

ORIGINAL RESEARCH ARTICLE

Factors influencing the use of modern contraceptives amongst postpartum women in a rural tertiary hospital in South-South Nigeria

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Abstract

The postpartum period is a critical time to address the high unmet needs of family planning and reduce the risks associated with closely spaced pregnancies. Unintended pregnancies immediately following childbirth are associated with increased maternal mortality, morbidity, and poor pregnancy outcomes. Adoption of postpartum family planning is a cost-effective way that would reduce maternal and child morbidity and mortality. This study aimed to establish the prevalence, the clients' sociodemographic factors, and health care workers' influences on modern contraceptive uptake amongst postpartum women at Irrua Specialist Teaching Hospital (ISTH), Irrua. This descriptive cross-sectional study was carried out amongst postpartum mothers attending maternal and child health clinics in ISTH, Irrua, Edo State, Nigeria. The selection of participants was by simple random sampling technique. All consented participants selected through simple random sampling were administered questionnaires, and completed ones were coded and analysed while the level of significance was set at 5%. In this study, over 90% of the women were aware of a method of modern contraception. However, this did not translate to increased contraceptive uptake as only 17.8% of the respondents were currently on a method of postpartum contraception. The statistically significant sociodemographic factors influencing the utilization of modern contraceptives by postpartum women, as seen in this study, were: Age ($p < 0.001$), level of education ($p < 0.001$), religion ($p = 0.048$), and parity ($p = 0.010$). The women who have higher educational status, higher parity, and adequate information provided by healthcare providers were more likely to use at least a method of modern contraceptive postpartum. The uptake of modern contraceptives amongst postpartum women was low in this study. Strengthening family planning counseling services during prenatal care and emphasizing the girl child education, provision of adequate information by healthcare providers on the need for postpartum contraception could enhance modern contraceptive use for postpartum women. (*Afr J Reprod Health* 2022; 26[1]: 15-25).

Keywords: Modern contraceptives, postpartum period, rural tertiary hospital, South-South Nigeria

Résumé

La période post-partum est une période critique pour répondre aux besoins élevés non satisfaits en matière de planification familiale et réduire les risques associés aux grossesses rapprochées. Les grossesses non désirées immédiatement après l'accouchement sont associées à une augmentation de la mortalité et de la morbidité maternelles et à de mauvais résultats de grossesse. L'adoption de la planification familiale post-partum est un moyen rentable qui réduirait la morbidité et la mortalité maternelles et infantiles. Cette étude visait à établir la prévalence, les facteurs sociodémographiques des clients et les influences des agents de santé sur l'adoption de contraceptifs modernes chez les femmes en post-partum à l'Irrua Specialist Teaching Hospital (ISTH), Irrua. Cette étude transversale descriptive a été menée auprès de mères en post-partum fréquentant des cliniques de santé maternelle et infantile à l'ISTH, Irrua, État d'Edo, Nigéria. La sélection des participants s'est faite par simple technique d'échantillonnage aléatoire. Tous les participants consentants sélectionnés par échantillonnage aléatoire simple ont reçu des questionnaires, et ceux remplis ont été codés et analysés tandis que le niveau de signification a été fixé à 5%. Dans cette étude, plus de 90% des femmes connaissaient une méthode de contraception moderne. Cependant, cela ne s'est pas traduit par une utilisation accrue de la contraception puisque seulement 17,8 % des répondants utilisaient actuellement une méthode de contraception post-partum. Les facteurs sociodémographiques statistiquement significatifs influençant l'utilisation des contraceptifs modernes par les femmes en post-partum, comme on le voit dans cette étude, étaient : l'âge ($p < 0,001$), le niveau d'éducation ($p < 0,001$), la religion ($p = 0,048$) et la

parité ($p = 0,010$). Les femmes qui ont un niveau d'instruction plus élevé, une parité plus élevée et des informations adéquates fournies par les prestataires de soins de santé étaient plus susceptibles d'utiliser au moins une méthode de contraception moderne après l'accouchement. L'utilisation des contraceptifs modernes chez les femmes en post-partum était faible dans cette étude. Le renforcement des services de conseil en planification familiale pendant les soins prénatals et l'accent mis sur l'éducation des filles, la fourniture d'informations adéquates par les prestataires de soins de santé sur la nécessité d'une contraception post-partum pourraient améliorer l'utilisation des contraceptifs modernes pour les femm. (*Afr J Reprod Health* 2022; 26[1]: 15-25).

Mots-clés: Contraceptifs modernes, période post-partum, hôpital tertiaire rural, sud-sud du Nigeria

Introduction

The WHO defines Post-Partum Family Planning (PPFP) as preventing unintended pregnancy and closely spaced pregnancies through the first 12 months following childbirth¹. Prompt initiation of contraception postpartum increases utilization, continuation and thus reduces the risk of unintended pregnancy. After delivery, the adoption of family planning methods represents one way to address unmet needs in family planning services in many parts of sub-Saharan African countries. In Nigeria and many other developing countries, unprotected intercourse remains the primary cause of unwanted pregnancy, and many women with unwanted pregnancies usually decide to end them by abortion². Considering the consequences of unplanned pregnancy and unsafe abortions, the promotion of family planning in countries with high birth rates, such as Nigeria, has the potential of reducing maternal and perinatal mortality³.

The overall contraceptive prevalence amongst women in Nigeria is 16%, and about 15% have an unmet need for contraception⁴. The promotion of family planning as part of a comprehensive public health approach complemented by economic development may reduce the number of people living in poverty, reduce maternal and child mortality figures, create women's empowerment, and better environmental sustainability. The postpartum period is an appropriate time to prevent missed opportunities for contraceptive uptake. Postpartum modern contraceptive use is when a postpartum woman uses any modern contraception methods such as the pill, IUD, injectable, condom (male or female), sterilization (male or female), and implants commencing during the 12 months of her most recent childbirth. It is evident from the literature that multiple factors influence contraceptive methods utilization during the postpartum period⁵. These factors may be personal, relationship, reproductive, and health system factors such as

exposure to contraceptive messages during maternal and child health (MCH) care⁴. Other factors could include fear of side effects, misinformation, limited choices of methods, provider factors, and women's status. According to an analysis of demographic and health surveys data from 27 countries, 95% of women within 0–12 months postpartum want to avoid a pregnancy in the next 24 months; but 70% do not use contraception⁶.

In a study that attempted to determine the prevalence and determinants of contraceptive methods amongst rural women in Osun State Nigeria, the most significant sociodemographic determinants of contraceptives were religion and family setting⁷. Similarly, in an India study, individual beliefs held by men and women about their religion and what they prescribe or proscribe concerning contraceptive use ultimately affects their contraceptive use⁸. Analysis of Ethiopian demographic health survey in 2014 showed that; being wealthy, more educated, employed, having a higher number of living children, being in a monogamous relationship, attending community conversation, being visited by health workers at home predicted use of modern contraception. Conversely, living in the rural areas, older age, being in a polygamous relationship and witnessing one's own child's death negatively influenced modern contraceptive use⁹. These findings were similar to those identified in the Nigeria NDHS 2013 as factors influencing family planning uptake in the general population¹⁰. Skills and attitudes of healthcare providers could be barriers or facilitators of contraceptive uptake. Healthcare providers play a critical role in the quality of services offered to postpartum women¹¹.

Recent estimates from 21 developing countries, including Nigeria, indicated that only 31% of women use an FP method within the first 2 years of delivery¹². Despite many studies undertaken on family planning, the unmet need for family planning amongst postpartum women

remains high. We do not know why there is a low uptake of modern contraceptive methods despite multiple contacts with healthcare providers in health facilities. Therefore, this study highlights factors that influence uptake of contraceptives amongst postpartum women in a sub-urban tertiary hospital in Nigeria. Also, it is to help recommend interventions to increase contraceptive utilization amongst women during their postpartum period. It also aimed at identifying healthcare providers' factors at the facility level that determine postpartum contraceptive use. This will go a long way in informing policy and current practices and improving the health of women.

Methods

Sample size determination

The minimum sample size for this study was determined using the formula for cross-sectional studies¹³. Given as $n = \frac{z^2 pq}{d^2}$. Where: n is the desired sample size; z is the normal standard deviation at the required confidence interval set at 95 % (1.96), and p is the estimated proportion of the target population with the characteristics being measured. The contraceptive prevalence rate of 16 % (NDHS 2013) was used; q (Proportion of target population who do not have the characteristics being measured) = 1-p; and d is the level of precision set at 5% (0.05).

By substituting, $n = \frac{1.96^2 * 0.16 * (1-0.16)}{(0.05)^2} = 207$ postpartum women.

We assumed a response rate of 90% (non-response rate of 10% of 207). The minimum required sample size was given as $n = \frac{n}{1-NR}$ ¹⁴. Where NR = Non-response Rate, the minimum required sample size will be given as $= \frac{207}{1-0.1} = 230$. Therefore, 230 women were recruited for this study.

Study design

This descriptive cross-sectional study was carried out amongst 230 consenting women attending maternal and child health clinics who are at least 12 months since their last childbirth, presenting for their postnatal check-ups, child immunization, or personal complaints at ISTH between September 2019 and February 2020. The participants were

selected using a simple random sampling technique upon respondents' arrival at the MCH complex of Irrua Specialist Teaching Hospital (ISTH), Irrua, Edo State, South-South, Nigeria. Eligible and consenting participants were informed of the research. A bag containing tallies with equal numbers of 'YES' or 'NO' labels written on them was given to them to pick from. Those who selected 'YES' were administered with written informed consent and a questionnaire in a designated dedicated consulting room. Women who were pregnant during this postpartum period were excluded from the study.

Study setting and site

The study site is the maternal and child health (MCH) complex of ISTH. The hospital is one of the Federal Tertiary Care Hospitals in Edo State. It serves as a referral center for the adjoining states, communities in the South-South region of Nigeria. The Obstetrics and Gynaecology department holds her antenatal clinics three times a week and booking clinic once a week; immunization clinics hold every Friday of the week at the MCH Complex¹⁵.

Data analysis

All returned questionnaires were checked for completeness and consistency of responses manually. The collected data were coded and analysed using SPSS version 24. Continuous variables were summarised using mean and standard deviation, while categorical variables were summarised using proportions and presented in tables and graphs. Chi-square test was used to test associations between categorical variables, level of significance was set at five percent.

Results

The results obtained from the study were summarised as presented below. The mean age of the respondents was 25.2 (\pm 9.0) years. Ninety-three (40.4%) of the respondents were within the age group of 25-29. The majority [212 (92.2%)] of the respondents were married. Concerning completed education level, 19.2% had a tertiary level of education, 25.7% completed secondary school, 10.0% were primary school dropouts, and 19.1% had no formal education. However, 12.6% of

Table 1: Socio-demographic characteristics of the respondents

Variable	Frequency (N=230)	Percent (100%)
Age group (years)		
≤19	11	4.8
20-24	57	24.8
25-29	93	40.4
30-34	38	16.5
35-39	22	9.6
>40	9	3.9
Mean ±SD = 25.2± 9.0		
Marital Status		
Married	212	92.2
Co-habiting	3	1.3
Separated	2	0.9
Divorced	4	1.7
Widowed	6	2.6
Single	3	1.3
Highest Level of Education Attained		
No formal education	67	29.1
Primary	60	26.1
Secondary	62	27.0
Tertiary	41	17.8
Occupational Status		
Professionals	52	22.6
Technicians and associate professionals	46	20.0
Clerical support workers	18	7.8
Craft and Related Trades Workers	85	37.0
Elementary occupation	21	9.1
Unemployed	8	3.5
Religion		
Catholic	72	31.3
Protestant	115	50.0
Muslim	31	13.5
Seventh Day Adventist	12	5.2

the respondents had postgraduate education, respectively. The majority [89(38.7%)] of the participants were self-employed, while 66(28.7%) of the woman were government employees. Furthermore, one-half (50%) of the respondents reported attending Protestant churches while 22(31.3%) women were Catholics. Also, 31(13.5%) of the respondents were Muslims.

Concerning awareness amongst the participants on the various modern contraceptive methods, they were all aware of a minimum of one method. Most of the respondents representing 93% and 88.0%, were aware of the male condom and oral pills as forms of modern contraceptive methods, respectively. However, only 13% and 20% of the respondents knew male and female

sterilization as modern contraceptive methods, respectively.

More than three-fourth, [189 (82.17%)] of the respondents reported not using any form of the modern contraceptive method since childbirth, and only 41(17.83%), of the respondents, had used a method since childbirth. About two-fifth (39.0%) of the respondents reported commencing modern contraceptives 6 – 9 months post-delivery, while 29.3% and 19.5% reported starting at 3 – 6 months and 0 – 3 months, respectively. However, 7.32% could not recall the date they commenced. Subdermal implant accounted for the highest use, 41.5%, followed by IUCD 22.0% of responders. None of them was found using either male sterilization or female condoms as a form of contraception.

Concerning the level of education, respondents with a higher level of education (who completed tertiary and postgraduate education 28(68.3%) reported higher use of FP, and this relationship was found to be statistically significant (<0.001). There was also a statistically significant relationship between age and use of modern contractive methods, with respondents at extremes of reproductive age seeming to use them more. The parity (number of children) a woman already had was statistically significant with the use of modern contractive methods. It was found to be slightly higher amongst those with 1-2 children. There was no significant relationship between employment status or mode worship and family planning (FP) utilization.

Provision of information on the modern contraceptive method by the HCW was statistically significantly associated with utilization. Those who had such information from their HCWs seem to use the method more. Though having the HCWs attempting to help respondents select methods and explaining possible side effects was higher with utilization, this was found not statistically significant.

Discussion

The utilization of effective postpartum contraception reduces the risk and consequences of unplanned pregnancies with the potential to improve maternal and child welfare.¹⁶ Longer birth intervals reduce women's risks of death and ill health during pregnancy and childbirth. This study

Table 2: Respondents' awareness of modern contraceptives methods

Variable (N=230)	Aware of Family Planning Methods		Not Aware of Family Planning Methods	
	Frequency	Percent (%)	Frequency	Percent (%)
Method				
Oral pills	202	88.0	28	12.0
Female condom	53	23.0	177	77.0
Male condom	214	93.0	16	7.0
IUCD	149	65.0	81	35.0
Implant	55	24.0	175	76.0
Injectable	12	56.0	101	44.0
Female Sterilization	46	20.0	184	81.0
Male Sterilization	30	13.0	200	87.0
Natural methods*	77	33.3	153	66.7
Lactational amenorrhea method (LAM)	150	65.0	80	45.0

*Natural family planning method in this study referred to women who practiced periodic abstinence when they suspected ovulating or coitus interruptus by their husbands.

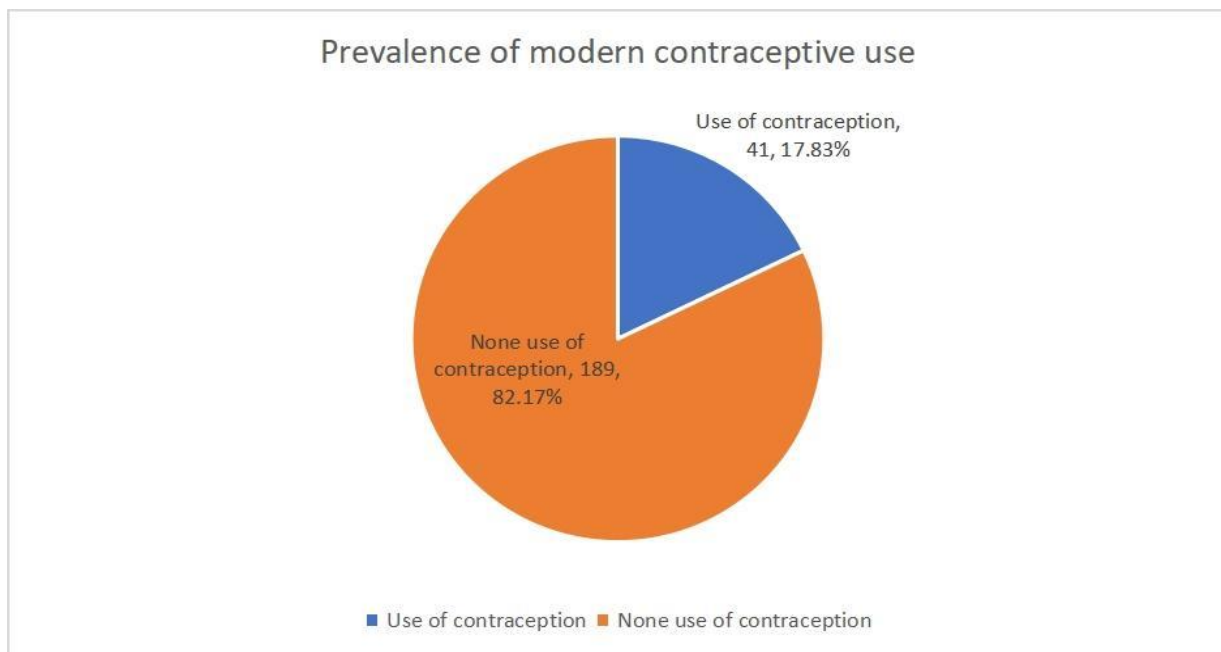


Figure 1: Prevalence of modern contraceptive use within first year post-delivery

Table 3: Respondents' time of commencing modern contraceptive method after delivery

Variables (months)	Frequency (n = 41)	Percent (%)
0-3	8	19.51
3-6	12	29.27
6-9	16	39.02
9-12	2	4.88
Do not know	3	7.32
Total	41	100

revealed that less than one-fourth of the respondents were currently on a contraceptive method. However, it was revealed that the study population had much information about the contraceptive method

Table 4: Respondents' use of a specific type of modern contraceptive methods

Variables	Frequency (n=41)	Percentage (%)
Oral pills	5	12.19
Male condom	4	9.76
IUCD	8	19.51
Subdermal Implant	17	41.46
Injectable	4	9.76
Female Sterilization	3	7.32
Total	41	100

as almost all the respondents were aware of at least a method of modern contraction. This high level of

Table 5: Relationship between utilisation of postpartum contraceptive and sociodemographic factors of the respondents

Variables	Use of contraceptives		Test (χ^2)	p-value
	No	Yes		
Age group				
≤19	4(36.4%)	7(63.6%)	38.600	<0.001*
20-24	49 (86.0%)	8(14.0%)		
25-29	86(92.5%)	7(7.5%)		
30-34	29(76.3%)	9(23.7%)		
35-39	18(81.8%)	4(18.2%)		
>40	3(33.3%)	6(66.7%)		
Highest Level of Education Attained				
No formal education	61(91.0%)	6(9.0)	87.125	<0.001*
Primary.	56(93.3%)	4(6.7%)		
Secondary	59(95.2%)	3(4.8%)		
Tertiary	13(31.7%)	28(68.3%)		
Employment status				
Government employee	44(66.7%)	22(33.3%)	3.613	0.461
Non-government employee	49(90.7%)	5(9.3%)		
Self-employed/farmers	80(89.9%)	9(10.1%)		
Casual worker	11(78.6%)	3(21.4%)		
Unemployed	5(71.4%)	2(28.6%)		
Religion				
Catholic	51(82.2)	11(17.7%)	54.630	0.048*
Protestant	90(75.5%)	28(24.5%)		
Muslim	29(93.5%)	2(6.5%)		
Seventh Day Adventist	10(83.3%)	2(16.6%)		
Parity (Number of children)				
1-2	66(70.5%)	12(29.5%)	11.384	0.010*
3-4	97(89.2%)	25(10.8%)		
Above 5	26(86.7%)	4(13.3%)		

*Statistically significant

Table 6: Association between some selected health care providers' factors and the use of modern contraceptives amongst respondents

Variables	Use of contraceptives		Test (χ^2)	p-value
	No	Yes		
Information provided by the health care worker (HCW).	Yes	68(68.0%)	4.421	0.035*
	No	121(93.1%)		
HCW attempted to help respondent select a family planning method.	Yes	77(78.6%)	1.51	0.2187
	No	112(84.9%)		
HCW talks about possible side effects.	Yes	130(80.8%)	0.74	0.380
	No	59(85.5%)		

*Statistically significant

awareness did not translate into increased contraceptive use amongst these respondents in this study. The low prevalence of modern postpartum contraceptives used in this study is consistent with the prevalence of current use of contraception in Nigeria of 15% reported by the NDHS in 2013 but at variance with a similar survey done in Kano state Nigeria in which contraceptive uptake postpartum was 66.6%¹⁷.

The mean age of the respondents in this study is 25.2 (± 9.0) years, and about two-fifth were

within the age group of 25-29. The age group of respondents in this study was statistically significant with the utilization of modern contraceptive methods during the postpartum period. Younger women appeared to utilize family planning more and were statistically significant for women less than 20yrs. This may result from an increased desire to space her pregnancy at this age for carrier development.

Women with higher educational status reported higher use of a contraceptive method, and

this relationship was found to be statistically significant. Thus, higher education level attainment may give postpartum women a better understanding of the available information about modern contraceptive methods and the benefits of fertility regulation, and the need for contraception during the postpartum period. The finding in this study is in corroboration with the result of a study done in Ethiopia in which a higher level of education correlated with an increase in postpartum contraceptive uptake¹⁸. Also, these findings were consistent with findings from a study done in Uganda¹⁹. Higher education level attainment invariably gives postpartum women a better understanding of the available modern contraceptive methods and the benefits of fertility regulation, and the need for contraception during the postpartum period. The suggestion is corroborated by findings in this study which suggested an association between education and awareness of the various types of contraceptives and associated side effects.

Respondents' religious beliefs can influence the acceptance and use of modern contraception by couples. Within religions, different sects may interpret religious teachings on this subject differently, and individual women and their partners may choose to ignore religious teachings. In this study, women of Protestant denomination also reported more use significantly than Catholics and Islamic religions. This may be related to the fact that there were more protestants in this study. However, some other studies have corroborated this pattern of practice²⁰⁻²². Of note also in this study was that there was much flexibility within various religions. This could mean that the final decision to accept the modern contraceptive method was based on self-motivation rather than religious teachings or beliefs on contraceptive methods.

In this study, respondents' employment status was not significantly associated with contraceptive uptake. However, those who work in government-owned facilities were more likely to utilize a method of contraception. This probably could have been due to the proximities with contraceptive facilities. The postpartum contraceptive uptake was significantly associated with information provided by the healthcare provider. Adequate contraceptive information correctly passed and dimly understood by the

receiver is key to the uptake of contraception. Providing postpartum women with side effects of these methods did not significantly improve uptake. Previous studies have corroborated these findings. The provision of information on family planning by health care workers increased the intention to use postpartum family planning²³⁻²⁵.

Furthermore, higher parity was significantly associated with contraceptive use postpartum. Women who had higher were more likely to use a form of modern contraception. This finding contrasts with a previous study done in Uganda in which women with higher parity predicted increased uptake of contraceptive method²⁶. Although not within the scope of this study, it would be interesting to examine the type of contractive method commonly used by these postpartum women. Finally, this study had a limitation of reporting bias as contraceptive use was self-reported by the respondents.

Ethical approval

The ethics approval to conduct the study was obtained from the research and ethical committee of Irrua Specialist Teaching Hospital (ISTH), Irrua Edo State, Nigeria. Written informed consent was obtained from all study participants. The authors complied with all ethical regulations throughout the study.

Conclusion

In conclusion, low postpartum modern contraceptive use of 17.8% was found in this study. Factors associated with utilization were higher educational status (tertiary and postgraduate education), extremes of reproductive age, fewer children, and adequate information provided by healthcare providers. It is imperative to strengthen family planning counseling services during prenatal care, emphasize the girl child's education, and provide adequate information on the benefits of postpartum contraception. This could enhance modern contraceptive use for postpartum women. There should be efforts to target women in their homes, communities, and workplaces and educate them on family planning benefits. In addition, the education of the girl child should be encouraged at all levels, particularly from childhood. The postpartum women with Secondary level education

and below should be identified by the attending MCH care provider when they attend the clinics. In addition, better ways of communicating modern contraceptive methods, including the side effects, should be researched and applied to bridge the information gap.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

Joseph Okoeguale was involved in the conceptualization of the study, literature review, and data collection.

Emmanuel F. Osagiede was involved in the research design, write-up, and final editing of the manuscript.

Idumwonyi Osaretin and Alfred E. Ehigiegba were involved in the manuscript write-up.

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