

Postpartum Contraceptive Use In Parakou (A City In Northern Benin) In 2018: A Community Based Cross-Sectional Study

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Background: Over 30% of maternal deaths and 10% of infant deaths are avoidable if couples space out births at intervals of 2 years or greater. This study aimed to identify factors associated with contraceptive use in the postpartum period.

Methods: This was a cross-sectional study among postpartum women living in Parakou. Participants were selected using a two-stage sampling method. Postpartum contraceptive use was defined as the use of at least one contraceptive method at the time of the survey. Independent variables included socio demographic and reproductive history. For the analysis we performed a multiple logistic regression and we calculated odds ratios with 95% confidence intervals.

Results: The study included 453 postpartum women. Among the participants, 59 (13%) were using a contraceptive method. Injectable contraceptives were the most common method used (25.4%). Factors associated with contraceptive use in the postpartum period included history of contraceptive use (AOR=9.4; $p<0.001$), resumption of sexual intercourse (AOR=5.7; $p<0.001$), discussion with partner about contraceptive method (AOR=5.7; $p=0.005$), need of partner's approval before adopting a contraceptive method (AOR=0.4; $p=0.014$) and counseling during pregnancy, in the delivery room, and during postnatal visits (AOR=2.7; $p=0.019$).

Conclusion: The prevalence of contraceptive use during the postpartum period remains low. Interventions should be designed with a focus on the associated factors in order to increase postpartum contraceptive use in Parakou.

Keywords: family planning, postpartum period, risk factors, Benin

Introduction

In 2015, approximately 303,000 women died during pregnancy, delivery, or postpartum, and the majority of these deaths occurred in low income countries.¹ A key strategy in reducing maternal mortality is family planning (FP) during the postpartum period, which can prevent unintended pregnancies and short interpregnancy intervals during the twelve month period after delivery.² We consider that spacing births at least every two years could lead to a more than 30% reduction in maternal deaths and a 10% reduction in infant deaths.³ An expansion of contraceptive use should help achieve this goal.

In developing countries, two-thirds of lactating women do not use any contraceptive method, while one-third will become pregnant again within fifteen months after their last delivery.⁴ About one fifth of pregnancies in Benin are unplanned. Among women in the Borgou Department, the prevalence of current modern family planning methods is 11%. An estimated 27.4% of women have an unmet need for family planning.⁵

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Although many studies have assessed the uptake of family planning and associated factors generally, few have specifically focused on contraceptive utilization in the postpartum period. And yet, women in the post-partum period are among those most in need of FP services. Indeed, the consequences of inadequate use of contraceptive methods during the post-partum period are an increase in the number of pregnancies and a reduction in the inter-reproductive interval. Such consequences put the mother and child at increased risk of maternal morbidity, low birth weight, intrauterine growth retardation, prematurity, and malnutrition.⁶⁻⁸ In addition, there are a range of psychological and social consequences that can affect the mother and the breastfeeding child, as well as the unborn child. In order to guide strategies aimed at increasing FP prevalence, this study aimed to identify the factors associated with contraceptive use among women during the postpartum period.

Methods

Study Design, Study Population And Sampling Procedure

The study was conducted in Parakou, a city in northern Benin (West Africa), specifically in the Borgou Department. This was a community-based cross-sectional study of women in the postpartum period. Inclusion criteria included all women living in Parakou who had given birth in the twelve months prior to the study. The data were collected from May 1–31, 2018. Women who had a tubal ligation or a hysterectomy, as well as those who did not consent to participate, were excluded from the study. Parakou consists of 58 villages and districts.⁹ Sampling was conducted in two stages. For the first stage, half (29) were selected by simple random sampling. In the second stage, we selected households with women who were eligible for the survey. In the center of each selected district, we used the direction indicated by the throwing of a ballpoint pen, and then proceeded to number all the households in the chosen direction and select one household to survey in that area by simple random draw. It was in this household that the selection of women began and the following was done according to the nearest door technique, until we obtained the number of eligible women needed per district. A maximum of two women per household were randomly selected. The sample size was calculated based on modern contraceptive prevalence in Borgou department (11%) in 2012,⁵ following the

Schwartz formula with an accuracy of 3%. The minimum sample size needed for the study was $n = 418$, however we increased the number of participants sampled by 10% to take into account non-response. In total, 460 women were surveyed. The number of eligible women surveyed by area was obtained by proportional allocation to the number of expected births by district/village of Parakou in 2017.

Techniques, Data Collection And Variables

Data were collected via a pre-tested questionnaire. The dependent variable was defined as the use of at least one contraceptive method during the postpartum period. This was a binary qualitative variable measured from the woman's statement. This variable was coded « yes » if the woman reported using a contraceptive method at the time of the survey and « No » if otherwise. In order to identify factors associated with PF in the postpartum period, we included sixteen (16) independent variables at the level of the respondents. These included i) socio demographic features such as age, level of education, occupation, religion, marital status, husband's education level, socio-economic level, ii) factors related to the woman's reproductive history such as gravidity, parity, menses resumption, knowledge of contraceptives methods, contraceptive use history, resumption of sexual activities post-pregnancy, last intended pregnancy, counseling during pregnancy/in the delivery room/in postpartum period, and iii) discussion around contraceptive use with husband/partner, need of husband's permission before adopting a contraceptive method.

The socio-economic level of the respondent's household was determined using the Demographic and Health Surveys' poverty index, which is a composite index of socio-economic status that assigns a weight or scores. Scores are obtained through a principal component analysis, as described by Filmer and al,¹⁰ which takes into account the number of properties the respondent owns and the household's characteristics. Each respondent is ranked according to the household asset score and is assigned to poverty tertiles as follows: poorest (Poor), average (Average), and wealthiest (Rich).

Knowledge of contraceptive methods was assessed in a dichotomized manner ("yes" vs "no") based on the answers given by the respondent; those categorized as "Yes" "could cite at least one role and were able to give at least

two examples of contraceptive methods” and those categorized as “No” did not meet such criteria.

Data Processing And Analysis

The data were processed using Epi Data 3.1 and Stata 11. We gathered descriptive statistics and the results are presented as a mean (standard deviation) or median (Interquartile range) for the quantitative variables. Categorical variables were expressed as a percentage. To identify the factors associated with contraceptive use in the postpartum period, logistic regression was used to estimate crude and adjusted odds ratios (OR) and their corresponding 95% confidence intervals (95% CI). Using a significance threshold of 20%, a univariate analysis was conducted to pre-select variables that were included in the multivariate model. We used a step down (descending) modeling strategy for the gradual elimination of variables which are less significantly related to postpartum contraceptive use. Variables were retained in the final model if they had a statistical significance level of less than 5%. We also searched for possible interactions and confounding factors. The fitness of the final model was verified using the Hosmer Lemeshow test.

Ethical Statement

This study was conducted in accordance with the Declaration of Helsinki. Prior to the data collection, ethical authorization (N° 0123/CLERB-UP/P/SP/R/SA) was obtained from the Faculty of Medicine (University of Parakou) ethical clearance committee, as well as from Parakou’s city health authorities. When recruiting participants, researchers informed subjects of the purpose of the study, the fact that it was anonymous, and of their right to agree or refuse to participate. Participants were also told that they could withdraw from the study at any time if they wished to do so. The interviews took place in private to ensure confidentiality. Prior to data collection, the research team obtained written consent to participate from all respondents.

Results

Characteristics Of Participants

A total of 460 women in the post-partum period were recruited. 453 of participants responded fully to the questionnaire, making the response rate 98.47%. The average age was 27.1 years (SD=6). Participants ranged in age from 15 to 45 years and 36.2 % were under 25. The

majority were married (74.6%), and most were merchants (36.9%), Muslim (68.4%) and uneducated (39.3%).

The majority of respondents (85%) were familiar with birth control methods. One of every 2 women surveyed (50.3%), had discussions around contraception with their partner. About 3 out of 4 women (73.3%) reported needing their partner’s permission before using any contraceptive method. 67.1% of women who did not discuss contraception with their partner said they needed their husband’s permission before adopting a contraceptive method. Additional respondent characteristics are summarized in [Table 1](#).

Prevalence Of Postpartum Contraceptive Use

In total, 59 women were already using a contraceptive method at the time of the survey, making the prevalence rate at 13% (CI 95%: [9.9%–16.1%]). Among women who were familiar with contraceptive methods (n=385), 15.3% were using contraception at the time of the survey. Injectable contraceptives (25.4%) and natural methods (23.7%) were the most frequently used ([Figure 1](#)).

Factors Related To Postpartum Contraceptive Use

In the univariate analysis, factors associated with postpartum contraceptive use included: woman’s and husband’s educational level, religion ($p=0.028$), socioeconomic status, menses resumption, prior use of contraceptives, resumption of sexual activities, discussion of contraceptive use with husband/partner, the need for husband’s permission prior to starting a contraceptive method, and counseling during the pregnancy, in the delivery room, and during postpartum visits ([Table 1](#)).

Results from the multiple logistic regression analysis ([Table 2](#)) demonstrated that the history of contraceptive use before the last pregnancy increases the probability of contraceptive use in the postpartum period (AOR=9.4; $p<0.001$). Women who had already resumed sexual activities were more likely to use contraceptives than those who had not (AOR=5.7; $p<0.001$). In addition, women who discussed FP with their partner were more likely to use contraceptive methods in the post-partum period than others (AOR=3.5; $p=0.005$). Women who reported that they received counseling during pregnancy, in the delivery room, and during postpartum visits were also more likely to be using contraceptive methods than others (AOR=2.7; $p=0.019$). On the other hand, those who needed their husband’s permission were

Table 1 Univariate Logistic Regression Of Factors Associated With Postpartum Contraceptive Use In Parakou, Benin, 2018

| | Total Population | | Postpartum Contraceptive Use | | |
|------------------------------------|------------------|------|------------------------------|------------------|---------|
| | Number | % | % | OR [95% CI] | p-value |
| Age (Years) | | | | | 0.230 |
| < 25 | 164 | 36.2 | 9.1 | 1 | |
| 25–29 | 132 | 29.1 | 16.7 | 2.0 [1.0–4.0] | |
| 30–34 | 91 | 20.1 | 15.4 | 1.8 [0.8–3.9] | |
| ≥ 35 | 66 | 14.6 | 12.1 | 1.4 [0.6–3.4] | |
| Educational level | | | | | < 0.001 |
| No education | 178 | 39.3 | 7.3 | 1 | |
| Primary | 106 | 23.4 | 10.4 | 1.5 [0.6–3.4] | |
| Secondary | 147 | 32.4 | 17.7 | 2.7 [1.3–5.5] | |
| University | 22 | 4.9 | 40.9 | 8.8 [3.2–24.4] | |
| Occupation | | | | | < 0.001 |
| Student | 21 | 4.6 | 19.1 | 2.6 [0.7–9.7] | |
| Employed | 39 | 8.6 | 35.9 | 6.1 [2.2–16.8] | |
| Merchants | 167 | 36.9 | 13.2 | 1.6 [0.7–4.0] | |
| Housewife | 143 | 31.6 | 8.4 | 1.0 [0.4–2.6] | |
| Artisan | 83 | 18.3 | 8.4 | 1 | |
| Religion | | | | | 0.028 |
| Christian | 143 | 31.6 | 18.2 | 1.86 [1.06–3.25] | |
| Other ^a | 310 | 68.4 | 10.7 | 1 | |
| Marital status | | | | | 0.682 |
| Single | 19 | 4.2 | 10.5 | 1 | |
| Concubinage | 96 | 21.2 | 15.6 | 1.6 [0.3–7.5] | |
| Married | 338 | 74.6 | 12.4 | 1.2 [0.3–5.4] | |
| Husband education level | | | | | < 0.001 |
| No education | 136 | 30.0 | 8.1 | 1 | |
| Primary | 101 | 22.3 | 4.9 | 0.6 [0.2–1.8] | |
| Secondary | 172 | 38.0 | 16.9 | 2.3 [1.1–4.8] | |
| University | 44 | 9.7 | 31.8 | 5.3 [2.2–12.8] | |
| Socio-economic status ^b | | | | | 0.010 |
| Poor | 151 | 33.3 | 6.6 | 1 | |
| Average | 150 | 33.1 | 16.0 | 2.7 [1.2–5.8] | |
| Rich | 152 | 33.6 | 16.5 | 2.8 [1.3–6.0] | |
| Gravidity | | | | | 0.757 |
| 1 | 106 | 25.6 | 11.3 | 1 | |
| 2 – 3 | 96 | 21.2 | 14.9 | 1.4 [0.6–3.2] | |
| ≥ 4 | 241 | 53.2 | 13.1 | 1.2 [0.6–2.4] | |
| Parity | | | | | 0.985 |
| 1 | 116 | 25.6 | 12.9 | 1 | |
| 2 – 3 | 96 | 21.2 | 13.5 | 1.1 [0.5–2.3] | |
| ≥ 4 | 241 | 53.2 | 12.9 | 1.0 [0.5–1.9] | |
| Menses resumption | | | | | < 0.001 |
| No | 282 | 62.3 | 8.2 | 1 | |
| Yes | 171 | 37.7 | 21.1 | 3.0 [1.7–5.3] | |

(Continued)

Table 1 (Continued).

| | Total Population | | Postpartum Contraceptive Use | | |
|---|------------------|------|------------------------------|-----------------|---------|
| | Number | % | % | OR [95% CI] | p-value |
| History of contraceptive use | | | | | |
| No | 341 | 75.3 | 4.4 | 1 | < 0.001 |
| Yes | 112 | 24.7 | 39.3 | 14.1 [7.4–26.7] | |
| Sexual intercourse resumption | | | | | |
| No | 294 | 64.9 | 4.8 | 1 | < 0.001 |
| Yes | 159 | 35.1 | 28.3 | 7.9 [4.2–14.9] | |
| Last pregnancy was planned ? | | | | | |
| No | 33 | 7.3 | 9.1 | 1 | 0.489 |
| Yes | 420 | 92.7 | 13.3 | 1.5 [0.5–5.2] | |
| Discussion about contraceptive use with partner | | | | | |
| No | 225 | 49.7 | 4.9 | 1 | < 0.001 |
| Yes | 228 | 50.3 | 21.1 | 5.2 [2.6–10.3] | |
| Partner's permission needed ^c | | | | | |
| No | 121 | 26.7 | 20.7 | 1 | 0.004 |
| Yes | 332 | 73.3 | 10.2 | 0.4 [0.2–0.8] | |
| Counseling Received ^d | | | | | |
| No | 189 | 41.7 | 5.3 | 1 | < 0.001 |
| Yes | 264 | 58.3 | 18.6 | 4.1 [2.0–8.3] | |

Notes: ^aMuslim (n=301); (Animist n=9); ^bSocio-economic status was categorized using tertiles, with the lowest being "Poor" and the highest being "Rich"; ^cPartner's permission needed before adopting a contraceptive method; ^dCounseling during pregnancy/in the delivery room/in postpartum period

Abbreviations: OR, odds ratio; %, Percentage.

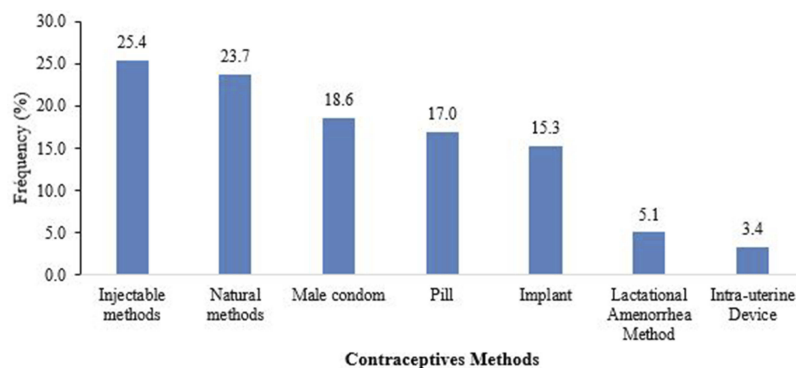


Figure 1 Contraceptives methods used at times of the survey in Parakou, Benin, 2018.

less likely to use a contraceptive method during the postpartum period (AOR=0.4; p=0.014).

Discussion

Prevalence Of Postpartum Contraceptive Use

The prevalence of postpartum contraceptive use was 13%, revealing a very low uptake of contraceptive methods for

postpartum women in Parakou. This finding aligns closely to results reported in the 2012 Demographic Health Survey (DHS),⁵ but it remains significantly lower than most of the results found in the literature. For example, Jalang'o and al¹¹ reported a prevalence of 86.3% in Kenya in 2017. Bwazi and al¹² found a prevalence of 74.6% in 2014 in Ntchisi (Malawi). Such differences could be explained by the fact that the target populations of these studies were women in the 18th-24th month¹¹ and 6th-12th

Table 2 Multivariate Analysis Of Factors Associated With Postpartum Contraceptive Use In Parakou, Benin, 2018

| | OR [95% CI] | P value |
|---|----------------|---------|
| Contraceptive method use history | | < 0.001 |
| No | 1 | |
| Yes | 9.4 [4.6–18.8] | |
| Resumption of sexual relationships | | < 0.001 |
| No | 1 | |
| Yes | 5.7 [2.8–11.7] | |
| Discussion about contraceptive use with husband/partner | | 0.005 |
| No | 1 | |
| Yes | 3.5 [1.5–8.4] | |
| Partner's permission needed* | | 0.014 |
| No | 1 | |
| Yes | 0.4 [0.2–0.8] | |
| Counseling received** | | 0.019 |
| No | 1 | |
| Yes | 2.7 [1.2–6.3] | |

Notes: *Partner's permission needed before adopting a contraceptive method; **Counseling during pregnancy/in the delivery room/in postpartum period; Hosmer Lemeshow test: $p=0.374$.

Abbreviation: OR, odds ratio.

month,¹² respectively, of the postpartum period, whereas our study looked at women in the first 12 months after delivery. In addition, these studies were conducted in hospital settings, while the current study was conducted with the general population. Abera and al. reported that 48.4% of the general population of Gondar (in the north-west of Ethiopia) used contraceptives in 2013.¹³ This lower prevalence as compared to our study could be due to the fact that Gondar is a more urbanized area where the population has increased access to family planning, as opposed to Parakou. In 2015, in Uganda, Sileo and al. reported the prevalence of postpartum contraceptive use at 25.0%.¹⁴ This rate is high as compared to our results and was obtained among women seen for antenatal care (ANC), postnatal visits, and infant immunizations. Such results suggest the potentially positive impact of integrated postnatal care on increasing contraceptive uptake.

Factors Associated With Postpartum Contraceptive Use

Our study revealed that women who had used contraceptives prior to their most recent pregnancy were more likely to use contraceptives during the postpartum period. This is most likely due to the fact that such women were already familiar

with and had a better understanding of contraception. This same finding was reported by Achyut and al in India in 2012,¹⁵ and by Sileo and al.¹⁴ Women who had resumed sexual activities post-partum were more likely to use contraceptives than others. This could indicate a perception among women that contraceptives are not useful until they resume their sexual relationships. Findings from Abraha and al¹⁶ and Bwazi and al¹² are also consistent with our results. Women who had discussions around family planning with their partner were the most likely to use contraceptives in the postpartum period. Sileo and al¹⁴ revealed that partner communication about the topic of FP was significantly associated with postpartum period family planning. Bwazi and al found a relationship between the extent to which husbands assist women in accessing family planning services during the post-partum period and the use of contraceptive methods.¹² These findings could be explained by the value placed on the husband's input into major decisions in the family, including contraceptive use. Furthermore, in this study, women who did not need their husband's permission were more likely to use contraceptives in the postpartum period. Our study found that socio-cultural factors play a key role in decisions around adopting a contraception method. Paradoxically, we found that a majority of women who did not discuss contraceptives with their partner reported that they still needed permission prior to using contraceptives. These women may fear their husbands' reaction, due to inaccurate perceptions around contraceptive use. In a study by Eliason and al,¹⁷ 82% of women reported needing their husband's permission before beginning a contraceptive method. These findings highlight the role that husbands could play in encouraging the use of health services in general and family planning services in particular. It is therefore essential to involve men in interventions to promote contraceptive use. This study found that women who reported having received counselling during their pregnancy/in the delivery room/at postpartum visits were more likely to use contraceptives method in the postpartum period. This is consistent with other findings in the literature.^{13,15,18–22} At antenatal and postnatal visits, women can receive counselling around family planning and have the opportunity to start using contraception. Women who receive antenatal and postnatal care adequately are more likely to be informed about contraceptive use and its benefits.

Strengths And Limitations

The purpose of this study was to identify the factors related to postpartum contraceptive use in Parakou in 2018. From a

methodological standpoint, the sampling technique allowed for a representative sample of the population of postpartum women in Parakou. A potential limitation of the study is selection bias, due to the probability of non-response or refusal to participate in the survey. To prevent such refusals and to ensure a minimum sample size, a non-response rate of 10% was included when calculating the sample size. It should be noted, however, that no causal conclusions can be drawn from the results of this study because of the instantaneous nature of cross-sectional studies. Because of the various ethical provisions put in place to ensure free and informed consent as well as the confidentiality of the data, the study remains in compliance with the rules of study in the general population. We therefore believe that the results are valid, reliable and can be generalized in Parakou.

Conclusion

Birth control is a common issue after childbirth. Based on the study results, it appears that the use of contraception in the postpartum period in the city of Parakou is low. It is therefore necessary to strengthen existing actions and improve strategies focusing on the factors identified that are associated with postpartum contraceptive use in order to increase the prevalence in Parakou.

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Disclosure

The authors report no conflicts of interest in this work.

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