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Client-related factors influencing contraception uptake among postpartum women in Kitui County, Kenya

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Abstract

Background/Aims Low postpartum contraception uptake is a major public health concern, as it contributes to the rising incidence of unintended pregnancies among postpartum women. This results in increased maternal and infant morbidity and mortality rates. This study's aim was to assess the influence of client-related factors on the uptake of postpartum contraception among postpartum women.

Methods This mixed-methods study was carried out in two purposively selected health facilities in Kitui County, Kenya. For quantitative data, 228 randomly sampled postpartum women completed semi-structured questionnaires and responses were analysed using Chi-squared and Fisher's exact tests to establish factors related to postpartum contraceptive uptake. For qualitative data, four focus group discussions were held with 40 postpartum women and key informant interviews were carried out with department in-charges at the two health facilities, exploring perceptions of factors influencing postpartum contraceptive uptake. The qualitative data were analysed thematically.

Results There was a significant association between uptake of postpartum contraception and multiple factors, including: age (P=0.004), ethnicity (P=0.036), religion (P=0.027), education (P=0.013), residence (P<0.001) and employment (P<0.001). The qualitative findings highlighted individual and sociocultural factors that influenced uptake of postpartum contraception, including previous use of contraception, cultural beliefs and women's age, religion and education.

Conclusions There were multiple predictors of postpartum contraception uptake among women, including employment, parity, age, ethnicity, religion, residence and education. These constitute useful targets for interventions to improve postpartum contraception use.

Implications for practice It is important to educate women on contraception during postnatal, immunisation and wellbeing visits by providing information on the effectiveness and side effects of different methods. Efforts to encourage postpartum contraception use should also target partner and religious leader engagement to address misconceptions and support women in rural areas or those with lower education levels to overcome barriers to uptake. Tailored strategies are needed, possibly incorporating mobile reminders to support women in Kitui County and similar settings in their choice to use contraception.

Key words: Client factors; Contraception; Family planning; Non uptake; Postpartum; Uptake

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Introduction

The number and spacing of births are major determinants of maternal health (Ministry of Health Kenya, 2018), and maternal deaths are common in resource-limited settings, influenced by socioeconomic and cultural factors (United Nations, 2019). Postpartum contraception is used to prevent unintended or closely spaced pregnancies for the first 12 months after childbirth (World Health Organization, 2023) and can play an important role in meeting targets for 2030 set out in the sustainable development goals, particularly reducing the global maternal mortality ratio to <70 per 100 000 live births and the neonatal mortality rate to ≤12 deaths per 1000 live births (Gelagay et al, 2023).

A considerable number of maternal mortalities are preventable if proper interventions are put in place (Ministry of Health Kenya, 2017). Sub-Saharan Africa has the highest

rates of maternal and child mortality globally, with approximately 70% of maternal deaths occurring in the region (World Economic Forum, 2024). Pooled data from sub-Saharan Africa show that only 33% of women use contraception (Yemane et al, 2021) and 34% of women wish to delay or prevent pregnancy but are not using contraception (Teshale, 2022). Countries in sub-Saharan Africa have reported a high unmet need for postpartum contraception, which leads to high rates of unintended pregnancies, unsafe abortions and unplanned births (Gahungu et al, 2021). Specific reported rates of contraceptive use include 8.5% in Uganda, 20% in Burundi and 26% in Ghana, in the latter case despite increased knowledge of contraception among women of reproductive age who had had a live birth (Agula et al, 2022; Sisay et al, 2023).

In Kenya, the unmet need for postpartum contraception has decreased from 18% in 2014 to 14% in 2022 (Thiongo et al, 2022), but there is still room to improve provision of postpartum contraception in adversely affected regions. Kenya is ranked fourth in Africa for maternal mortality burden, with a maternal mortality ratio of 594 per 100 000 live births (United States Agency for International Development, 2024). Kitui County has a high fertility rate (3.2 children per woman) coupled with a contraceptive prevalence rate of 55%, although it is thought that actual uptake may be lower as this has not been well explored (Kenya National Bureau of Statistics et al, 2022). The maternal mortality ratio for Kitui County was not documented in the 2022 Kenya demographic health survey, but may be higher than the national average for Kenya.

The present study's aim was to answer the question 'what client-related factors influence postpartum contraception uptake among postpartum women?'. Client-related factors were specifically explored because they directly influence a woman's decision making and ability to access and use contraceptive methods after childbirth. These factors can include personal beliefs, cultural norms, health knowledge, access to healthcare services, socioeconomic status, sociodemographic factors and prior experiences with contraception. The study's findings were intended to inform interventions to improve postpartum contraception use rate. The theoretical base of the study was derived from the Health Belief Model (Rosenstock, 1990), which considers perceived susceptibility, perceived barriers and cues to action as factors that can influence postpartum contraceptive use.

Methods

This mixed-methods study was conducted between December 2022 and April 2023. A mixed-methods approach was used to gain a comprehensive understanding of the research problem. The quantitative component consisted of a descriptive cross-sectional survey while qualitative data were collected to provide context, explore experiences and delve into specific themes. For the purposes of the study, postpartum contraceptive uptake was defined as using contraceptive methods within 6 weeks of giving birth.

Participants

Two major referral health facilities (Kitui and Mwingi) were purposefully selected for this study as they serve large catchments with a large population of postpartum women. The target population was postpartum women admitted to the labour or postnatal wards or who visited the family planning clinic within 6 weeks postpartum and in-charges of the three departments related to reproductive health in each selected health facility.

For the quantitative branch of the study, Fisher's formula was used to calculate the sample size, assuming an average target population of 456 (based on hospital records at the time, as there were no data from published studies) and yielding an ideal sample of 228 participants. The total sample after addition of a 5% attrition rate was 239 (119 and 120 participants respectively from the two health facilities). The inclusion criteria selected participants who were literate postpartum women who had not been diagnosed with a condition that would affect their mental capacity, such as schizophrenia, borderline personality disorder or bipolar disorder. Those who were ill during the study were excluded. Participants were selected by systematic random sampling; the first participant was selected randomly and then every second member of the population was recruited, yielding a final sample of 228 participants. Postpartum women were approached about

participating in the study while in the maternity department or attending the health facility for family planning services.

For the qualitative branch of the study, 40 postpartum women were purposively selected for focus group discussions and approached while they were receiving services at the maternity ward or during postnatal appointments. These participants were not included in the quantitative arm of the study and were selected for homogeneity within groups; participants were chosen because they shared similar characteristics, knowledge or experiences relevant to the study topic. This helped create a comfortable environment for discussion and deep exploration of shared experiences. Additionally, the in-charges of three departments (labour ward, postnatal unit, reproductive health department) at both facilities were purposively selected as key informants for interview (n=6 participants). For both the in-charges and postpartum women selected, those diagnosed with a condition that would affect their mental capacity or who were ill during the study were excluded.

Data collection

For quantitative data collection, trained research assistants administered a semi-structured questionnaire created by the authors based on the study's objectives. It was pretested with 24 postpartum women at a referral health facility in Kitui County, which had similar characteristics to the two facilities included in the final study. The tool had 21 open- and closed questions, split over three sections: sociodemographic factors (7 questions), socioeconomic factors (5 questions) and family planning-related client factors (9 questions). It was validated by the first author's research supervisors at Kenyatta University and reviewed for clarity, relevance and completeness by two local health professionals with expertise in maternal health and family planning (one registered nurse who was a reproductive health practitioner and one obstetrician-gynecologist). The questionnaires were administered in English and Swahili, with the Swahili-English Translator app used to translate the questions into Swahili and participants' answers into English. They were distributed at the maternity department of the selected facilities and took an average of 40 minutes to complete.

Four focus group discussions were held (two at each study site), each with 8–12 postpartum women. A discussion guide was created by the authors with questions on use of contraception after birth, the women's perceptions of using contraceptives and any cultural hindrances they experienced to using contraception. The guide was pretested before data collection with 20 postpartum women from two other facilities (10 from Migwani Level IV Hospital and 10 from Kyuso Level IV Hospital). The discussions took place at the selected health facilities 2 weeks after initial quantitative data collection, with each session lasting approximately 40 minutes.

Six key informant interviews were held using an interview guide created by the authors. The guide asked questions on use of contraception among the key informants' clients, the informants' perceptions of its use, cultural hindrances to its use in the community and client factors they felt impacted postpartum contraceptive use. The guide was pretested before data collection with four in-charges at Migwani Level IV Hospital and Kyuso Level IV Hospital (2 at each site). The interviews took place at the selected health facilities and lasted approximately 40 minutes.

The focus group discussions and interviews were conducted in Kiswahili or English, depending on the participants' preference. The Swahili-English Translator app was used for translation. The data were documented manually as audio recording was not feasible at the time because of resource limitations. Data saturation was reached after the second focus group discussion and second set of key informant interviews.

Data analysis

For quantitative data analysis, completed questionnaires were coded and analysed using the Statistical Package of Social Sciences (version 29.0). Inferential statistics were used to explore associations between participants' characteristics and uptake of postpartum contraception. Chi squared and Fisher's exact tests were used for multivariate analysis, with significance set at 5%.

Qualitative data were thematically analysed, per Braun and Clarke (2006). The six steps followed for this method were data familiarisation, coding, generating themes, reviewing themes, defining and naming themes and writing up the findings.

Ethical considerations

This study was granted ethical approval by the Kenyatta University Centre for Research Ethics and Safety (reference: PKU/2571/11697) and the National Commission for Science, Technology, and Innovation (reference: NACOSTI/P/22/2105). Permission to carry out the study was obtained from the Medical Superintendents at Mwingi Level IV Hospital and Kitui County Referral Hospital and the department in-charges. All study participants were asked to give written informed consent to participate, and were informed of their right to privacy, respect, anonymity and confidentiality, and that they could withdraw from the study at any time without penalty.

Results

Quantitative data

The participants' sociodemographic characteristics are shown in Table 1. The largest proportion of participants were 21–25 years old (39.5%). The majority were married (54.4%), Kamba (86.0%), Protestants (94.0%) who lived in rural areas (61.4%). The largest proportion had attended tertiary education (44.7%), although the majority were unemployed (62.7%) and earned ≤10 000 Kenyan shillings per month (75.0%).

Overall, 112 of the postpartum women were using contraception (49.1%). Table 2 shows associations between sociodemographic characteristics and postpartum contraception uptake. Uptake was significantly associated with age (P=0.004), ethnicity (P=0.036), religion (P=0.027), education (P=0.013), employment (P<0.001) and residence (P<0.001).

Table 1. Sociodemographic characteristics

Variable		Frequency, *n*=228 (%)
Age (years)	≤20	44 (19.3)
	21–25	90 (39.5)
	26–30	65 (28.5)
	31–35	15 (6.6)
	≥36	14 (6.1)
Marital status	Married	124 (54.4)
	Unmarried	104 (45.6)
Ethnicity	Kamba	196 (86.0)
	Other	32 (14.0)
Religion	Protestant	214 (94.0)
	Catholic	7 (3.0)
	Other	7 (3.0)
Education	Primary	38 (16.7)
	Secondary	88 (38.6)
	Tertiary	102 (44.7)
Employment	Employed	85 (37.3)
	Unemployed	143 (62.7)
Area of residence	Rural	140 (61.4)
	Urban	88 (38.5)
Income (Kenyan shillings)	≤10 000	171 (75.0)
	>10 000	57 (25.0)

Table 2. Associations between sociodemographic characteristics and postpartum contraception uptake

Variable	Category	Uptake, *n*=63 (%)	Non-uptake, *n*=165 (%)	Chi/Fisher exact test	*P* value
Age (years)	≤20	3 (6.8)	41 (93.2)	χ^2=15.327	0.004
	21–25	25 (27.8)	65 (72.2)	df=4	
	26–30	28 (43.1)	37 (55.9)		
	31–35	4 (26.7)	11 (73.3)		
	≥36	3 (21.4)	11 (78.6)		
Marital status	Married	34 (27.4)	90 (72.6)	χ^2=0.026	0.494
	Not married	29 (27.9)	75 (72.1)	df=1	
Ethnicity	Kamba	89 (45.4)	107 (54.6)	χ^2=0.040	0.036
	Other	14 (43.8)	18 (56.3)	df=1	
Religion	Protestant	100 (46.7)	114 (53.3)	χ^2=7.239	0.027
	Catholic	0 (0.0)	7 (100.0)	df=2	
	Other	2 (28.6)	5 (71.4)		
Education	Primary	3 (7.9)	35 (92.1)	χ^2=8.674	0.013
	Secondary	17 (19.3)	71 (80.7)	df=2	
	Tertiary	43 (42.2)	59 (57.8)		
Employment	Employed	35 (41.2)	50 (58.8)	χ^2=12.434	<0.001
	Unemployed	38 (26.6)	105 (73.4)	df=1	
Residence	Rural	35 (25.0)	105 (75.0)	χ^2=22.214	<0.001
	Urban	49 (55.7)	39 (44.3)	df=2	
Family income (Kenyan shillings)	≤10 000	43 (25.1)	128 (74.9)	χ^2=1.398	0.290
	>10 000	20 (35.1)	37 (64.9)	df=1	

Qualitative data

Table 3 shows the themes and subthemes found from the qualitative data gathered from focus group discussions and key informant interviews. There were two main themes related to factors that influenced postpartum contraception uptake: individual factors, which included previous use of contraception and parity as well as barriers to uptake, and sociocultural factors, such as cultural beliefs, age, education and religion.

Table 3. Themes and subthemes

Theme	Sub-themes
Individual factors	Previous use and parity
	Barriers to uptake
Sociocultural factors	Cultural beliefs
	Age
	Education
	Religion

Individual factors

Parity and previous use of contraception

Several participants reported that they were currently using contraception and had used it before or between pregnancies to avoid unplanned pregnancy.

> **'I have been using family planning to space my babies and would like to use again since I do not want unplanned pregnancies'. Participant 27, focus group discussion**

> **'Before I got pregnant with my third born, I was using Jadelle for 3 years … I find it necessary to use a family planning method even now'. Participant 32, focus group discussion**

Participants from both focus group discussions and interviews reported that having previously had children influenced contraception use, as increased exposure to information about contraception helped inform women of their choices.

> **'Having more than one child has exposed me to adequate knowledge on different methods of family planning. This has helped me make family planning decision with ease since I already understand my family planning needs'. Participant 3, focus group discussion**

> **'[The] majority of the women who have had more than two children are embracing family planning currently. This has helped in preventing complications related to closely spaced births'. Participant F, key informant interview**

Barriers to uptake

Fear of possible side effects from contraception discouraged its use.

> **'[The] majority of the women around here believe that use of family planning leads to heavy bleeding and delayed conception. This has really discouraged them [from seeking] postpartum family planning services from our facility'. Participant A, key informant interview**

> **'Use of contraceptives may make someone infertile; therefore, I cannot use something that will make me not have babies in future'. Participant 15, focus group discussion**

Sociocultural factors

Cultural beliefs

Postpartum women experienced challenges when seeking postpartum contraception, as a result of cultural beliefs relating to spousal approval and whether or not contraceptive use was deemed acceptable.

> **'From my culture, use of contraceptives is prohibited especially immediately after delivery since the baby may die instantly'. Participant 9, focus group discussion**

> **'My husband dislikes this whole issue of family planning. He fears that if I use [it], we may not have other children in future. Even though we live together, I do not use any family planning after giving birth'. Participant 20, focus group discussion**

Age

Some of the participants were still in school and therefore struggled with the stigma associated with seeking postpartum contraception.

> **'I fear taking contraceptives while I am still in school because of stigma and I have already faced it rough carrying pregnancy while still a student'. Participant 2, focus group discussion**

> **'We have observed the trend changing from a younger population that disliked contraception to one that is starting to embrace it through even the youth-friendly services'. Participant B, key informant interview**

Education

Two of the key informants felt that education played an important role in whether women sought postpartum contraception.

> **'We are witnessing more highly educated women coming for family planning services as compared to the primary and secondary levels'. Participant C, key informant interview**

> **'Education is important since I am able to understand the teaching on family planning, the benefits, side-effects and make a selection of my own. When a woman is learned, then they can make proper decisions'. Participant F, key informant interview**

Religion

Participants from some religious affiliations, such as the Seventh Day Adventist church, had been taught about family planning in church and were encouraged to space their pregnancies.

> **'We have this family life programme in our church where we are taught about family planning and the importance of getting a method immediately after childbirth'. Participant 14, focus group discussion**

However, other religious groups strongly discouraged or even forbid their members from using or discussing contraceptive methods.

> **'I have been taught by my Pastor that contraceptives are for fornicators, that's why I am not using'. Participant 35, focus group discussion**

> **'My faith does not allow for discussions about contraception. Actually, if you are found either using or teaching about it, you are punished and banished from the Church'. Participant 40, focus group discussion**

Discussion

This study explored factors that influence postpartum contraception uptake in Kitui County, Kenya. The quantitative results showed that several factors significantly impacted postpartum contraception use, including age, ethnicity, education, religion, employment and residence. The qualitative findings supported several of these associations, with both focus group discussions and key informant interviews highlighting the role of age, education, religion and parity.

Quantitative findings

Age is a known determinant of postpartum contraceptive use, with younger women reportedly less likely to use contraception. A study in Cameroon found that contraceptive use increased as women aged, with a significant leap observed when women reached their late 20s, especially in urban areas where access to healthcare was higher (Zegeye et al, 2022). These factors may also be linked to other characteristics; wealthier individuals may have easier access to family planning services (Supti et al, 2025) and employed women may have more financial independence and better healthcare coverage (Okui, 2025).

Education was also found to be related to contraceptive use, as has previously been highlighted in a systematic review and meta-analysis of factors linked with contraceptive use in low-income countries of sub-Saharan Africa (Yemane et al, 2021). A study in Kenya currently undergoing open peer review reported that women who attended higher education were likely to have greater access to information, be empowered in decision making and use contraception (Nyakundi et al, 2024). The link between education and contraceptive use

was especially pronounced in urban areas, where educational opportunities and healthcare access were more widespread (Nyakundi et al, 2024).

The present study also highlighted a significant link between urban residence and postpartum contraceptive use. Similarly, studies in Uganda and Nigeria have reported that women in urban areas were more likely to use contraception than those in rural areas (Ujah and Kirby, 2022; Arunda et al, 2023). This disparity may be related to transportation difficulties, lack of health infrastructure and cultural barriers in rural settings (Arunda et al, 2023).

The present study found that ethnicity was also significantly linked with postpartum contraceptive use. Women from certain ethnic groups in sub-Saharan Africa, particularly those from rural areas, have previously been reported to be less likely to use postpartum contraception as a result of cultural and traditional beliefs around fertility and family planning (Abraha et al, 2018). Similarly, a study examining the role of ethnicity in contraceptive use among Hispanic women in the US noted that this population was less likely to use modern contraception postpartum because of cultural influences and language barriers that affected healthcare access (Rodriguez et al, 2021).

Religion was also significantly linked with contraceptive use and may have a significant role in shaping attitudes toward contraception. A study of multireligious African countries found that Christian women were more empowered than Muslim women or those with no/other religion, and they were more likely to report that their demand for contraceptive methods was satisfied (Hellwig et al, 2024). Religion can act as a barrier or enabler to postpartum contraceptive use, depending on the religious doctrines and level of adherence among women in different communities.

Qualitative findings

The qualitative data highlighted that postpartum women and department in-charges felt that parity was an important influencer of postpartum contraception use. Similarly,a study in Webuye, Kenya indicated that there was a significant difference in postpartum contraception uptake between primiparous and multiparous women, with primiparous women being less likely to use postpartum contraception than their multiparous counterparts (Naanyu et al, 2013). Population-based studies in Tanzania and Uganda have also demonstrated a positive association between the number of living children a woman has and her likelihood of using postpartum contraception (Hackett et al, 2020; Tumwizere et al, 2024).

The present study did not find that marital status was associated with postpartum contraception use, although previous studies have shown that married women were more likely to use contraception (Anyatonwu et al, 2023). This could be because married women are more likely to engage in frequent sexual activities (Pasha et al, 2015). However, the qualitative findings highlighted that some women's partners did not approve of or support their use of postpartum contraception. This is consistent with the findings from a study in Kenya, where the odds of postpartum contraception uptake among women living with their sexual partners was found to be 88.2% less than among those not living with their partners (Owuor et al, 2018).

The present study found a significant association between age and postpartum contraception use. Almost all women who were ≤20 years old did not use contraception (93% of this group), but use initially increased with age, with the greatest rate of use among women aged 26–30 years old (42% of this group used contraception). The rate of use reduced in women who were more than 30 years old. The qualitative findings supported these data, highlighting that very young women struggled to access contraception while at school because of the associated stigma. This may be because women in higher age groups may assume they are less fertile and have no need for contraception. Previous studies have also reported a significant relationship between age and contraceptive use (Rutaremwa et al, 2015), supporting the present study's findings.

Implications for practice

The Ministry of Health and the Kitui County Government should implement targeted campaigns to promote postpartum contraception, focusing on encouraging use among women with less education and those living with their partners. A thorough analysis of

Key points

- Postpartum contraception is critical for preventing unplanned pregnancies and closely spaced pregnancies in the first year after childbirth.
- Promoting contraception use after childbirth in sub-Saharan Africa may help to address high mortality rates.
- Factors such as employment, parity, age and education are key to uptake of postpartum contraception, and should be the focus of targeted interventions to improve its use.

the role of individual factors on postpartum contraception uptake may help build on the qualitative results reported in the present study.

Strengths and limitations

This study used both quantitative and qualitative methods, which provided more complete understanding of the problem and deeper insights based on a broader view (statistics used in quantitative methods) and personal views (qualitative methods).

However, the descriptive cross-sectional design meant that the study was limited to exploring a single point in time at the two healthcare facilities. The participants' perspectives may change over time, and their decision-making process regarding postpartum contraception may also be altered. Additionally, there was a risk of social desirability bias, which was minimised by conducting data collection in rooms with both audio and visual privacy, encouraging participants to speak candidly about their experiences and concerns. Finally, the study included only women who attended the health facilities during the study period and the findings may therefore not be generalisable to the wider population, including women who did not attend healthcare facilities or who received healthcare in different settings.

Conclusions

In low- and middle-income countries such as Kenya, health systems are overburdened and healthcare professionals often face challenges in providing postpartum contraception services. This study found that employment, parity, age, ethnicity, religion, residence and education can affect uptake of postpartum contraception, making these useful targets for interventions to improve postpartum contraception use.

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Author contributions

This study was conceptualised by JNM, who designed it with EG. JNM and EG collected the data and carried out data analysis with JM, who also performed the statistical interpretation. All three authors contributed to the write up and approved the final manuscript. JM provided supervision of the overall process.

Conflicts of interest

The authors declare that there are no conflicts of interest.

Data sharing

Data are available from the authors on reasonable request.

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