Stopping Too Late: Education Differentials in Unmet Need in India

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This paper explores the influence of women's education on having a particular category of unmet need (unmet need for spacing and stopping, met need for spacing and stopping, no need). Women's education is one of the most well-established factors linked to fertility. Although we have evidence on the connections between women's education and her fertility behavior and outcomes, we know much less about how women's education influences unmet need. This paper attempts to fill that gap by studying education differentials in unmet need over time in India. We use data from the National Family Health Surveys to decompose total unmet need into its components of met and unmet need for spacing and stopping respectively. Preliminary analyses suggest a strong educational gradient in unmet need for spacing and stopping. The complete paper will assess this relationship using multivariate analyses, explore some of the reasons thereof, and consequences of these differentials.

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Extended Abstract

Introduction and Background

In 2005, about one in three births were unwanted in India (IIPS and Macro International 2007). If unwanted fertility were eliminated in India, then the country would have achieved replacement fertility as early as 1998 (IIPS and ORC Macro 2000). The high level of unwanted fertility points to the imperfect means of fertility regulation available to women and couples. Underlying efforts to reduce unwanted fertility through better fertility regulation is the unstated assumption that reduction of unwanted fertility through better use of contraceptives is preferable than its reduction through the use of induced abortions (Casterline and Sinding 2000; Bogue 1974). Recent data from the NFHS 3 shows that about a third of currently married fecund women express a desire for no more children; however, 45 percent of them are not currently using any form of (modern or traditional) contraception. Thus there is a clear discrepancy between stated preferences and actual behavior. This discrepancy has occupied the interest of demographers for several decades and is measured in the form of the unmet need for family planning and reproductive health services (Bogues 1974; Westoff 1978; Bongaarts and Bruce 1995; Jain 1999; Bankole and Westoff 1998).

Unmet need is a well-studied and critiqued topic. At the heart of the concept of unmet need is the notion that women who want no more children (or in the case of pregnant and amenerrhoic women, did not want to become pregnant) will use contraceptives to either space or stop future births. If there is no discrepancy in the intention-behavior matrix, then a woman has no unmet need. This definition implies a two-step process: in the first step, women who are satisfied with their current family size recognize that they do not want any more children. In the second step, they use contraceptives to space or stop childbirths. A large part of the existing literature on unmet need examines the validity of the concept and the appropriateness of its measurement (see Casterline and Sinding 2000 for a review; Dixon-Mueller and Germain 1992; Pritchett 1994). Other research on unmet need focus on its relation to the demand for contraception, and for family planning services (Bongaarts and Bruce 1995).

Unmet need has encountered several criticisms since the time it was conceptualized, but it is still widely used as an indicator of the demand for family planning services and of the latent desire to reduce fertility below what is currently possible. Notwithstanding these criticisms, unmet need retains its preeminence along with contraceptive prevalence rate (CPR) for population and reproductive health programs in developing countries. While the broad definition of unmet need remains the same, its measurement has gone through a series of iterations. Indeed, efforts to improve the measurement of unmet need have become even more significant because of its salience to population programs, including its inclusion into the UN Millenium Development Goals in 2008. The algorithm to measure unmet need has gone through several iterations, the latest one implemented by the DHS was as recent as in 2009 (for details, Bradley et al 2012). This revision is an effort to standardize measurement across countries and surveys by simplifying some of the calculations.

Among the many factors linked to fertility behavior and outcomes, women's education stands out for its crucial influence on reproductive outcomes (Bongaarts 2003; Dreze and Murthi 2001). When women are educated, they are more likely to have a greater degree of control over their reproductive career, particularly with regard to the extent, type and effectiveness of contraceptive use (Jejeebhoy 1995). In India, data from NFHS show that the proportion of women not using any contraception is lowest among less educated women (i.e., those with no education or primary school education). As late as 2006, half of all women with no schooling did not use any form of contraception. The same subset of women also had the highest per cent of those who want *no more* children. Further, whereas unwanted fertility has declined by over a third among educated women between 1993 and 2006, it has increased by a third among less educated women in the same period. For the vast majority of less-educated women, female sterilization is the first and only form of contraception after a string of wanted, mistimed and unwanted pregnancies. Taken together, it is clear that less educated women do not have the same level of access to better contraception than educated women. From the viewpoint of population policy, it is important to understand these differences so that viable options for contraception to either space or stop births can be offered to women at lower parities who have either met or are close to meeting their family size desires.

However, although we have evidence on the connections between women's education and her fertility behavior, we know much less about how women's education influences various categories of unmet need. For instance, does unmet need for spacing have an educational gradient? Do less educated women rely more heavily on stopping rather than spacing strategies? Another relatively understudied area appears to be the change over time in unmet need for spacing and stopping and by educational categories.

In this paper, I attempt to document levels and trends in unmet need for family planning services among key educational subgroups of women in India and its states. Accordingly, I decompose estimates of met and unmet need by the need to space and stop births for different educational subgroups at two time points, 1992-3 and 2005-6. In order to understand the effect of women's education on the likelihood of her being in one of the need categories, I plan to estimate multinomial logistic regressions of education and need in 1992-3 and 2005-6 (net of other characteristics). Because the contraceptive mix in India shows a heavy reliance on female sterilization, I examine the high levels of fertility over stated desires among women who have been sterilized, and show additional analyses to demonstrate the spacing needs of women, by their level of education.

I expect to find that less educated women are more likely to use stopping methods and more likely to have unmet need for spacing, net of sociodemographic characteristics and state heterogeneity. I also expect to find that among women who are sterilized, the less educated have a greater likelihood of having more children than they actually desire before getting sterilized.

Data and Analytical Approach

I use the first and last waves of data from the Indian Demographic and Health Surveys (DHS), also referred to as the National Family Health Surveys (NFHS) in India, collected in 1992-93 and 2005-6. The NFHS were initiated in the early 1990s and are nationally representative; they provide important demographic and health information at the national and state-level in India. A multi-stage stratified random sampling procedure was employed to obtain reliable samples

within each state and at various geographic levels (states, urban/ rural, metropolitan cities), and therefore, national sample sizes for each survey were unusually large (IIPS 1995).

Both waves of the survey collected detailed demographic data on desired family size, fertility preferences, birth histories, contraceptive use, as well as household economic conditions. We use the recently revised estimates of unmet need provided by DHS. Our analytical sample is restricted to currently married fecund women age 15-49 in both waves: 71,924 women in 25 states in 1992-93, and 76,187 women in 29 states in 2005-06. To ensure uniform comparisons across states over time, I merge the states that were split in 2005-6 (Uttaranchal with Uttar Pradesh, Jharkhand with Bihar and Chattisgarh with Madhya Pradesh). In addition, I also merge the small states in the North East to ensure uniformity of sample sizes, so that the analytical sample consists of respondents from 20 states at the two time points.

My analytical approach is first to perform a series of descriptive analyses to understand the nature of need (met need for spacing, unmet need for spacing, met need for stopping and unmet need for stopping) among fecund married women by their level of education. Accordingly, I present tabulations of the distributions of women in the different need categories by education. I also present these tabulations for other key socio-demographic characteristics. Following Devi et al (1996), this includes age of the respondent, husband's education, number of living children, number of living sons, loss of child(ren), residence in urban or rural areas, religion, wealth quintile and exposure to family planning messages on radio and television.

Next, for each time point, I will examine the influence of women's education on need categories (met need for spacing, unmet need for spacing, met need for stopping and unmet need for stopping, no need), with no need as the reference, controlling for key sociodemographic characteristics. I will do this using multinomial logistic regression controlling for the heterogeneity between states by employing state fixed effects models.

Descriptive results

Table 1 shows some of the descriptive results. Overall, three-fourth of currently married fecund women had a need for family planning (met+unmet) in 1992-3 and about four-fifths had a need in 2005-6. Total unmet need has fallen in this time period from 23% to 16%. Only 14% of contraceptive users were using contraception for spacing purposes in 1992-3, and this fell by a half to 7% in 2005-6. In 1992-3, we note that women with no education have lower total need, but considerably higher levels of unmet need than those with high school education. This situation has changed in 2005-6, so that women in all categories of education have the same level of total need, but less educated women have higher unmet need than better educated women.

Table 2 shows the components of unmet need in greater detail. Here, we see that spacing needs of women are far smaller than their stopping needs, and most of the observed decline in total unmet need is due to the decline in the need for spacing. Out of the total unmet need, over 60% was due to unmet need for spacing in 1992-3, whereas it declined to 44% in 2005-6 (Col. E in Table 2). Further, the proportion of spacing need that is unmet has also declined considerably from 74% to 54%, but this proportion varies widely by level of education in both time periods (Col. G). However, it is evident that unmet need for spacing decreases with the level of education. In contrast, a much lower proportion of stopping need is unmet in both periods, and the difference in unmet need for stopping is much lower between education categories (Col. H). The heavy reliance on sterilization is also evident from the table – out of the total need, the

proportion of the need for stopping increased from 74% to 84%, and most of the increase is concentrated among less educated women (Col. B).

That less educated women opt for stopping methods after exceeding their fertility preferences is evident in Table 3. In both time periods, we see that the proportion of women who meet their DFS and then get sterilized is lower in the lower education categories, increasing significantly among women with a high school education. However in the recent period, we see that greater proportions of the less educated get sterilized after exceeding their stated DFS, suggesting the need for spacing methods when they were at lower parities. It is also important to note that a smaller proportion of less educated women are able to exactly meet their DFS before getting sterilized. The differences in unmet need evident in these tables by education summarize our main argument. The overarching goal of this paper is to describe and explain the educational differentials in unmet need for spacing and stopping in India. Together with the multivariate analyses planned for the rest of the paper, these insights should advance our understanding of the educational differentials in method use and the challenge of reducing unwanted fertility in contemporary India.

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Table 1. Total need for family planning

Panel A: 1992-3

	Unmet-Spacing	Unmet-Stopping	Met-Spacing	Met-Stopping	Tot need	Tot met	Tot unmet	Tot spacing	Tot stopping
India	14	9	5	46	74	51	23	19	55
Respondent's education									
No education	14	11	2	41	68	43	25	17	52
Primary	13	8	4	54	79	58	20	17	62
Secondary	14	7	9	48	79	57	21	23	56
High school	9	7	15	52	83	68	16	24	59

Panel B: 2005-6

	Unmet-Spacing	Unmet-Stopping	Met-Spacing	Met-Stopping	Tot need	Tot met	Tot unmet	Tot spacing	Tot stopping
India	7	9	6	59	81	65	16	13	68
Respondent's education									
No education	6	11	3	61	80	63	17	9	71
Primary	6	8	4	63	82	67	15	11	72
Secondary	8	8	9	57	80	65	15	16	64
High school	5	6	15	55	82	71	11	20	62

Source:Author's calculations, NFHS 1, 3

Note: Sample covers currently married, fecund women

Table 2. Components of need for family planning

Panel A: 1992-3

	A	B	C	D	E	F	G	H
	% of tot need due to spacing	% of tot need due to stopping	% of met need due to met need for spacing	% of met need due to met need for stopping	% of unmet need due to unmet need for spacing	% of unmet need due to unmet need for stopping	% of need for spacing that is unmet	% of need for stopping that is unmet
India	26	74	10	90	61	39	74	16
Respondent's education								
No education	24	76	5	95	57	43	87	21
Primary	22	78	7	93	62	38	75	12
Secondary	29	71	16	84	66	34	61	13
High school	29	71	22	78	57	43	37	11

Panel B: 2005-6

	% of tot need due to spacing	% of tot need due to stopping	% of met need due to met need for spacing	% of met need due to met need for stopping	% of unmet need due to unmet need for spacing	% of unmet need due to unmet need for stopping	% of need for spacing that is unmet	% of need for stopping that is unmet
India	16	84	9	91	44	56	54	13
Respondent's education								
No education	11	89	4	96	36	64	68	15
Primary	13	87	6	94	43	57	60	12
Secondary	20	80	13	87	50	50	46	12
High school	24	76	22	78	43	57	24	10

Source:Author's calculations, NFHS 1, 3

Note: Sample covers currently married, fecund women

Table 3. Sterilized women, who have met or exceeded their Desired Family Size, by education

	1992-3		2005-6	
Respondent's education	Met DFS	More than DFS	Met DFS	More than DFS
No education	39	42	37	52
Primary	39	46	42	48
Secondary	47	44	53	39
High school	60	32	70	24

Source:Author's calculations, NFHS 1, 3
Note: Sample covers currently married, sterilized women