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Title: Prevalence and Correlates of Disagreement between Intention to Use Postpartum Contraception and Actual Use: A Longitudinal Examination of Women's Contraceptive Preferences and Postpartum Use in Kenya

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SHORT ABSTRACT: Despite evidence linking contraceptive intentions to actual use, there is a dearth of research on women's demand and preferences for postpartum contraception. This analysis aims to estimate the prevalence and evaluate the correlates of *contraceptive discordance* immediately postpartum, defined as disagreement between a woman's antenatal intention to use an immediate postpartum method and her actual use. In-person interviews were conducted in 2017-2018 with 866 women receiving antenatal and delivery care in Kenya. Descriptive statistics were implemented to describe sociodemographic and outcome distributions. Three-quarters of women experienced *contraceptive discordance*; however, many women received a referral or actual method different than their intended method. *Contraceptive discordance* immediately postpartum is common. Forthcoming analyses will elucidate distinct types of discordance, and predictors and reasons for discordance immediately postpartum. Specifically, multilevel mixed-effects logistic regression models will estimate the prevalence of contraceptive discordance immediately postpartum, adjusting for covariates at the individual, partner, service-delivery and facility levels.

EXTENDED ABSTRACT

Background

Contraception is important for preventing unintended pregnancies in the postpartum period. Pregnancies that occur within the first six months after birth are defined by heightened risk of adverse maternal, neonatal, and infant health outcomes, as compared pregnancies conceived later in the postpartum period.^{1–9} In low-resource countries where access to health care is limited, the postpartum period is a time when many women access care, making it a unique window of opportunity for contraceptive counseling and services. Although most women want to delay or prevent pregnancy within the year following birth, little is known about how women's antenatal contraceptive preferences relate to actual use in the postpartum period.^{10,11}

Although research on contraceptive use dynamics has advanced considerably in the last decade, there has been limited focus on the level and nuances of women's demand for postpartum contraception.^{12,13,10} This gap inhibits the potential of programs focused on reducing unmet need through postpartum contraceptive counseling and services. Assessing women's contraceptive preferences and experiences, including what methods they want to use (if any) and what methods they actually receive, is important for understanding the ways contraceptive intentions influence postpartum contraceptive use. Investigation of postpartum contraceptive dynamics and women's preferences for certain methods may shed light on reasons why unmet need for postpartum contraception remains a challenge. To date, only two studies have explored this discrepancy between intention to use and actual use postpartum: a study in Brazil¹² and one in the United States¹⁴.

Objective

This study aims to estimate the prevalence and evaluate the correlates of *contraceptive discordance* immediately postpartum, defined as disagreement between a woman's antenatal contraceptive intention to use an immediate postpartum method and her actual use, using longitudinal, quantitative data collected from women receiving antenatal and delivery care in facilities throughout Kenya.

Methods

This analysis uses data from the Post-Pregnancy Family Planning (PPFP) Choices Study, a quasi-experimental longitudinal study implemented by Jhpiego in 22 facilities across two counties in Kenya. PPFP Choices aims to evaluate the impact of a multifaceted facility-based intervention on postpartum contraceptive counseling and services provided to pregnant and postpartum women receiving care in facilities located in the intervention or control county. Women were eligible for study participation if they had a gestational age ≥ 28 weeks and had received antenatal care (ANC) at one of the 22 study facilities. Women who provided informed consent were enrolled in the study following ANC and were subsequently interviewed after antenatal care (ANC) and labor and delivery (L&D), and at six months postpartum.

Trained research assistants implemented face-to-face interviews in local language. All data were collected in REDCap; analyses were conducted in Stata 15. Study instruments and procedures were approved by the Institutional Review Board at Johns Hopkins University Bloomberg School of Public Health and Kenya Medical Research Institute (KEMRI). To date, a total of 3,678 and 866 women have completed ANC and L&D interviews, respectively. While data collection is ongoing, this analysis included the 866 women who completed both interviews. Attrition analyses based on completed gestational age >42 weeks revealed that women completing both interviews are comparable to those lost to follow-up; further examination of this attrition is being investigated.

The main outcome, *contraceptive discordance*, was defined as disagreement between a woman's antenatal contraceptive intention and her use immediately postpartum. Discordance was defined as both binary and categorical to explore variation in estimates produced by measures and nuances of these definitions. As a binary outcome, women were categorized as *discordant* if they 1) did not receive the method they intended to receive; 2) received no method and intended to use a method; or 3) received a method and intended to not use a method. As a categorical outcome, women were categorized as *concordant* (intended to use no method and using no method; intending to use a method and using that method); *discordant leading to a less effective method*; or *discordant leading to a more effective method*. Descriptive statistics were conducted to identify sociodemographic characteristics of the sample and assess distributions of outcomes.

Forthcoming Analyses: Multilevel mixed effect logistic regression models will be constructed to estimate the prevalence and evaluate the correlates of contraceptive discordance. Among women experiencing discordance, reasons for discordance immediately postpartum will also be examined. Covariates at the *individual* (age, education, employment, gravidity), *partner* (marital status, employment, cohabitation, support at ANC), *service-delivery* (provider type at ANC and L&D, counseling on contraceptive methods), and *facility* (private/public status, delivery volume, new ANC volume, facility level, county) levels will be included and examined in all models. A random intercept for facility will be included to account for clustering of women within facilities.

Preliminary Results

The characteristics of women in this analysis are presented in Table 1. The mean age was 25, ranging from 15-42. About one-third of women completed secondary education or higher, and an equal proportion were employed. The majority of women were married or in union (83%), and the mean number of children ranged from 2.57 in Kilifi to 1.82 in Meru. While fewer women in Kilifi than Meru had ever used contraception (56 vs. 63%, respectively), the proportion of women who reported the current pregnancy was unintended was comparable (40% vs. 42%, respectively). When interviewed at ANC, 75.6% of women indicated they planned to initiate an immediate postpartum contraceptive method before leaving the facility; however, only 15.4% of all women

received a method immediately postpartum, 7.2% received referrals, and 5% were asked to return to the facility at a later date. This discrepancy in antenatal intentions and actual use immediately postpartum resulted in three-quarters (74.9%) of women experiencing *contraceptive discordance*. The proportion of women who experienced discordance varied considerably by the method they intended to use (Table 2). While many women ultimately received different methods than they intended to use, nearly half (48%) of the 653 women who intended to use a method at ANC left the facility post-delivery without a method, referral or plan for receiving a method in the future.

Preliminary Implications and Future Analyses

Results indicate that the experience of *contraceptive discordance* immediately postpartum among women in Kenya is common and varies by method desired. Additional analyses will explore the nuances of discordance by first assessing it as a categorical variable and then using multilevel mixed-effects logistic regression models to examine predictors of this outcome. I will also investigate reported reasons for discordance (i.e. why women did not receive the methods they intended) to elucidate the factors shaping this experience at the individual, partner, service-delivery, and facility levels. While these results are preliminary, this information highlights the difficulty that contraceptive programs may face when trying to estimate demand for methods; despite reporting intention to use one method, multiple factors may influence changes in women's actual use of methods immediately postpartum. Further investigation of contraceptive discordance is important to understanding postpartum contraceptive dynamics, reducing unmet need, and preventing unintended pregnancy in the postpartum period.

Characteristic	N (%)		
	Total (n=866)	Kilifi (n=570)	Meru (n=296)
Age			
15-19	168 (19.40)	89 (15.61)	79 (26.69)
20-24	295 (34.06)	203 (35.61)	92 (31.08)
25-34	343 (39.61)	238 (41.75)	105 (35.47)
35-49	60 (6.93)	40 (7.02)	20 (6.76)
continuous (mean(SD))	(24.9(5.73))	(25.17(5.59))	(24.43(5.98))
Schooling level			
None	123 (14.22)	109 (19.12)	14 (4.73)
Primary	466 (53.87)	284 (49.82)	182 (61.49)
Secondary	174 (20.12)	104 (18.25)	70 (23.65)
Post-secondary	102 (11.79)	73 (12.81)	29 (9.80)
Marital status			
Not in union	80 (9.25)	48 (8.42)	32 (10.81)
Currently married	719 (83.12)	481 (84.39)	238 (80.41)
Currently in partnership, not married	66 (7.63)	41 (7.19)	25 (8.45)
Number of pregnancies in lifetime			
1-2	538 (62.27)	351 (61.58)	187 (63.18)
3-4	216 (25.00)	126 (22.11)	90 (30.41)
5 or more	109 (12.62)	93 (16.32)	18 (6.08)
continuous (mean(SD))	(2.57(1.91))	(2.75(2.16))	(2.22(1.25))
Number of living children			
0	326 (37.64)	217 (38.07)	109 (36.82)
1-2	374 (43.19)	225 (39.47)	149 (50.34)
3-4	108 (12.47)	75 (13.16)	33 (11.15)
5 or more	58 (6.70)	53 (9.30)	5 (1.69)
continuous (mean(SD))	(2.32(4.41))	(2.57(5.34))	(1.82(1.08))
Current pregnancy intention			
Now or earlier	501 (57.99)	332 (58.52)	169 (57.48)
Later or not at all	353 (40.86)	229 (40.18)	124 (42.18)
Unsure	10 (1.16)	9 (1.58)	1 (0.34)
Ever used a method of contraception			
Yes	508 (58.80)	321 (56.32)	187 (63.18)
No	355 (41.09)	248 (43.51)	107 (36.15)
Unsure	1 (0.18)	1 (0.18)	-

Method desired at antenatal care	Contraceptive discordance, N (%)	
	Discordant	Concordant
No method (n=177)	21 (11.86)	156 (88.14)
Condoms (n=7)	6 (85.71)	1 (14.29)
Breastfeeding/LAM (n=4)	4 (100.00)	-
Injectable (n=184)	169 (91.85)	15 (8.15)
Pills (n=21)	14 (66.67)	7 (33.33)
Emergency contraception (n=2)	2 (100.00)	-
Intrauterine device (n=29)	26 (89.66)	3 (10.34)
Implants (n=324)	67 (20.68)	257 (79.32)
Tubal ligation (n=13)	13 (100.00)	-
Don't know (n=82)	82 (100.00)	-

*Discordant=Woman did not receive the method pre-discharge; Concordant=Woman received her desired method, as reported at antenatal care, pre-discharge

REFERENCES

1. Wendt A, Gibbs CM, Peters S, Hogue CJ. Impact of increasing inter-pregnancy interval on maternal and infant health. *Paediatr Perinat Epidemiol*. 2012;26(SUPPL. 1):239-258. doi:10.1111/j.1365-3016.2012.01285.x.
2. Conde-Agudelo A, Rosas-Bermudez A, Castaño F, Norton MH. Effects of Birth Spacing on Maternal, Perinatal, Infant, and Child Health: A Systematic Review of Causal Mechanisms. *Stud Fam Plann*. 2012;43(2):93-114.
3. Chen I, Jhangri GS, Chandra S. Relationship between interpregnancy interval and congenital anomalies. *Am J Obstet Gynecol*. 2014;210(6):564.e1-564.e8. doi:10.1016/j.ajog.2014.02.002.
4. Shachar BZ, Lyell DJ. Interpregnancy Interval and Obstetrical Complications. *Obstet Gynecol Surv*. 2012;67(9):584-596.
5. Conde-Agudelo A, Belizán JM. Maternal morbidity and mortality associated with interpregnancy interval: cross sectional study. *BMJ*. 2000;321(7271):1255-1259. doi:10.1136/bmj.321.7271.1255.
6. Kassebaum NJ, Bertozzi-Villa A, Coggeshall MS, et al. Global, regional, and national levels and causes of maternal mortality during 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *Lancet*. 2014;384(9947):980-1004. doi:10.1016/S0140-6736(14)60696-6.
7. Conde-Agudelo A, Rosas-Bermudez A, Kafury-Goeta AC. Birth spacing and risk of adverse perinatal outcomes. *JAMA*. 2006;295(26):1809-1823. doi:10.1001/jama.295.15.1809.
8. DaVanzo J, Hale L, Razzaque A, Rahman M. Effects of interpregnancy interval and outcome of the preceding pregnancy on pregnancy outcomes in Matlab, Bangladesh. *BJOG*. 2007;114(9):1079-1087. doi:10.1111/j.1471-0528.2007.01338.x.
9. DeFranco EA, Seske LM, Greenberg JM, Muglia LJ. Influence of interpregnancy interval on neonatal morbidity. *Am J Obstet Gynecol*. 2015;212(3):386.e1-386.e9. doi:10.1016/j.ajog.2014.11.017.
10. Ross JA, Winfrey WL. Contraceptive Use, Intention to Use and Unmet Need during the Extended Postpartum Period. *Int Fam Plan Perspect*. 2001;27(1):20. doi:10.2307/2673801.
11. Keogh SC, Urassa M, Roura M, et al. The impact of antenatal HIV diagnosis on postpartum childbearing desires in northern Tanzania: A mixed methods study. *Reprod Health Matters*. 2012;20(SUPPL. 39):39-49. doi:10.1016/S0968-8080(12)39634-1.
12. Borges ALV, dos Santos OA, Fujimori E. Concordance between intention to use and current use of contraceptives among six-month postpartum women in Brazil: The role of unplanned pregnancy. *Midwifery*. 2018;56(December 2016):94-101. doi:10.1016/j.midw.2017.10.015.
13. Cleland J, Shah IH, Daniele M. Interventions to Improve Postpartum Family Planning in Low- and Middle-Income Countries: Program Implications and Research Priorities. *Stud Fam Plann*. 2015;46(4):423-442.
14. Kotha A, Chen BA, Lewis L, Dunn S, Himes KP, Krans EE. Prenatal intent and postpartum receipt of long-acting reversible contraception among women receiving medication-assisted treatment for opioid use disorder. *Contraception*. 2018;6-11. doi:10.1016/J.CONTRACEPTION.2018.08.008.