

Original Article

Awareness and acceptance of postpartum contraceptives among recently delivered women in a tertiary facility in North Central

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Abstract

Background: Postpartum contraception is essential for ensuring appropriate pregnancy spacing and avoiding unintended pregnancies. Poor awareness and fear of side effects may contribute to low contraceptive acceptance in the postpartum period. Tertiary healthcare facilities are positioned to provide effective counselling to improve uptake of postpartum contraceptives. **Objectives:** To assess the level of awareness and identify determinants influencing the willingness to accept postpartum contraceptives among recently delivered women. **Methodology:** A descriptive cross-sectional study was carried out at the postnatal wards of the University of Ilorin Teaching Hospital (UIITH), Ilorin, from 4th of August to 29th of October 2022. Participants were consenting postpartum women who delivered at the facility during the study period and met the inclusion criteria. Structured questionnaires were administered to participants after they had provided informed consent. The questionnaire had sections on participants' socio-demographic characteristics, knowledge of, and acceptance of postpartum contraceptive and determinants of willingness to accept postpartum contraception. Data obtained from the questionnaire were analysed using the Statistical Package for Social Sciences (IBM SPSS version 22.0). Findings were presented in frequency tables and charts; a value of $P < 0.05$ was considered statistically significant. **Results:** There was a total of 603 deliveries during the study period. However, 420 women were eligible to participate, and 303 consented to participate. A total of 73.6% (223/303) of the participants were aware of postpartum contraceptives, and 59.7% (181/303) were willing to accept a method of postpartum contraception. Levels of education, parity, age, and social classes were determinants of willingness to accept postpartum contraception. The most preferred method was implants (38.6%), and the least preferred method was sterilization (1.3%). **Conclusion:** The level of awareness of postpartum contraceptives and willingness to accept them, among postpartum women in this study, was relatively high. The Willingness to accept a method was influenced by educational level, parity, age, and social class.

Keywords: Awareness, Contraception, Postpartum, Uptake.

Introduction

Contraception is a fundamental component of maternal and newborn health and remains an important issue worldwide, particularly in Sub-Saharan Africa¹. Utilization of contraception enables women to prevent unintended pregnancies and their attendant complications. The total world population is above 7.6 billion, with a growth rate of about 85 million per year¹, while Nigeria has a population of over 200 million people, with an annual population

growth rate of 2.58%^{1,2}. As such, it is imperative to put in place population control measures to avoid overstretching the fragile health care delivery systems in the country, improve economic growth (reduce poverty), and better social services.

The postpartum period is of special concern because women are vulnerable to unintended pregnancies during this period^{3,4}. Studies have reported

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postpartum pregnancy rates ranging from 8-45% within the first postpartum year, depending on the population⁵. Ovulation has been reported as early as 3-4 weeks postpartum in non-breastfeeding mothers⁵, and up to 50% of women are reported to have resumed sexual activity by 6 weeks postpartum⁶. Postpartum utilization of contraceptives has the potential to avert more than 30% of maternal deaths and more than 10% of child mortality, and as such is essential for improved maternal and child health⁷. The postpartum period offers a unique opportunity to initiate a contraceptive method, as women may be more receptive to contraception to avoid pregnancy^{7,8}. Ovulation can occur as early as 25 days postpartum among non-breastfeeding women⁵, underscoring the importance of initiating contraception in the early postpartum period⁷. Several factors may, however, limit contraceptive uptake during this period, including inadequate awareness, misconceptions about side effects, and lack of partner support, among others. These factors may contribute to low utilization rates, thereby increasing the risk of unintended pregnancies and their associated adverse maternal and neonatal health.

There are various methods of postpartum contraceptives, including the traditional methods, the barrier, oral contraceptive pills, injectables, implants, intrauterine devices, and tubal ligation^{8,9}.

Increasing access to contraception in the postpartum period helps prevent unintended pregnancy and allows couples to plan and space future pregnancies¹⁰. A study showed that 1 in 13 women presenting for abortion or childbirth in a UK health board had conceived within a year of a previous childbirth¹¹. These women were likely to have missed the opportunity to discuss and take up contraception during the postpartum period. While most of the previous studies reported high awareness of postpartum contraceptives, there are conflicting reports on the determinants of awareness and acceptance. Some of the studies found no positive association between age, education level, parity, and acceptance of postpartum contraception¹¹⁻¹⁴. However, other studies have shown a strong negative impact of religion, particularly Islam and Catholicism, on contraceptive acceptance, with a positive association between social class, mode of delivery, and acceptance of postpartum contraception. The reasons alluded to the conflicting findings include socio-demographic differences, because none of these studies were carried out in North-Central Nigeria, which shares its own socio-cultural peculiarity, there

is a need to carry-out similar study in this geopolitical zone to test the validity of previous studies or otherwise.

This study thus seeks to assess the awareness of and identify the determinants influencing willingness to accept postpartum contraceptives among recently delivered women at the University of Ilorin Teaching Hospital, Ilorin, North Central Nigeria.

Materials and method

Study area: This study was conducted at the postnatal ward of the University of Ilorin Teaching Hospital, Kwara State, North-Central Nigeria, from 4th of August to 29th of October 2022.

Study design: It was a descriptive cross-sectional study

Participants recruitment: A total of 303 consenting women who had undergone either vaginal or Caesarean delivery within the preceding 72 hours were recruited for the study. The minimum required sample size of 303 was determined using Fisher's formula. Eligible postpartum women who met the inclusion criteria (patients who are physically and clinically stable, who had uncomplicated vaginal or abdominal delivery). Women who experienced intrapartum or postpartum complications following delivery were excluded from the study.

Data collection was carried out using a structured questionnaire administered by 2 trained research fellows who had undergone prior training on the study instruments. The questionnaire consisted of two sections: Section A captured participants' socio-demographic characteristics, knowledge, and acceptance of postpartum contraception as well as the factors associated with its acceptance, while Section B contained questions relating to participants' socioeconomic status.

Ethical consideration

Ethical approval was obtained from the Research Ethics Committee of the University of Ilorin Teaching Hospital, with approval no: ERC PAN/2022/10/0329.

Statistical analysis

The data obtained from the questionnaire were analyzed using the Statistical Package for Social Sciences (IBM SPSS version 22.0). Findings were presented in frequency tables and charts. Categorical variables were compared using Pearson's chi-square test or Fisher's exact test as appropriate. The value of $P < 0.05$ was considered statistically significant.

Results

During the period of the study, 603 women delivered at the facility. Of these, 402 were screened, 333 met the inclusion criteria and were recruited, and 303 had

fully completed questionnaires, made 91% response rate, and formed the basis of the analysis. Overall, 73.6% (223/303) of participants were aware of postpartum contraceptives, and 59.7% (181/303) expressed willingness to accept a method. Willingness to accept a method was influenced by educational level, parity, age, and social class. The most preferred contraceptive methods were implants (38.6%) and male condoms (22.8%), while sterilization (1.3%) was the least preferred method.

The respondents had a mean age of 31.6 ± 13.6 years. The majority were in monogamous marriages (91.1%, 270/303), of Yoruba ethnicity (68.3%, 207/303), and predominantly Muslim (68.3%, 207/303). Most participants were employed (60.4%, 183/303), and belonged to the middle socio-economic class (64%, 194/303). All participants had received formal education, with 71.0% (182/303) attaining tertiary education (Table 1).

Table 1: Socio-demographic characteristics of the respondents

Variables	Frequency	Percentage (%)	Cumulative frequency
Age			
20 – 24	40	13.2	40
25 – 29	92	30.4	132
30 – 34	75	24.7	207
35 – 39	52	17.1	259
40 – 44	35	11.6	294
45 – 49	9	3.0	303
Ethnic Group			
Yoruba	207	68.3	207
Hausa	27	8.9	234
Nupe	42	13.9	276
Fulani	9	3.0	285
Igbira	18	5.9	303
Religion			
Christianity	96	31.7	96
Islam	207	68.3	303
Family Setting			
Monogamy	276	91.1	276
Polygamy	27	8.7	303
Occupation			
Unemployed	120	39.9	120
Office work	104	34.3	224
Tailor/Dresser	9	3.0	233
Trader/Business	70	23.1	303
Respondents' formal education			
Primary	9	3.0	9
Secondary	79	26.1	88
Tertiary	215	71.0	303
Partner's level of formal education			
None	9	3.0	9
Secondary	112	36.9	27
Tertiary	182	60.1	303
Social Class			
Upper class	25	8.3	25
Middle Class	193	63.7	218
Lower Class	85	28.0	303

Most respondents (73.6%, 223/303) had heard about postpartum contraception through various sources, including antenatal/postnatal clinic services 36.8%, health talks at various fora 34.0% (103/303), and electronic/print media 20% (113/303). Just over half (59%, 181/303) expressed willingness to accept postpartum contraception, while fewer than a quarter (17.2%, 52/303) were unwilling to do so (Table 2). Reasons for acceptance included child spacing (35.0%, 63/181), family benefit (28.2%, 51/181), full recovery of the mother (22.1%, 40/181), and economic considerations (5%, 9/181). The main reasons for rejection were inadequate awareness (76.9%, 40/52) and fear of side effects (23.1%, 12/52). (Table 3).

Table 2: Participants' Awareness and Acceptance of postpartum contraceptive

Variables	Respondents <i>n</i> (%)	Cumulative <i>Frequency</i>	Total <i>n</i> (%)
Awareness of contraceptives			
Yes	249 (79.9)	249	303 (100)
No	61 (20.1)	303	
Awareness of postpartum contraceptives			
Yes	223 (73.6)	223	303 (100)
No	80 (26.4)	80	
Source of Information			
AN Clinic	52 (17)	52	303 (100)
Media	61 (20.9)	113	
Postnatal clinic	60 (19.8)	173	
Health talk	103(34.0)	276	
Others	18 (5.9)	303	
Readiness to accept postpartum contraceptive			
Yes	181 (59.7)	181	303 (100)
No	52 (17.2)	231	
Undecided	70 (23.1)	303	

The highest proportion (29.8%, 54/181) of respondents willing to accept postpartum contraceptives were within the 25–29-year age group, with the most cited reasons being child spacing

(48.1%, 26/181) and perceived family benefit (27.8%, 15/181). In contrast, older women aged 40–44 years demonstrated lower willingness to accept postpartum contraceptives. Most participants (71%, 215/303) had attained tertiary education, and this group also exhibited the highest acceptance rate for postpartum contraceptives (65.7%, 119/181). Conversely, respondents with the lowest level of education recorded the highest rejection rate at 76.9% (40/52) (Table 3).

Table 3: Reasons for previous use/non-use of Postpartum Contraceptives

Variables	Respondents <i>n</i> (%)	Cumulative <i>Frequency</i>	Total <i>n</i> (%)
Reasons for uptake			
Child spacing	63 (34.8)	63	181 (100)
Economic reason	9 (4.9)	72	
Family Benefit	51 (28.2)	123	
Full recovery of the mother	40 (22.1)	163	
Optimal child growth and care	18 (9.9)	181	
Reasons for non-use			
Fear of side effects	12 (14.8)	12	52 (100)
Lack of awareness	40 (85.2)	52	

Respondents from the middle socio-economic class demonstrated the highest willingness to accept tubal ligation, with 79.3%, 144/181 in favor. Those in the lower socio-economic class accounted for the majority (69.2%, 36/52) of participants who rejected contraceptives, while rejection was least common among upper-class respondents, at just 1.9% (1/52)..Multi- parous women (Para 3-4) constituted the largest group (54.1%, 98/181) that accepted postpartum contraceptives. The main reasons for acceptance included full maternal recovery (36.7%, 36/181), optimal child growth (28.8%, 32/181), and child spacing (23.5%, 23/181). In contrast, grand-multiparous women had the lowest acceptance rate at 11.6% (21/181). Interestingly, despite having the

highest acceptance rate, para 3 – 4 women also accounted for the highest proportion of those who rejected postpartum contraception (55.8%, 29/52),

while rejection was lowest among grand multiparous women (9.0%, 5/52).

Table 4: Association between respondents' socio-demographic/obstetrics parameters and acceptance of postpartum contraceptives

		Reason for acceptance of postpartum contraceptive					Total	χ^2	p value
		Child spacing	Economic reason	Family Benefit	Full recovery of the mother	Optimal Child growth and care			
Age	20yrs-24yrs	28 (60.8)	0 (0.0)	12 (26.1)	4 (8.6)	2 (4.4)	46 (25.4)	49.330	0.001
	25yrs-29yrs	26 (48.1)	3 (5.6)	15 (27.8)	7 (12.9)	3 (5.5)	54 (29.8)		
	30-34yrs	7 (13.7)	2 (3.9)	17 (33.3)	18 (35.3)	7 (13.7)	51 (28.2)		
	35yrs-39yrs	2 (8.0)	4 (16.0)	5 (20.0)	9 (36.0)	5 (20.0)	25 (13.8)		
	40-44yrs	0(0.0)	0 (0.0)	2 (40.0)	2 (40.0)	1 (10.0)	5 (2.8)		
	Total	63 (34.8)	9 (4.9)	51(28.2)	40 (22.1)	18 (9.9)	181 (100)		
Level of formal edu.	Primary	2 (33.3)	0 (0.0)	1 (16.7)	2 (33.3)	1 (16.7)	6 (3.3)	3.887	0.867
	Secondary	19 (33.9)	2 (3.6)	18 (32.1)	11 (19.6)	6 (10.7)	56 (30.9)		
	Tertiary	42 (35.3)	7 (5.9)	32(21.1)	27 (25.0)	11 (0.0)	119 (65.7)		
	Total	63 (34.8)	9 (4.9)	51 (28.2)	40 (22.1)	18 (9.9)	181 (100)		
Social class	Upper class	6 (26.1)	4 (17.4)	8 (34.8)	3 (13.0)	2 (8.7)	23 (12.7)	34.089	0.001
	Middle class	56 (37.5)	5 (3.5)	39 (27.1)	35 (24.3)	9 (6.3)	144 (79.3)		
	Lower class	1 (7.1)	0(0.0)	4 (28.6)	2 (0.0)	7 (4.0)	14 (8.0)		
	Total	63 (34.8)	9 (4.9)	51 (28.2)	40 (22.1)	18 (9.9)	181 (100)		
Parity	Para 1-2	38(61.3)	5 (8.1)	10 (16.1)	6 (9.7)	4 (6.5)	62 (34.3)	3.739	0.341
	Para 3-4	23 (23.5)	2 (2.0)	36 (36.7)	28 (28.6)	9 (9.2)	98 (54.1)		
	Para 5 and above	2 (9.5)	2 (9.5)	5 (23.8)	6 (28.6)	6 (28.6)	21 (11.6)		
	Total	63 (34.8)	9 (4.9)	51 (28.2)	40 (22.1)	18 (9.9)	181 (100)		
Mode of delivery	Caesarian section	12 (23.1)	1 (1.9)	15 (28.8)	24 (46.2)	0 (0.0)	52 (29.0)	6.793	0.121
	Vaginal	51 (39.5)	8(6.2)	36 (27.9)	16 (12.4)	18 (13.9)	129 (71.0)		
	Total	63 (34.8)	9 (4.9)	51 (28.2)	40 (22.1)	18 (9.9)	181 (100)		

χ^2 : Chi-square.

Among respondents who accepted postpartum contraceptives, the majority (71.0%, 129/181) had undergone vaginal delivery in their most recent pregnancy, with child spacing cited as the primary reason for acceptance (39.5%, 51/181). In contrast, those who had a Caesarean section in their most recent pregnancy constituted 29.0% (52/181) of the acceptors, with maternal recovery being the main reason for its acceptance (46.2%, 24/181). (Figure 1). In

addition, rejection of postpartum contraceptive was highest among respondents with vaginal delivery in their last pregnancy, comprising 79.5% (39/52) of those who rejected. The leading reason cited was inadequate awareness.

Most of the sociodemographic and obstetrics parameters of the study did not show a statistically significant association with willingness to accept or reject postpartum contraceptives. However, age ($p = 0.001$) and social class ($p = 0.001$) showed statistically significant association

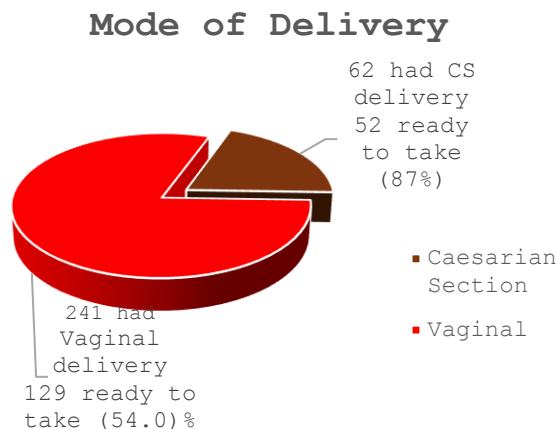


Figure 1: Respondents' mode of delivery and readiness to take contraceptives

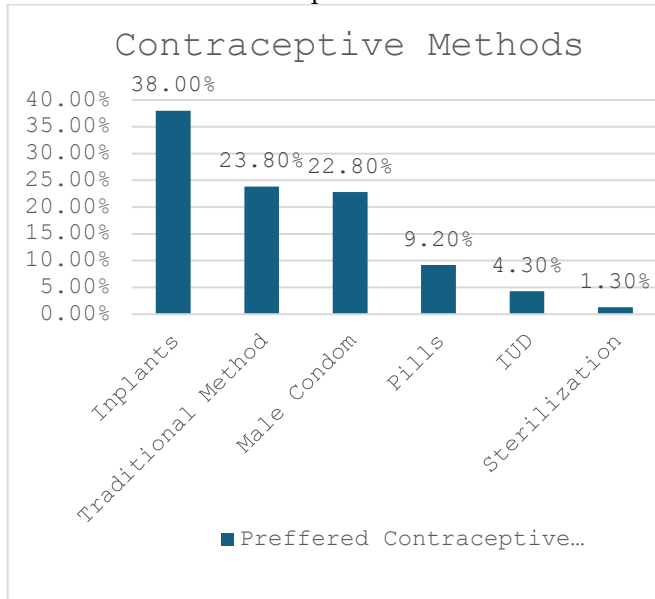


Figure 2: Preferred methods of contraceptives.

**Note:* Traditional Methods refer to *withdrawal, lactational amenorrhea, and rhythm*

Discussion

This study revealed that 73.6% (223/303) of participants were aware of postpartum contraceptives, and 59.7% (181/303) were willing to accept a method. Willingness to accept a method was influenced by educational level, parity, age, and social class. The most preferred contraceptive methods were implants (38.6%) and male condoms (22.8%), while

sterilization (1.3%) was the least preferred method.

The mean age of participants was 31.6 ± 13.6 years, with the majority falling within the reproductive age group. Almost all respondents were married, with most of them in monogamous unions. The majority were of Yoruba ethnicity and practiced Islam, reflecting the demographic profile of the host community. A significant proportion had attained tertiary education (71.0%, 215/303). However, this may not be a true reflection of the actual literacy level among postpartum women in Nigeria. The high literacy level observed in this study could be attributed to the urban setting of the study site, which tends to attract more enlightened and educated women.

Overall, this study found no significant association between age, education level, parity, and acceptance of postpartum contraception, consistent with the findings of Singh *et al*¹¹, Olamijulo *et al*¹², Oye-Adeniran *et al*¹³, and Solanke *et al*¹⁴. Although some previous studies have reported a strong negative influence of religion, particularly Islam and Catholicism, on contraceptive use, this study did not observe a significant difference in contraceptive uptake rate between Christian and Muslim respondents. The relatively high acceptance among both religious groups may be attributed to the high level of education among participants, which could have contributed to more informed decision-making regarding postpartum contraception.

A positive association was observed between social class, mode of delivery and awareness/acceptance of postpartum contraception, with most participants from lower-class declined acceptance of contraceptives, while 87% of women who delivered via caesarean section accepted postpartum contraception, this aligns with the findings reported by Mahmood *et al*¹⁵. Previous studies have also demonstrated a relationship between income and contraceptives use, with a lower income being associated with reduced or non-use of contraceptive.^{16,17} The above could be explained by the level of exposure and informed knowledge of contraceptives benefit enjoyed by upper-class category participants, as well as lesser societal pressure for childbearing on this group of people, while continuing emphasis on the need for interpregnancy interval to women who delivered per

abdominal may further encourage this category of women, as shown by the study.

This study showed a high level of awareness (73.6%, $n=223$) of postpartum contraception, with 59.7% (181) of respondents willing to accept it. These findings align with those of Adinma *et al.*¹⁸, who reported a 76% awareness level and a 55.0% acceptance rate, as well as Oye-Adeniran *et al.*¹³, where 69.7% of respondents were aware of postpartum contraception. The acceptance rate in this study is, however, higher than that reported by Eluwa *et al.*¹⁰, where 41% of participants accepted postpartum contraceptives, but lower than the findings of Omolase *et al.*¹⁹, where 89% of respondents are aware of contraception. These variations observed from various studies demonstrate that awareness does not always translate to practice. Despite the high level of awareness, the prevalence of postpartum contraceptives remains low for most African countries, ranging from 3.9% -59.7%, with Nigeria having a < 27% usage rate². This gap between awareness and uptake underscores the importance of translating knowledge into access and use of postpartum contraception. Improved knowledge through effective health education by qualified health and non-health personnel to reproductive age women, particularly during the antenatal and postpartum period, could play a vital role in improving postpartum contraceptive uptake.

The most common source of information about postpartum contraception observed in this study was mass media (54.9%, 164/249), which is consistent with findings from Ikechebelu *et al.*²⁰, Hayat *et al.*²¹ and Adinma *et al.*¹⁸. However, it is at variance with findings by Omolase *et al.*¹⁹ who reported health workers as the most common (44%) source of information. The need for improved role of health practitioners in creating awareness and knowledge about postpartum contraceptives cannot be overemphasized, as only 36.8% ($n=112$) received information about postpartum contraception from health professionals, including doctors, nurses, or antenatal or postnatal clinics. Furthermore, only 17.2% of respondents reported being counselled on postpartum contraception by health professionals in the index pregnancy. These findings underscore the need for improved involvement of health professionals in the provision of effective and high-quality contraceptive counselling during the antenatal and postpartum period. Strengthening the role of healthcare workers in education and advocacy could improve both awareness and uptake of postpartum contraception, contributing to improved maternal and

child health.

The reason for non-acceptance of postpartum contraceptive in this study was lack of awareness 85.2% and fear of side effect 14.8%, similar reasons were cited in the studies by Mahmood *et al.*¹⁵ and Agarwal²². Contraceptive acceptance was higher among middle and upper social class respondents as well as tertiary education holders, and the reasons given for acceptance were child spacing 34.8%, family benefit 28.2%, full recovery for mother 22.1%, optimal child growth 9.9%, and economic reason 4.9%. No previous study was found that addresses the reasons for acceptance of postpartum contraceptives.

The preferred methods of contraceptives observed in this study were implants (38.6%), male condom (22.8%), and traditional methods (23.8%), while less desired methods were pills (9.2%), IUD (4.3%), and sterilization (1.3%). This aligns with findings by Olamijulo *et al.*¹², where IUD (9%), Male Condom (28%) and Pills (12%) and Rita *et al.*²³, and Tekelab *et al.*²⁴, where implant (32.2%), Male condom (22.9%), Pills (4.2%), IUD (1%) and Injectable (32%) were reported. This is, however, at variance with findings from a study conducted in north-western Nigeria¹⁶, where most preferred methods were injectable and IUD, with a lower preference for implants. The similarity of findings from this study and those of Olamijulo *et al.* and Rita *et al.* may be attributed to the geopolitical zone, availability of experts, and type of health facilities where implant service and other methods can be accessed.

Conclusion

The level of awareness of postpartum contraceptives, and willingness to accept them, among postpartum women in this study was relatively high, although the use of modern contraceptives uses including postpartum contraceptive in Kwara state was reported to be 17% by the NDHS. The gap between awareness and willingness to accept postpartum contraception may be attributed to several factors, including inadequate counselling by healthcare providers, fear of potential side effects, cultural beliefs, and misconceptions about contraception. These findings underscore the need to enhance access to high-quality contraceptive counselling, strengthen the capacity of healthcare providers on contraceptive practices, and integrate comprehensive contraception counselling into routine antenatal and postnatal care. Addressing these barriers is essential for improving contraceptive uptake and reducing the incidence of unplanned and unwanted pregnancies and their attendant complications.

Strengths and limitations

This study addresses a critical issue in maternal health in Nigeria, where maternal mortality is high, contraceptive uptake is low, and many women remain at risk of unintended pregnancies soon after childbirth. By focusing on recently delivered women, the study was able to determine their awareness and acceptance of postpartum contraceptives at a time when they are already in contact with the formal health sector. The findings also add to the limited pool of evidence from North-central Nigeria and can help shape strategies to improve postpartum contraceptive uptake.

Some limitations of this study were also observed. Conducting it at a single center introduces the potential for selection bias. In addition, the results may not be generalizable to women at lower-level facilities or women in the community. Studying, being a cross-sectional one, could not explore how awareness translates into actual contraceptive uptake.

Conflict of interest

The authors declare no conflicts of interest.

Contribution

All the authors meet ICMJE criteria for authorship. All authors were involved in the conceptualization of the study. AAS, BOR, and EEG were involved in study supervision. ONI, EGG, and RHO were involved in participant recruitment, data collection, and data entry. ONI and AAS performed the statistical analysis. ONI, BOR, AAS, EGG, and RHO performed the literature review. ONI, EGG, and AAS wrote the original draft. BOR and RHO performed the review and editing. All the authors revised and approved the final version of the manuscript.

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