Fertility Intentions and Contraceptive Switching in Urban Uttar Pradesh India: Results from Longitudinal Analysis

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Introduction

This study examines patterns of contraceptive switching and discontinuation as they relate to fertility intentions among women in urban Uttar Pradesh, a state that has low levels of development and high fertility, compared to other states in India. Because of an historical emphasis on female sterilization, use of reversible contraceptive methods is only gradually on the upswing in India. By examining how fertility intentions are associated with contraceptive switching and abandonment, this study aims to shed light on the fertility-regulating behavior of women, a critical factor in reducing unintended fertility.

The validity of fertility intentions and how well they can predict subsequent reproductive behavior has received considerable attention in the demographic literature (Hayford 2009). Although intentions are not perfect predictors of subsequent behavior, the broad consensus is that there is remarkable convergence between the two (Dharmalingam et al. 2014), at least at the aggregate level. In general, empirical evidence suggests that intentions are better predictors of behavior in the short-term – although some studies show fluctuations even in short time spans (Sennott and Yeatman 2012). Women with more certain intentions are better able to meet those plans than are women with ambivalent desires or intentions (Withers et al. 2011). Using a life course perspective, dynamic fertility theories conceptualize intentions as a "moving target" wherein people alter their preferences as a response to changing life and social circumstances (Morgan 2001). However, a major limitation of this branch of research is that most of these studies tend to use cross-sectional data. Among the studies that use longitudinal data, the majority of them tend to focus on how family size preferences change over time with respect to life events (Yeatman et al. 2013) or how they predict subsequent childbearing (Speizer et al. 2013; Tan and Tey 1994).

Of course, intentions and behaviors are not always aligned; this may relate to ambivalent intentions and/ or improper or ineffective contraceptive use. About one-half of births and over a third of all pregnancies are unintended in the United States (Mosher et al. 2012). Globally, about 40 percent of all pregnancies are unintended. Aside from the intrinsic importance of women being able to meet their reproductive desires, unintended fertility has significant public health ramifications for infant and maternal health (Gipson et al. 2008).

Despite the abundance of research linking fertility intentions to subsequent childbearing behavior, few studies examine how fertility intentions influence birth control behavior. However, as contraceptive use becomes more widespread, and individuals increasingly consciously choose when and how many children to have, it is particularly important from a theoretical and policy standpoint to understand how fertility intentions relate to both subsequent fertility *and fertility-regulating behavior.* In contemporary societies with moderate levels of contraception, a substantial portion of unintended fertility is due to method-related issues (such as incorrect use of a method, use of ineffective methods, abandonment, and improper switching of methods). It goes without saying that a nuanced understanding of fertility intentions is of little use if women who would like to stop or space childbearing are not using appropriate or effective contraception to help them achieve their preferences. Therefore, developing a better picture of how fertility intentions relate to contraceptive use should inform efforts to increase effective contraceptive use, thereby reducing unintended fertility.

Data and Analytical Plan

This study will use the recently available longitudinal data from six cities in Uttar Pradesh, India collected by the Measurement, Learning & Evaluation Project to evaluate the Urban Health Initiative, implemented by FHI360 with funding from the Bill & Melinda Gates Foundation. The program implemented a variety of demand and supply interventions starting in April 2010. Baseline data were collected in early 2010 from a representative sample of 17,643 married women ages 15-49 years from the six cities. For program implementation, the initial intervention cities were Agra, Allahabad, Aligarh and Gorakhpur; Moradabad and Varanasi serve as delayed intervention cities for the evaluation. Mid-term data were collected in 2012 from half of the baseline sample of women from the initial four intervention cities. The endline survey was fielded and completed in 2014, in which 14,043 women from all six cities were followed up and re-interviewed to measure program exposure and changes in childbearing preferences and behavior in the four-year follow-up period. Because questions on fertility preferences were not asked for women who were sterilized at baseline, the analyses will use the sample of non-sterilized women at baseline (n=9220).

This study makes use of the data on fertility preferences and contraceptive use from the baseline and endline surveys. Additionally, the contraceptive calendar collected at endline provides detailed information on patterns of switching and abandonment over a five year period. Controlling for the endogeneity of intentions, we will use discrete-time event history hazard regression models to examine the impact of a woman's baseline fertility intentions on the likelihood of her switching or discontinuing contraceptive use in each month during a five year calendar. The key independent variables are baseline reports of respondents' fertility intentions for another child measured as wanted now, wanted later and not wanted. A wide set of socio-demographic characteristics normally associated with contraceptive use are available in the surveys which will be used as controls in the analysis.

Table 1 presents the descriptive statistics of key sociodemographic characteristics of respondents at baseline. Table 2 shows the summary of method switching and discontinuation among respondents between baseline and endline, by respondents' characteristics. Across demographic characteristics, we see considerable switching between baseline and endline, particularly among non-users or users of traditional methods. Table 3 shows baseline reports of fertility intentions for another child (wanted now, wanted later, not wanted) by method switching/ discontinuation at endline. Overall, we see considerable heterogeneity in the implementation of preferences through contraceptive behavior. In analyses not shown, we find that a substantial proportion of women who used any traditional or modern method (other than sterilization) at baseline have discontinued use by endline. Accordingly, we propose to examine the change in contraceptive behavior as a function of fertility preferences and discuss implications from this study for future research and policy.

Table 1. Demographic characteristics of respondents* at baseline

	Percent**	Number
Age		
15-19	3	287
20-24	19	1759
25-29	26	2391
30-34	22	2013
35-39	16	1511
40-44	10	913
45-49	4	345
Religion		
Hindu	75	6918
Muslim	24	2211
City		
Agra	23	2108
Aligarh	14	1318
Allahabad	18	1686
Gorakhpur	15	1380
Moradabad	10	960
Varanasi	19	1767
Education		
None	27	2521
Primary	9	835
Secondary	37	3433
Higher secondary	26	2425
Wealth quintile		
Lowest	15	1378
Second	18	1648
Middle	20	1840
Fourth	24	2173
Highest	24	2181
Children ever born		
0	11	995
1	21	1904
2	29	2708
3	16	1521
4	9	881
5+	13	1211
Number of living children		

0	11	1060
1	22	2014
2	30	2809
3	17	1609
4	9	842
5+	10	885
Total	100	9220

Table 2. Contraceptive method switching by women's baseline characteristics between baseline and endline

Percent distribution of women's contraceptive method switching between Baseline and Endline surveys by baseline characteristics. India 2010,2014.

	Non-user/ Traditional method to Non-user/ Traditional method	Non-user/ Traditional method to Modern method	Modern method to Non-user/ Traditional method	Modern method to Modern method	Total
Age					
15-19	64	26	5	5	100
20-24	43	28	11	17	100
25-29	32	27	13	28	100
30-34	33	19	14	34	100
35-39	40	13	19	27	100
40-44	59	8	24	8	100
45-49	69	5	23	4	100
Education					
No education	54	21	12	13	100
Primary	45	20	16	19	100
Secondary	39	21	15	26	100
Higher secondary	28	20	18	33	100
Wealth Index					
Lowest	51	25	11	13	100
Second	48	22	12	18	100
Middle	45	19	14	23	100
Fourth	37	19	18	27	100
Highest	30	21	18	31	100
Residence					
Slum	43	23	13	21	100
Non-slum	43	23	13	21	100

City					
Agra	42	19	17	22	100
Aligarh	45	21	13	20	100
Allahabad	41	20	15	24	100
Gorakhpur	44	21	15	20	100
Moradabad	32	22	14	31	100
Varanasi	38	21	16	25	100
Total Percent	41	21	15	23	100
Number of women	3822	2010	1274	2114	9220

* Modern methods include male and female sterilization, OCP, IUCD, DMPA, condoms, implants, EC, dermal patch, diaphragm, spermicide, LAM and SDM

** Traditional methods include periodic abstinence, rhythm and withdrawal

*** A small number of women had missing information on education at Baseline

Table 3. Baseline intentions and Contraceptive switching between baseline and endline

Baseline intentions	Nonuser/ Traditional to Nonuser/ Traditional**	Nonuser/ traditional to Modern*	Modern to Nonuser/ Traditional	Modern to Modern	Number of women	Total %
Want now	75.38	23.18	0.62	0.82	970	100
Want later	39.31	26.63	13.57	20.49	2102	100
Want no more	37.25	20.68	15.71	26.35	6148	100
Number of women	3822	2010	1274	2114	9220	

* Modern methods include male and female sterilization, OCP, IUCD, DMPA, condoms, implants, EC, dermal patch, diaphragm, spermicide, LAM and SDM

** Traditional methods include periodic abstinence, rhythm and withdrawal

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