restricted to primary research conducted in any setting (Hospital or community) and excluded articles that made use of demographic data (secondary analysis).

Quality assessment was done using the quality assessment tool for observational cohort and cross-sectional studies by the National Institute of Health; this tool has been used to assess the quality of journal articles in similar quantitative systematic reviews done in Africa [8, 16]. The tool comprises 14 questions that evaluate different aspects of the study paper from the topic, study population, recruitment, and selection process to the analysis of their findings to assess bias. Each of the questions is scored either a yes, no or others [22]. The questions were revised and modified to determine and consider the included review articles but ensured no deviating from the initial structure of the tool (Table 1).

Ratings were done after evaluation of the criteria to determine the range [17]. All the included studies provided clear results about their objectives, study population, sampling technique and sample size and all rated good based on methodology and results analysis. The measurement of exposure before the outcome and adjusting for confounding factors are not applicable and therefore could not be determined because both outcome and exposure are measured at the same time in a cross-sectional study design. The "No" assigned to the questions on these areas does not impact a negative rating on the paper based on guidance from the tool [16].

3 Results

A total of 753 studies were identified after the electronic database search. After the removal of duplicates, 172 articles were excluded. Five hundred and eighty-one articles were reviewed based on title excluding 482 studies. The remaining 99 studies were screened for inclusion based on their abstracts. From these, 76 studies were excluded due to either being irrelevant to the research question, or target population or being secondary research or review articles. Subsequently, after the abstract screening, 23 articles were selected for full-text reading. 13 studies were further excluded, some for employing mixed methods, qualitative type and for not adequately addressing the review question. Ten articles fulfilled the inclusion criteria and were included in the review for the narrative synthesis.

The 10 studies investigated the factors associated with the use of modern contraceptives among women of reproductive age and the modern contraceptive prevalence rate (mCPR). Across the reviewed journal articles, a general observation was the high awareness of modern contraception among respondents with the knowledge reaching almost 100% in two articles [23, 24]. Although, many of the women had basic knowledge about contraception and its associated benefits, a large discrepancy between knowledge and actual use was reported in all the reviewed studies. Seven studies indicated both awareness level and prevalence rates. The prevalence rates and level of knowledge are presented in Table 2 below.

Two articles [25, 29] examined the influence of healthcare workers on contraceptive practices, highlighting their role in shaping contraceptive decisions and method selection. Similarly, studies [26, 30] explored family planning practices, while one article [31] assessed the unmet contraceptive needs of women, addressing concerns related to both spacing and limiting pregnancies.

In terms of contraceptive methods, three studies [26, 27, 30] reported injectables as the most common modern contraceptives used by women. Conversely, four studies [23, 28, 29, 31] identified male condoms as the predominant choice. One study [25] highlighted implants and intrauterine devices (IUDs) as the major modern method employed by women.

The review identified several determinants influencing contraceptive use:

Age: Women aged 31–40 consistently accounted for a larger proportion of contraceptive users. Additionally, about 30% of the studies [23, 24, 29] found that women at the extremes of reproductive age (younger or older) also exhibited higher contraceptive use, although one study [32] indicated that age influenced contraceptive choice rather than overall uptake.

Parity: Across the reviewed studies [25, 30, 31], contraceptive use was more prevalent among women with two or more children.

Marital status: Married women consistently showed higher contraceptive use than single women in about 40% of the reviewed studies [23–25, 29], while [30] presented conflicting findings.

Education: Higher educational attainment corresponded with greater contraceptive use. Women with tertiary education were consistently reported to use contraceptives more frequently than those with little or no formal education [24, 25, 27–29, 32].

Cultural and religious factors: Ethnicity plays a significant role in contraceptive practices in Nigeria, particularly among women from the Yoruba ethnic group in Southwestern Nigeria, who exhibit a notably higher uptake of contraceptive methods compared to their Igbo and Hausa counterparts. This difference can be attributed to the cultural beliefs and varying access to reproductive health services prevalent within these communities [23, 26, 29]. Additionally, religious beliefs also influence contraceptive use, with studies indicating that Christians tend to use contraception more

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Table 1 Quality assessment table using the tool for observational cohort and cross-sectional studies

Criteria	Olubodun et al. 2020	Durowade et al. 2017	Egede et al. 2015	Adeyemi et al. 2016	Dambo et al. 2017	Shemu et al. 2022	Olu-wasina, 2017	Okoeguale et al. 2022	Ajibola et al. 2020	Uthman et al. 2022
1. Did the paper state its research question and objective?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
2. Did the paper clearly state and define the population?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3. Was the response rate of eligible persons at least 50%?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
4. Were the subjects recruited from similar populations around the same time based on defined inclusion and exclusion criteria?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
5. Was sample size justification provided?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
6. Were the exposure measured before the outcome?	N	N	N	N	N	N	N	N	N	N
7. Was the duration to measure the association between exposure and outcome sufficient?	N	N	N	N	N	N	N	N	N	N
8. Were different levels of exposure of interest examined concerning the outcome of interest?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
9. Was there consistency in the definition of exposure (independent) variables?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
10. Were the exposure (s) assessed more than once?	N	N	N	N	N	N	N	N	N	N
11. Were the dependent variables (outcome) defined and applied uniformly?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
12. Were the outcome assessors blinded to the exposure status of participants?	N	N	N	N	N	N	N	N	N	N
13. Was loss to follow-up after baseline 20% or less?	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
14. Were there adjustments for confounding variables?	CD	CD	CD	CD	CD	CD	CD	CD	CD	CD

Y Yes, *N* No, **CD* cannot be determined, *NA* not applicable, *NR* not reported

Table 2 Awareness and modern contraceptive prevalence

Authors	Awareness of contraception (%)	Modern contraceptive prevalence rate (%)
[23]	98.6	50.5
[24]	100	25.4
[25]	90	17.8
[26]	73.1	47.2
[27]	92.8	33
[28]	83.3	16.3
[29]	97.4	83.4

frequently than individuals from other faiths [23, 28, 32]. However, it is important to note that two studies did not find a significant association between religion and contraceptive practices [29, 30].

Economic factors: Women from higher social classes were reported to use contraceptives more frequently, although studies [30, 32] did not find a direct correlation between economic status and contraceptive uptake.

Partner influence: Male partner approval emerged as a consistent determinant, with spousal support directly linked to contraceptive use across all reviewed studies.

Healthcare-related factors: Healthcare professionals were frequently identified as the primary source of contraceptive information. Studies [25] showed that access to reliable healthcare information directly influenced contraceptive use. However, limited access to contraceptives in rural areas remained a common barrier [29, 30].

Barriers to contraceptive use were also highlighted. Spousal disapproval frequently prevented women from adopting contraceptives. Concerns over side effects and perceived health risks were recurring deterrents. Additionally, women seeking to have more children often avoided contraceptive use. Poor healthcare service delivery, including long wait times and unfavourable provider attitudes, further discouraged adoption. Cultural and religious opposition, particularly in rural areas, remained a significant obstacle [24, 26, 28, 32].

4 Discussion

The review revealed that awareness of contraception among Nigerian women is high, with most possessing basic knowledge of contraceptive methods. Healthcare workers were identified as the primary source of information in several studies, although friends, family, and the mass media also played significant roles in shaping attitudes toward contraceptive use [33]. Interestingly, while family and friends were often seen as supportive, they sometimes contributed to negative perceptions, influencing women's attitudes and decisions [8]. However, prior studies have shown that family and friends were the major source of information for women on modern contraceptives [34, 35]. The source and quality of information are very important as this impacts the attitude of women towards MC thereby making the information from healthcare personnel the best source [38]. Getting unbiased knowledge from healthcare workers usually results in a positive attitude toward contraception and is likely to increase uptake [36]. The rate of contraceptive use in the reviewed articles was less than average with only two studies recording above 50% uptake in their investigations [23, 29]. Therefore, Nigeria is yet to achieve its set target of 17% and is still below Africa's average mCPR of 36% [37] reflecting a persistent challenge in meeting global benchmarks [38].

The male condom emerged as the most recognized and used modern contraceptive method, likely due to its affordability and its dual protection against sexually transmitted infections and unintended pregnancies [23, 28, 29, 31]. The most common MC used by females were implants and injectables [26, 27, 30] which was also reported in the National Demographic Health Survey at 6% and 4% respectively [39].

The factors associated with the use of MC identified in the review range from individual, healthcare to community levels that were further categorised into sociodemographic, cultural, economic, spousal, accessibility, and healthcare provider factors. A prominent finding is the significant role of age in shaping contraceptive behaviour among women. Notably, middle-aged, and older women exhibit a higher tendency to use contraceptives, suggestive of a desire to cease or limit childbearing at that age. Most of the reviewed articles found that women aged 30–39 had higher odds of using MC compared to younger ages. However, among this age group, it was still found that contraceptive uptake remains low

according to another author [40]. Other studies in Nigeria have proven that age is an important factor in contraceptive behaviour and has been reported as establishing a significant association [41, 42].

Marital status also emerged as a crucial determinant of uptake with women who are married women demonstrating a greater likelihood of contraceptive uptake compared to unmarried counterparts. The significance of this association can be explained as married women having a higher perception of getting pregnant and thereby using contraceptives for spacing and limiting. However, some studies observed no association between marital status and MC use. The educational level was equally found to be associated with the uptake of contraception in all the reviewed studies. Women with no formal education had a low uptake rate while the prevalence rate increased with the education level. The respondents with tertiary or postgraduate education were found to utilise family planning services more. These findings show similarity to the reports by [43] and show the importance of empowering the girl child through education according to a study in Ethiopia [44]. This will enhance the health and well-being of the woman, family and even the community at large [45].

Culture has been identified as a significant hindrance to adopting family planning services. This can be related to the inclination of most women to have more children which was evidenced across all the studies as a reason for the non-use of contraceptives. In African societies, women are expected to procreate and expand family size as having many children is viewed as showcasing the strength of a woman [11]. Furthermore, cultural beliefs in Nigeria often advocate abstinence for unmarried women, discouraging them from seeking contraception due to this cultural bias even though they are sexually active fuelling high teenage pregnancy rates and unsafe abortion. Some studies found that Yoruba women are more likely to use contraceptives than their Ibo and Hausa counterparts showcasing regional variations. The northern region is mainly occupied by the Hausas and similar studies done in Nigeria have reported low mCPR in these areas [35, 38, 46, 47]. Regarding religious beliefs, Christians especially the protestants have a higher chance of using family planning services as there are no restrictions based on their faith while some Muslims are against contraception and traditional worshippers prefer using traditional methods. This validates earlier observations of religion and its correlation with modern contraceptives in a contextual study [35].

Economic and social status also emerged as a factor that is associated with the use of contraception. Most of the studies found that civil servants, health workers and women who had high sources of income showed a correlation with higher rates of MC use [23–25, 29]. A systematic review of sub-Saharan Africa [48] has shown that women residing in urban areas with moderate literacy levels and socioeconomic status had a higher probability of using modern contraceptives confirming this observation.

Male partner approval was highlighted in all ten studies and noted that women who had discussions about contraception with their partner and gained approval were more likely to use contraception. The educational and social status of the husband was noted to influence the husband's or male partner's approval, concurring with the reports from a study done in Nigeria that literate men are more likely to engage in discussions around contraception as they are key decision-makers in health matters in the family [8]. This emphasises the need to also address male literacy alongside female education to enhance family planning outcomes. Alternatively, spousal disapproval is a major deterrent to uptake. Nigeria is a patriarchal society, and male dominance has always been evident in the decisions made in families and could be the reason this emerged as an important factor.

Several other reasons and factors also emerged as barriers associated with the use of modern contraceptives in the review. The major ones are the desire for more children, side effects and spousal disapproval. The African society including Nigeria believe in having a large family size with many children. Polygamy is also a common occurrence, and a study [49] found that these kinds of household structures do not support women using contraceptives due to the competition among them to have more children for their husbands.

Contraception offers significant benefits, including the prevention of unplanned pregnancies and maternal deaths associated with pregnancy complications [50]. Teenage and unwanted pregnancies, which often lead to unsafe abortions, also strain families, increase healthcare costs, and hinder public health and socio-economic development, particularly in Nigeria [51].

This review has identified the need for greater efforts at all levels of health and multisectoral collaboration to educate women on contraception and its benefits. Public health researchers and program planners should develop platforms and campaigns that engage both males and females, emphasising the importance of collective action in family planning [24, 52]. Health promotion, using behaviour change concepts and community development strategies, can enhance modern contraceptive use among Nigerian women. For instance, applying the health belief model can reinforce importance of reproductive health by addressing perceived benefits and barriers, and encouraging positive contraceptive behaviours.

Furthermore, some studies have advocated for increased government intervention at local and regional levels to improve accessibility, as well as involving community and religious leaders to boost family planning uptake [13, 53].

5 Conclusion

The research showed a great amount of knowledge of modern contraceptive methods among women but did not translate to uses as the prevalence rate was below average in more than 70% of the reviewed articles. The systematic review highlighted the complex interplay of socio-demographic, cultural, economic, and healthcare-related factors influencing contraceptive use among Nigerian women. The findings emphasize the importance of education, male involvement, and healthcare accessibility in addressing barriers to modern contraceptive uptake. Regional and cultural variations further underscore the need for tailored interventions that respect local contexts. Future research should explore these variations more deeply, comparing northern and southern Nigeria to identify specific socio-cultural drivers of contraceptive behaviour. Studies focusing on male perceptions of family planning and the impact of gender-inclusive programs could provide valuable insights. By addressing these multifaceted challenges through comprehensive policies, community engagement, and international collaboration, Nigeria can improve reproductive health outcomes and move closer to achieving global health and gender equality targets.

Author contributions Natalie Quinn-Walker reviewed and contributed to each chapter of the research process i.e. the introduction, literature review, methodology, and results and also reviewed the manuscript.

Data availability No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate Not applicable.

Competing interests The authors declare no competing interests.

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