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Postpartum contraception utilization among low-income women seeking immunization for infants in Mumbai, India

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Abstract

Objective—To examine postpartum contraception utilization among Indian women seeking immunization for their infants in three low-income communities in Mumbai, India.

Study Design—We conducted a cross-sectional questionnaire of low-income postpartum women seeking immunization for their infants at three large urban health centers in Mumbai. Contraceptive utilization data was collected as part of a larger study focused on the impact of postpartum domestic violence on maternal and infant health. Descriptive, bivariate and multivariate analyses were conducted to describe and identify predictors of postpartum contraceptive utilization.

Results—Postpartum women aged 17–45 years (N=1049) completed the survey; 44.5% (n= 467) reported resuming sexual relations with their husbands. Among these women, the majority (65.3%; n=305) reported not currently using contraception. In multivariate analyses, women who did not discuss postpartum family planning with their husbands, had not used contraception previous to the recent birth, and who had experienced physical violence or forced sex were more likely to not use postpartum contraception (AORs = 1.47–1.77). Among the 162 women using contraception, the most common time to initiation of contraception was 5 weeks postpartum and the most common method used was condoms 77.8% (n=126).

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Conclusion—Contraception non-use was common among urban, low-income postpartum women in India. This study highlights the importance of developing interventions to increase use of highly effective contraceptive methods postpartum, and that spousal violence and lack of marital communication may present barriers to postpartum contraception utilization. Infant immunization may represent an opportunity for provision of contraceptives and contraceptive counseling.

Implications—This original research study is a unique contribution to the literature because it presents data regarding the non-use of postpartum contraception among women seeking immunizations for their infants in urban centers in a developing country. It also reveals barriers to not using postpartum contraception and provides data for future interventions.

Keywords

Postpartum; Contraception; Immunization; Birth-to-Pregnancy Interval

1. Introduction

Several factors influence a woman's decision on when to have another child. These factors may include her age, fertility, child care support, and economic and social circumstances. Another important factor that should be considered in timing of another pregnancy is the potential health implications. In June 2005, the World Health Organization (WHO) conducted a technical consultation on birth spacing. Participating international experts recommended birth-to-pregnancy interval of 24 months to improve maternal and child health outcomes [1]. Birth-to-pregnancy interval is defined as the time period between a live birth and the start of another pregnancy. This group of experts noted that a birth-to-pregnancy interval of less than 6 months is associated with elevated risk of maternal morbidity and mortality [1]. A birth-to-pregnancy interval less than 18 months is associated with elevated risk of infant, neonatal, perinatal mortality, low-birth weight, small for gestational age and pre-term delivery [1].

A suggested area for future research from the WHO technical consultation was to investigate effective interventions to promote birth spacing. One possible strategy to promote birth spacing is to link maternal postpartum contraception education with infant immunization [2]. A woman typically stops seeking health care from an obstetrician 6 weeks after a delivery; however women may continue to bring infants to health centers for immunizations up to 24 months after delivery. Infant immunizations therefore may provide an opportunity to educate and counsel postpartum women about birth spacing and contraception utilization.

Before programs linking postpartum contraception education and infant immunization can be implemented and evaluated, it is important to understand the nature and predictors of postpartum contraception utilization. South Asia is a region of high infant immunization coverage (84%) therefore ideal to study contraceptive utilization among women seeking infant immunization [3]. This study provides data in order to inform the design of interventions to promote postpartum contraception.

2. Materials and methods

This study utilizes data from the "Mechanism for Relations of Domestic Violence to Poor Maternal and Infant Health." This project involved a cross-sectional in-depth interview (qualitative) and survey (quantitative) data collection of women presenting for infant care at urban health centers (UHCs) in Mumbai, India. The goal of this study is to utilize the quantitative data from the larger project to specifically examine postpartum contraception utilization among Indian women seeking immunization for their infants in three low-income communities in Mumbai, India. Survey data was collected of women (aged 17–45 years) seeking immunization for their infants aged 6 months or younger at three UHCs located in slum areas of Mumbai, India—Shivaji Nagar, Bail Bazaar and Mohili village. The recruitment sites were picked based on their size (100,000 residents) and the presence of a UHC in their community. Participants were recruited and survey data was collected in the immunization clinics from August 2008 to December 2008. Following immunizations, the nursing staff asked the women if they would be interested in hearing more about the study. Interested women then provided written informed consent. Due to concerns about literacy, the consent form was read verbatim to potential participants. The researchers then conducted the 30–40 minute confidential survey in Hindi. For more details regarding the survey please see Raj et al [4]. This study and all associated documents were approved by the Institutional Review Boards of Harvard School of Public Health and National Institute for Research on Reproductive Health(via the Indian Council of Medical Research).

During the study period, 1,830 women were approached to participate in the study by a community health or outreach worker. All of the women approached were eligible to participate based on their presenting for infant vaccination within 6 months of delivery; 1,049 agreed to participate in the study. Of these, 467 reported resuming sexual relations with their husbands. Thus, the sample for analyses related to postpartum resumption of sex is 1,049, and the sample for analyses of postpartum contraceptive use is 467.

Measures

In order to assess demographic information, single item measures were used to assess a woman's age, education, age at marriage (<18 or ≥18), number of children, sex of child if the woman was currently breastfeeding. Women were also asked if they were in a joint family (living with in-laws) since this might result in pressure to have more children and may result in less contraceptive use. Assessment of physical intimate partner violence (IPV) physical abuse was also based on a single item measure that asked if postpartum physical abuse occurred since the most recent birth. Forced spousal sex was assessed by a single item measure asking the question "Did your husband use force to make you have sex when you didn't want to" for pre and post-delivery of the most recent child. Resumption of sexual relations was assessed based on participants' responses to whether or not they have had sex since delivery. If the participant reported sexual relations since delivery, then she was asked questions about contraceptive utilization. Contraceptive utilization was assessed by the following questions (1) Did you use any contraceptive method to space birth or delay pregnancy prior to the conception of this child? (2) Have you used any contraceptive method since the birth of your child? (3) How soon after delivering the baby did you start to use

contraception? (4) Which method are you using? (5) Did you and your husband talk about the topic of family planning since the birth?

Data Analysis

Descriptive statistics were conducted on all demographic indicators, postpartum sexual relations, and contraceptive use. Chi-square analyses were conducted to assess associations between demographic and socioeconomic indicators and both resumption of sexual relations and contraception non-utilization. A logistic regression model predicting contraception use was created adjusting for the following variables: age, formal education, family type, age at marriage, number of children, sex of recent child, months postpartum, breastfeeding status, discussion with husband regarding family planning in postpartum period, use of contraception prior to current child, history of spousal IPV, history of spousal forced sex, postpartum spousal IPV and postpartum forced sex. These variables including age were all categorical. Adjusted odds ratios and 95% confidence intervals were used to assess size and significance of associations. Analyses were conducted using SPSS 21.0.

3. Results

Demographic profile

Among the total sample (N=1,049), the majority of women were aged between 20 and 29 years (76.9%), and the majority (83.7%) reported having formal education. Most women (67.8%) reported marrying either at 18 years or later, and most women (61.1%) reported living in a joint family structure. Almost the entire population (95.5%) reported that they were breastfeeding at time of survey, and the majority (70.3%) reported never using contraception prior to conceiving the current child.

p=Contraception Utilization

There were 467 (44.9%) women who resumed postpartum sexual relations and 573 (55.1%) who did not resume postpartum sexual relations. Of the 467 women who reported resuming sexual relations, the majority 65.3% (n=305) reported not currently using any contraception. Table 1 depicts the socio-demographics characteristics of those women using postpartum contraception compared to those women not using postpartum contraception. Significant differences between those reporting postpartum contraceptive use and those reporting no postpartum contraceptive use were seen for age at marriage (p=0.007), discussing family planning with husband postpartum (p<0.001), using contraception prior to the conception of the current child (p<0.001), history of spousal IPV (p=0.004), and history of spousal forced sex (p=0.019). Among those not using contraception, almost 40% (n=117) married prior to the age of 18. Of those women reporting current contraceptive use, the vast majority (93.8%) reported talking to their husbands about family planning in the postpartum period. Among those women reporting no contraception, 32.8% reported a history of spousal IPV, and 18% reported a history of forced sex. Table 2 depicts frequencies for the methods of contraception reported. The most common contraceptive method reported was condoms 77.8% (n=126). Among the 162 women using contraception, the most common time to initiation of contraception was 5 weeks postpartum.

Multivariate Analysis of Postpartum Contraception

Women who reported not talking to their husbands about family planning postpartum were more likely to report not using contraception (AOR 1.73, 95% CI 1.26, 2.36). Those reporting not using contraception prior to the conception of the current child were more likely to report not using contraception postpartum relative to those who used contraception prior to the conception of the current child (AOR 1.69, 95% CI 1.17, 2.44), as were those reporting a history of spousal IPV(AOR 1.57, 95% CI 1.08, 2.27). Of note, there were no statistically significant findings for age of marriage and history of forced sex.

4. Discussion

The findings from this study document the high level of contraception non-use among postpartum women in slums in Mumbai, India. More than half the women in this study reported no contraception use up to 6 months postpartum, which puts these women at risk for short birth-to-pregnancy intervals. Maternal visits for infant immunization may present an opportunity to educate and counsel women regarding risks related to short birth-to-pregnancy intervals and the need to utilize postpartum contraception. Another important finding of this study was that among women using contraception, the most common method used was condoms which have a high typical failure rate and, therefore, is not the optimal method of contraception to use to promote longer birth-to-pregnancy intervals.

The multivariate analysis highlights areas for future interventions to improve utilization of postpartum contraception. Prior use of contraception was associated with postpartum contraception utilization which suggests that if women are educated about family planning options prior to pregnancy, this may improve their utilization postpartum for birth spacing [5]. Future interventions should also incorporate husbands since talking to husbands about family planning postpartum was associated with greater contraceptive utilization.

The multivariate analysis also highlighted that women who reported IPV had less postpartum contraception utilization. This study is an important contribution to the literature that has consistently demonstrated that violence from a male partner is related to reduction in women's ability to utilize contraception and, subsequently, greater likelihood of unintended pregnancy, but not specific to the postpartum period [6]. The connection between IPV and lack of contraception utilization is based on abusive men compromising women's sexual autonomy, i.e., their control over when or if to have sex and whether contraception will be utilized [6]. Abused women are also more likely to be subjected to coercion to become pregnant against their will, which involves involuntary contraceptive non-use [7]. This finding shows the need to include information and prevention efforts around IPV in interventions to improve postpartum contraception use.

While this study had a large sample size and yielded insightful information on this important topic, one limitation of this study is that there is not information on contraception use among the 573 women who did not answer the contraceptive questions. This is approximately half of the total sample size of 1,049. There were significant differences with respect to number of months postpartum, number of children, IPV, currently breastfeeding and having talked to husband about postpartum family planning between those reporting having resumed sexual

relations postpartum and those not. The differences in these groups are logical given the context of postpartum sexual relations. For example, women are less likely have postpartum sexual relations if they are a fewer months postpartum due to recovery after delivery. In addition, women who report IPV may be forced to have postpartum sexual relations. Another limitation of this study is that the participants were recruited from an urban slum clinic which restricts the generalizability of the study findings. However, it could be argued that these women may be at high risk for short birth-to-pregnancy interval and therefore information on this specific population is important. In addition, this study also did not delineate between progestin-only and combined oral contraceptive use. This is an important distinction since combined oral contraceptive pills are often avoided during the first 3 weeks due to possible impact on breast milk supply and a theoretical increased risk for venous thrombotic events. In contrast, progestin-only pills can be initiated immediately postpartum without these concerns [8]. A future similar study should attempt to delineate if women are using progestin-only pills or combined oral contraceptive pills.

The current study advances the state of knowledge regarding contraceptive use among postpartum women in a population at high risk for unplanned and inadequately spaced pregnancies. The current study clearly documents the lack of highly effective contraception use among postpartum women seeking immunization for their infants in India. This study also emphasizes the need to address spousal communication on family planning and IPV in efforts developed to promote contraceptive education and contraceptive use for this population in order to improve reproductive and child health.

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Table 1

Sociodemographic profiles of postpartum women living in slum communities of Mumbai, India and reporting postpartum sexual relations (n=467) based on postpartum contraception use

	TOTAL (N=467) n (%)	**Currently using contraception (n = 162) n (%)**	**Not currently using contraception (n = 305) n (%)**	**χ^2 (p-value)**
Age				
17–19	37 (7.9)	10 (6.2)	27 (8.9)	
20–24	215 (46.0)	80 (49.4)	135 (44.3)	1.890 (0.596)
25–29	142 (30.4)	49 (30.2)	93 (30.5)	
30–45	73 (15.6)	23 (14.2)	50 (16.4)	
Formal education				
Yes	386 (82.7)	141 (87.0)	245 (80.3)	3.322 (0.068)
No	81 (17.3)	21 (13.0)	60 (19.7)	
Type of family				
Nuclear	204 (43.7)	71 (43.8)	133 (43.6)	0.002 (0.964)
Joint Family	263 (56.3)	91 (56.2)	172 (56.4)	
Age of marriage				
<18	159 (34.0)	42 (25.9)	117 (38.4)	7.285 **(0.007)***
≥18	308 (66.0)	120 (74.1)	188 (61.6)	
Number of children				
1	164 (35.1)	59 (36.4)	105 (34.4)	0.696 (0.706)
2 or more	302 (64.7)	103 (63.6)	199 (65.2)	
Sex of child				
Male	222 (47.5)	79 (48.8)	143 (46.9)	0.150 (0.699)
Female	245 (52.5)	83 (51.2)	162 (53.1)	
Months postpartum				
1–2 months	178 (38.1)	59 (36.4)	119 (39.0)	0.302 (0.582)
3–5 months	289 (61.9)	103 (63.6)	186 (61.0)	
Currently Breastfeeding				
Yes	441 (94.4)	152 (93.8)	289 (94.8)	0.173 (0.678)
No	26 (5.6)	10 (6.2)	16 (5.2)	
Talked to husband about postpartum family planning				
Yes	291 (62.3)	152 (93.8)	139 (45.6)	104.902 **(<0.001)***
No	176 (37.7)	10 (6.2)	166 (54.4)	
Used contraception prior to conceiving				
Yes	153 (32.8)	80 (49.4)	73 (23.9)	31.105 **(<0.001)***

	TOTAL (N=467) n (%)	**Currently using contraception (n = 162) n (%)**	**Not currently using contraception (n = 305) n (%)**	**χ^2 (p-value)**
No	314 (67.2)	82 (50.6)	232 (76.1)	
History of Spousal IPV				
Yes	133 (28.5)	33 (20.4)	100 (32.8)	8.128 **(0.004)***
No	333 (71.3)	129 (79.6)	204 (66.9)	
History of Forced Spousal Sex				
Yes	71 (15.2)	16 (9.9)	55 (18.0)	5.523 **(0.019)***
No	395 (84.6)	146 (90.1)	249 (81.6)	
Postpartum Spousal IPV				
Yes	58 (12.4)	17 (10.5)	41 (13.4)	
No	408 (87.4)	145 (89.5)	263 (86.2)	0.869 (0.351)

* P<0.05

Table 2

Method of contraception among women who were sexually active and using contraception postpartum (n=162)

Contraceptive Method	Percentage (n)
Condoms	77.8% (126)
Oral contraception	11.1% (18)
Intrauterine Device	2.9 % (8)
Withdrawal	3.1% (5)
Sterilization	2.5% (4)
Emergency Contraception	0.6% (1)
Injections	0% (0)
Abstinence	0% (0)
Rhythm	0% (0)

Table 3

Multivariate predictors of **not using contraception** among women reporting postpartum sexual relations (n=467) in Mumbai, India

Variable	Odds Ratio (95% Confidence Interval)
Age	1.04 (0.92, 1.32)
Lack of formal education	1.27 (0.84, 1.92)
Marriage <18 years	1.23 (0.89, 1.70)
Currently Breastfeeding (ref group: no)	0.64 (0.31, 1.32)
Did not talk to husband about family planning, postpartum	1.66 (1.22, 2.25)
Did not use contraception prior to conceiving this child	1.47 (1.03, 2.08)
History of Spousal IPV	1.77 (1.26, 2.49)
History of Forced Spousal Sex	1.53 (0.98, 2.39)