Barriers to Postpartum Contraception in Texas and Pregnancy within Two Years of Delivery

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Introduction

The postpartum period has long been recognized as a critical time for women to adopt contraception; their motivation to avoid pregnancy is high and they have access to health care at delivery, and often in the initial months postpartum. Although most public and private insurance policies now cover contraception, there are important impediments to immediate postpartum access to highly effective methods (1-5). There have been calls to remove barriers such as the insurance rules that prohibit charging a separate fee for an IUD or an implant inserted in the hospital following delivery and the 30-day waiting period for Medicaid sterilization, given the risks associated with rapid repeat pregnancies(6-11).

There are, however, two important gaps in knowledge regarding the gains to be achieved by increasing access to contraception in the postpartum period. The first is that we do not know much about the demand for LARC and male and female sterilization at the time of delivery and afterwards. There is information about actual use of sterilization and LARC after delivery (12, 13), but little is known about women's preferences for highly effective methods(14), and when they would like to access them. The second unknown is the number of unintended pregnancies that could be averted by increasing access to postpartum contraception. There is retrospective information from national- and state-level data sets regarding the incidence of unintended pregnancies in the two years following delivery(13), but it is hard to know how many of these pregnancies might have been postponed or averted had the demand for highly effective contraception been met.

In this study of postpartum contraception in Texas, we addressed these questions by collecting explicit information on contraceptive preferences and the barriers women encountered in accessing their preferred method. These data enable us to provide a direct estimate of the number of births following short interpregnancy intervals that could have been averted through improved access to highly effective contraception in this setting.

Methods

We conducted a 24-month postpartum follow-up study with 403 women in one hospital in Austin, Texas. By design, the cohort included 75% patients whose deliveries were paid with public funds (e.g., Medicaid) and 25% that were paid with private insurance. In addition, to be eligible for the study, women stated at baseline that they had completed childbearing or wanted to wait at least two years before having another child.

We conducted in-person baseline interviews in the hospital immediately after delivery between April and July 2012 and contacted women by phone at 3, 6, 9, 12, 18, and 24 months after delivery. Women received $30 for participating in the in-person baseline interview and $15 for each of the follow-up interviews. To increase follow-up at the 18 and 24-month follow-up interviews, all participants were notified that those who completed the last two interviews would be entered into a drawing for one of three $100 gift cards. Follow-up rates were 94% at 3 months, 95% at 6 months, 93% at 9 months, 91% at 12 months, 86% at 18 months, and 83% at 24 months. This study was approved by the University of Texas institutional review board (#2011-11-0025).

We assessed participants' contraceptive preferences by way of direct questions posed at both the baseline and three-month interviews regarding the method of contraception the participant would like to be using at six months following

delivery. These questions were followed by a probe that asked whether they would have preferred another method if it were available at no cost. We measured latent demand for LARC and permanent methods with additional questions at the six-month interview: women who wanted no more children were asked whether they wished they had been sterilized before leaving the hospital, and if they would like their husbands to get a vasectomy. Women who had not previously expressed a preference for LARC were asked whether they would be interested in using an IUD or implant if it were offered for free or low cost (see (14) for a complete description of the measurement of contraceptive preferences).

Based on the report of current method of contraception at the sixth month interview and excluding four women who had reported a pregnancy in that interview, we identified women who were using their preferred method of contraception and those who were not. We asked the latter why they were not using their preferred method, and used the answers to classify women according to the type of barrier that had prevented them from doing so. We distinguished three types of barriers: those related insurance coverage or other financial aspects; those related to health care systems barriers such as the clinic not having the method in stock or not having signed a consent form for a Medicaid sterilization; and those related to a medical contraindication. Women who were using their preferred method but who also responded positively to questions about whether they would like to have been sterilized at the time of their last delivery, were also considered to have encountered another type of barrier, as were women who were using their preferred method but who had expressed interest in using an IUD or an implant were it available for free or at a nominal cost (and did not say they had wanted to be sterilized at the time of their last delivery). A flow chart detailing this classification is shown in Figure 1.

At each of the follow-up interviews, women were asked whether they had become pregnant, and if so, if they were will still pregnant, and if not, how the pregnancy had ended. We also asked about the contraceptive method they were using at the

time of conception, and if none, why they were not using a method. Pregnancy intentions were assessed prospectively at each interview, and retrospectively when the woman reported a pregnancy in a follow-up interview. Of the different available measures of pregnancy intentions, we ultimately chose the following criterion for an intended pregnancy: not using contraception at the time of conception, and the reason given for doing so was to become pregnant.

In this analysis, we focus on contraceptive use at the time of the six-month interview, and pregnancies conceived in the 18 months following that interview. The first question we address is whether women encountered barriers (as defined above) in accessing their preferred method of contraception, or indicated interest in a more effective method. We look at the presence of barriers by social and demographic characteristics, and also examine the type of contraception being used by women encountering different types of barriers. Here and in subsequent analyses, we classified methods used into four broad tiers constructed according to method efficacy, following *Contraceptive Technology* (16). The lowest tier, "less effective methods" (LEM), includes methods where 18 or more pregnancies per 100 women per year would be expected with a typical use: condoms, withdrawal, spermicides, sponges, fertility-based awareness methods (including the rhythm method), and abstinence. The second tier, "hormonal methods" (no women in our study were using or expressed a preference for the diaphragm) includes methods for which 6-12 pregnancies per 100 women per year can be expected with typical use: combined and progestin-only contraceptive pills, injectables, the vaginal ring, and the patch. The third tier includes highly effective long-acting reversible contraception (LARC): the implant, Copper-T IUD (ParaGard), and the levenogestrel releasing intrauterine system (Mirena IUD), while the fourth tier consists of permanent methods: female sterilization and vasectomy.

We then estimated two Cox regression models predicting the risk of conception between the six-month and the final interview (two-years after delivery). In the first, we used the type of method used at six months as the predictor, while in the

second the predictor was the type of barrier encountered. Cumulative risks of pregnancy by 9, 12, 18, and 24 months were estimated for each method/barrier group, and confidence intervals for those risks were estimated using stcurvi(15).

Finally, we classified pregnancies that were not intended according to the type of contraception being used at the interview preceding the conception as well as at the time of conception, whether the woman had experienced a barrier, and whether she had expressed demand for or interest in a permanent method or LARC.

Results

The distribution of the 381 participants at the six-month interview according to their sociodemographic characteristics is shown in Table 1. Also shown is the proportion of women in each category who encountered a barrier accessing contraception: either they were not using their stated preferred method, or they declared they would be interested in using, or would prefer to be using a highly effective method. The cohort is largely Hispanic, with 37% born in Mexico. It is also notable that more than half reported not wanting additional children at the baseline interview. The proportion of women encountering a barrier, 67% overall, showed significant variation by age, parity, relationship status, desire for additional children, and birthplace.

Table 2 shows the distribution of women in the cohort according to both the type of method they were using and the sort of barrier they encountered. Among all these women, 44% were using less effective methods, 23% were using hormonal methods, and smaller percentage used permanent methods or LARC. Among women who were using their preferred method, three quarters relied on permanent methods or LARC. In contrast, 42-74% of women who encountered barriers to using their preferred method were using less-effective methods, with 7-23% using hormonal methods.

A total of 89 women reported a pregnancy during the 24 months following delivery with 12 pregnancies having been conceived before the six-month interview. We analyzed the risk of pregnancy after the six-month interview with two Cox regression models. In the first, the type of contraceptive method used at the six-month interview was a significant predictor of the risk of pregnancy in the following months (Figure 2, panel 1). The estimated cumulative risk of pregnancy at 24 months exceeded one third for women who were using less effective methods at six months, and nearly one quarter for women who were using hormonal methods at that interview. The type of barrier women encountered in accessing their preferred method of contraception prior to the six-month interview was also a significant predictor of the risk of pregnancy in subsequent months (Figure 2, panel 2). Women who are using their preferred method at six months after delivery have a lower cumulative risk of pregnancy at 24 months following delivery than those in all the barrier groups, with the exception of the women who want no more children and wished they had been sterilized at the time of their last delivery.

Of the 89 pregnancies reported over the entire two-year period of follow-up, most were unintended. By the strictest measure of intention—reporting stopping contraceptive use in order to become pregnant—only 18 of the pregnancies were planned. Examining the contraceptive preferences of the women reporting the remaining 71 pregnancies, we found that nearly half would like to have been using a permanent method, and 87% had either said they wanted to use LARC, or would be interested in using an implant or an IUD were it available for free or at minimal cost. The first panel of Table 3 shows these proportions for the women who had been using a hormonal method, a less effective method, or no method at the start of the interval in which they became pregnant, while the second panel shows the preferences according the method that they were using at the time of conception. About half of the women who were using a less-effective or no method said they would like to be using a permanent method, and over 85% had expressed a preference for or interest in LARC. Five women who reported pregnancies reported using a long-acting method or having been sterilized at the time of

conception.

Discussion

In this two-year follow-up study, 89 of the initial cohort of 403 women got pregnant. The large majority of these pregnancies were unintended. Because we had collected prospective data on method preferences, as well as data on current use, we were able to determine that most of the pregnancies occurred to women who were using a less effective method or no method, but who would have preferred to be using a highly effective method of contraception. We also found that few of the women who were using a highly-effective method of contraception at six months postpartum became pregnant in the next year and a half.

By asking women about why they were not using the method they had previously said they would like to be using six months after delivery, we were able to indirectly assess the barriers the women in this study faced accessing contraception. This assessment was further supplemented by additional probes addressed to women who were not using a highly-effective method regarding their interest in LARC or permanent methods, which permitted further indirect inferences regarding barriers. The resulting classification of women according to the barriers they had encountered in the six months after delivery showed both that women who had encountered barriers were, in most cases, using much less effective contraception than the women who were using what was clearly their preferred method. Moreover, with the exception of women who were using their preferred method but who wished they had been sterilized at the time of their delivery, women who encountered barriers, were more likely to become pregnant in the next year and a half.

We are unsure whether the lower risk of pregnancy among women who wanted to be sterilized at delivery may have resulted from the more effective use of hormonal and barrier methods by women with high motivation to avoid pregnancy, or from a

greater incidence of unreported induced abortion in this group. At first glance, the finding that women who would like to have been sterilized at the time of delivery had lower rates of pregnancy than other women contradicts the results from another study conducted in Texas (16), but that study referred only to live births and was based on hospital records. Finally, we were surprised by the number of women reporting a pregnancy while using a long-acting method, as well the pregnancy reported by a woman who said she had been sterilized. However, without access to their clinical records, we were not able to corroborate the reported procedures.

An important limitation of this study is that it is based on relatively small sample of women who reside in a particular part of the country. The sample is largely Latina, and is drawn from a community that experienced a drastic reduction in subsidized services due to cuts in the funding for family planning enacted by the 2011 Texas state legislature(17, 18). However, the low use of LARC methods after delivery is characteristic of the United States as a whole(13). A second limitation is that abortion is likely to be under-reported in the telephone follow-up interviews.

This study does, however, offer an important proof of concept, showing that it is feasible to collect prospective data on contraceptive preferences; and, in turn, that these preferences may be used to identify pregnancies that could have been averted if women had access to all methods of contraception at no cost. In particular, this kind of analysis highlights the role that increasing access to postpartum female sterilization, and removing the barriers to immediate postpartum insertion of IUDs and implants could have in reducing unintended pregnancies in the two years after delivery. Births averted by publicly subsidized family planning programs are typically estimated by comparing current contraceptive use with what women would be using in the absence of a subsidy(19-21). The hypothetical counterfactuals usually involve strong assumptions, and do not allow estimates of the impact of any potential expansion or improvement in care. The type of analysis used in this study provides an improved basis for making such estimates.

Conclusions

In this study, a large percentage of the births occurring at short intervals postpartum could have been prevented or postponed if women had had access to their desired long-acting and permanent methods.

Acknowledgements

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Figure 1. Type of barriers encountered in access to contraceptive preferences

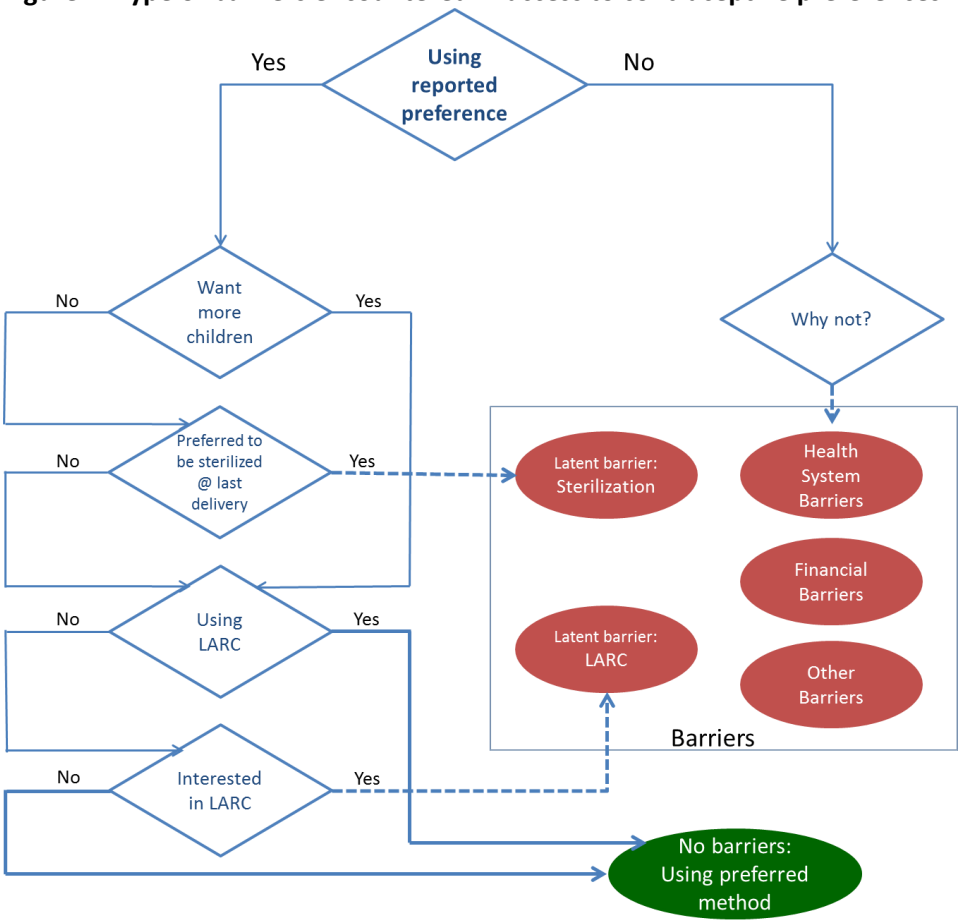


Table 1. Distribution of Women at Six Months Interview by Characteristics, and Experience of a Barrier to Accessing Preferred Method of Contraception

Demographic characteristics	All (%)		No Barrier*		Barrier* (%)		χ^2
N	381	(100)	126	(33)	251	(67)	
Age at baseline							
18-24	120	(30)	26	(22)	93	(78)	
25-29	111	(28)	31	(28)	77	(69)	
30-34	92	(23)	38	(41)	54	(59)	
35+	58	(14)	31	(53)	27	(47)	0.000
Parity at baseline							
One	112	(28)	36	(32)	76	(68)	
Two	114	(28)	26	(23)	86	(75)	
Three or more	155	(38)	64	(41)	89	(57)	0.006
Relationship status at baseline							
Married	197	(49)	74	(38)	122	(62)	
Cohabiting	116	(29)	39	(34)	76	(66)	
Neither married nor cohabiting	67	(17)	13	(19)	52	(78)	0.031
Insurance status at baseline							
Private	97	(24)	33	(34)	63	(65)	
Public	284	(70)	93	(33)	188	(66)	0.819
Want more children at baseline							
No	196	(49)	45	(23)	148	(76)	
Yes (in 2 years or more)	185	(46)	81	(44)	103	(56)	0.000
Annual Family Income							
<10,000	87	(22)	25	(29)	60	(69)	
10,000-19,999	98	(24)	31	(32)	65	(66)	
20,000-34,999	72	(18)	30	(42)	42	(58)	
35,000-74,999	54	(13)	13	(24)	41	(76)	
75,000 or more	58	(14)	23	(40)	35	(60)	0.199
Education							
< High School	137	(34)	47	(34)	88	(64)	
High School	105	(26)	34	(32)	70	(67)	
> High School	138	(34)	45	(33)	92	(67)	0.922
Birthplace							
United States	212	(53)	57	(27)	152	(72)	
Mexico	143	(35)	58	(41)	84	(59)	
Other	26	(6)	11	(42)	15	(58)	0.018
Ethnicity							
Hispanic	240	(60)	83	(35)	154	(64)	
White	37	(9)	7	(19)	29	(78)	
Black	88	(22)	28	(32)	60	(68)	
Other	16	(4)	8	(50)	8	(50)	0.138

*Excluding 4 women who knew they were pregnant at 6mo

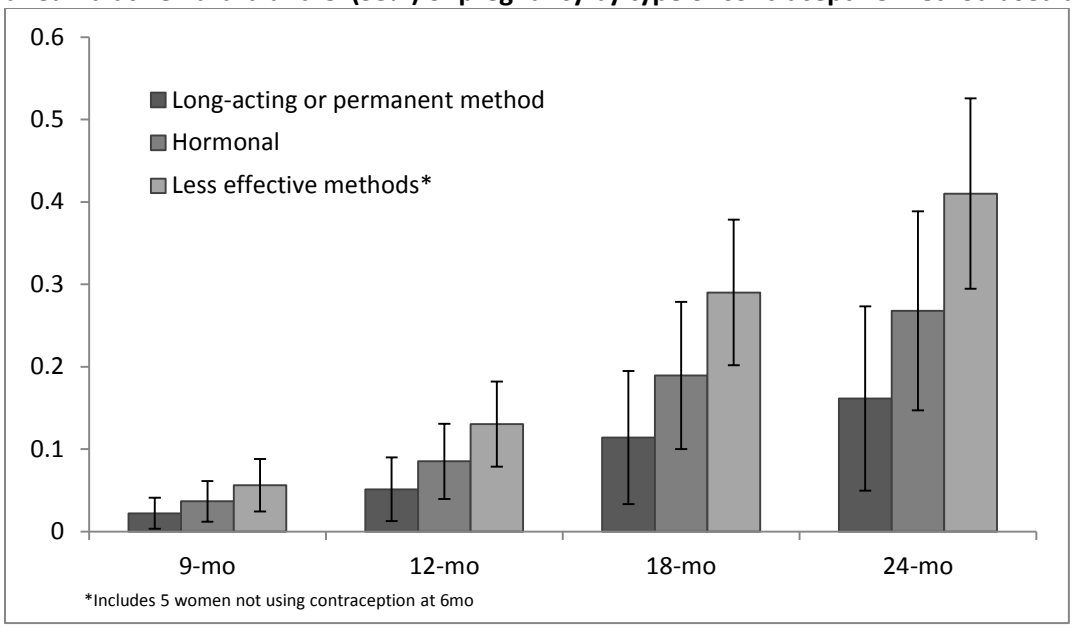
Table2. Current method at 6 months by barrier*

	Sterilization n(%)	LARC n(%)	Hormonal n(%)	Less effective methods n(%)	No method n(%)	Total n(%)
Using preferred method	66 (52)	28 (22)	16 (13)	16 (13)	0 (0)	126 (100)
Health system barriers	0 (0)	1 (3)	7 (23)	23 (74)	0 (0)	31 (100)
Financial barriers	1 (1)	4 (5)	23 (29)	48 (62)	2 (3)	78 (100)
Latent barrier: sterilization	0 (0)	14 (31)	12 (27)	19 (42)	0 (0)	45 (100)
Latent barrier: LARC	0 (0)	0 (0)	15 (35)	27 (63)	1 (2)	43 (100)
No barrier but not using preferred method	0 (0)	6 (11)	14 (26)	32 (59)	2 (4)	54 (100)
Total	**67 (18)**	**53 (14)**	**87 (23)**	**165 (44)**	**5 (1)**	**377 (100)**

*Excluding 4 women who knew they were pregnant at 6mo

Figure 2. Estimated cumulative risk of pregnancy

a. Cumulative hazard and CI (95%) of pregnancy by type of contraceptive method used at 6mo



b. Cumulative hazard and CI (95%) of pregnancy by type of barrier encountered

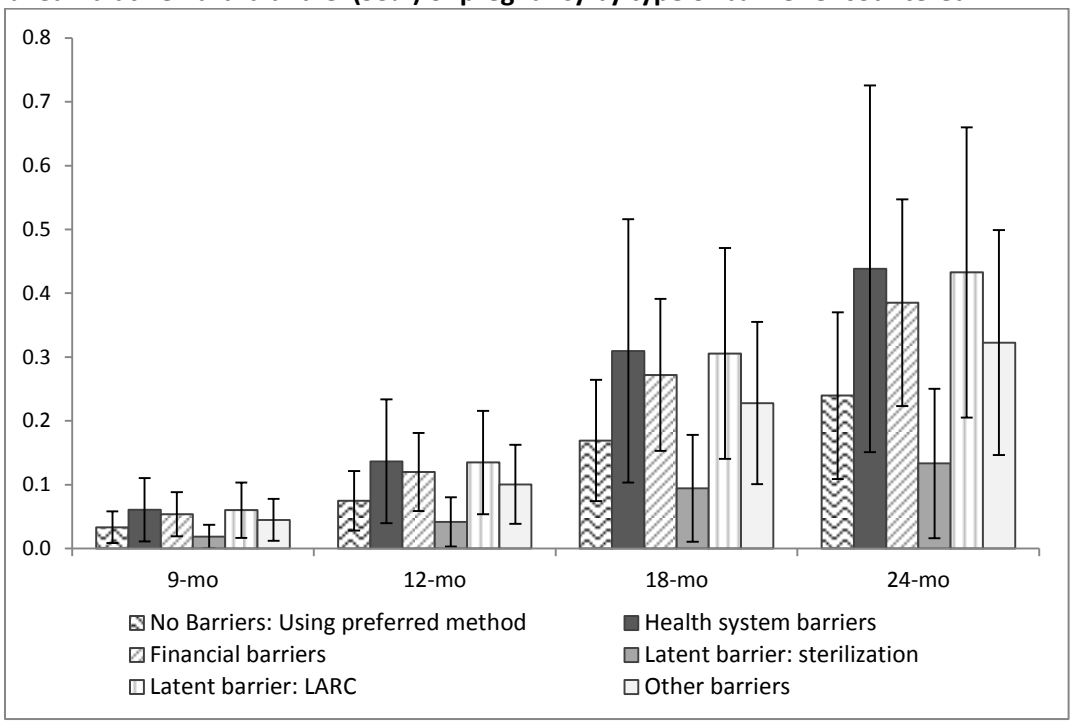


Table 3. Interest in LARC or Sterilization among those who got pregnant unintentionally

	Ever pregnant	Want sterilization n(%)	Want LARC n(%)
Total	**71**	**30 (46)**	**62 (87)**
Method used at start of the spell			
Hormonal	10	3 (30)	9 (90)
Less effective methods	47	24 (51)	41 (87)
None	7	3 (43)	6 (86)
Method used at conception			
Hormonal	15	6 (40)	14 (93)
Less effective methods	43	22 (51)	37 (86)
None	8	4 (50)	7 (88)