Women's Perceptions, Enabling Factors, and Barriers to Access and Use of Non-Permanent Contraceptive Methods in Uttar Pradesh, India

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Abstract
Female sterilization is the predominant form of modern contraceptive use in India, with limited use of non-permanent contraceptive methods for spacing births. This research uses Social Ecological Model as its theoretical framework to investigate women's perceptions, enabling factors, and barriers to the access and use of non-permanent contraceptive methods. Forty-two married women aged 19-49 were interviewed. Women reported a strong desire for spacing children, as well as knowledge of several non-permanent contraceptive methods. Contraceptive information was primarily obtained from husbands, immediate female family members, or Accredited Social Health Activists. Appropriate counseling on potential side effects, proximity to family planning providers, and family support were identified as enabling factors. Barriers to access and use included intolerable side effects, gender preference for sons, limited mobility and decision-making power within the family, and religious beliefs that prohibit the use of certain methods. An understanding of these phenomena is fundamental to development of culturally relevant programs and policies that work locally.

Introduction
In 1951, India became the first country in the developing world to adopt a state-sponsored family planning program. As initially envisioned, the program was defined by a series of goals designed to limit the population's growth rate to ensure sufficient resources for its population and to improve the health of the nation. The program focused primarily on female sterilization as the contraceptive method of choice for achieving these demographic targets, and imposed a system of quotas on medical staff as a means of ensuring the broad reach of this practice (Visaria L, Jejeebhoy S, & Merrick T, 1999).

The International Conference on Population and Development (ICPD), held in Cairo, Egypt in 1994 ushered in a new era for women's reproductive health and rights. The discourse evolved rapidly – from a focus on population and development to the prioritization of individual needs and the empowerment of women. In 1996, following the ICPD, India shifted its family planning program to focus on improving women's reproductive health within a broader human rights framework. To that end, in 1997, the government launched the Reproductive and Child Health (RCH) program. The RCH program stated that all centrally demographic target goals, as established under the original program, would be eliminated, and instead, individual community services needs would determine program priorities (World Bank, 1997).

Despite this paradigm shift in India's family planning program and more than six decades of family planning promotion, reproductive health outcomes, particularly in the Northern regions of the country, remain poor. The World Health Organization defines Total Fertility Rate (TFR) as the average number of live births a woman has during her lifetime (WHO, 2011). Research has demonstrated that high fertility is associated with adverse health outcomes for both women and their infants (Bhargava, 2003). In Uttar Pradesh, a North Indian state, fertility and mortality remain high, with a TFR of 3.8 (versus 2.6 for all of India), and a maternal mortality ratio of 440 maternal deaths per 100,000 live births (versus 254/100,00 for all of India) (Indian Ministry of Health, 2012).

Non-permanent contraceptive methods that are used to space births, such as condoms, oral contraceptive pills, injectable contraceptives, and intra-uterine devices, are particularly important in improving infant and maternal health. Children are more likely to survive when subsequent pregnancies occur at least 24 months after a birth, and indeed, this is the birth spacing interval recommended by the World Health Organization (World Health Organization, 2005). Studies have found that short spacing pregnancy intervals are associated with higher risks of poor infant health outcomes, including pre-term birth, low birth weight and small for gestational age (Conde-Agudelo et al, 2006). Additional studies have found that increases in pregnancy spacing are associated with improvements in maternal health (Razzaque et al, 2005). Moreover, the ability to determine when one has children through the use of preferred contraception has potential to lead to reductions in poverty and improvements in women's educational status (Cleland, 2006).

The official policy of the Indian government is that all women and couples can choose a contraceptive from the full range of methods available and that they are provided with complete information about those methods. Indeed, India's current National Population Policy states one of its goals as, "achieve universal access to information and counseling, and services for fertility regulation and contraception within a basket of choices." The same policy also highlights the importance of expanding the menu of choices for voluntary family planning (India National Commission on Population, 2000). However, contraceptive use remains dramatically skewed toward female sterilization, accounting for 66% of modern contraceptive use (India DHS, 2007). Modern spacing contraceptive methods that are used include condoms (10%), oral contraceptive pills (6%), and intrauterine devices (4%) (India DHS, 2007). Statistics regarding the use of injectable contraceptives are unknown.

Demographic and socioeconomic factors that influence use of contraception in India have been relatively well documented, as have women's perceptions of sterilization (Char et al., 2009, Char et al., 2010, Malhotra et al., 1995). A critical gap in the literature pertains to Indian women's perceptions and use of non-permanent contraceptive methods to space births. Accordingly, the objective of this research is to explore perceptions, enabling factors, and barriers to the use of injectable contraceptives and intra-uterine devices among women living in Meerut and Bijnor, two districts located in Uttar Pradesh, India.

The Social Ecological Theory (Stokols, 1996) provides a currently unutilized lens for a multifaceted understanding of the use of contraceptive methods among rural women in Uttar Pradesh. This model focuses on the dynamic interplay between situational and personal levels that determine health outcomes, accounting for the numerous physical, social, and cultural factors that influence a woman's use of contraception. This research employs the Social Ecological Theory as a framework for a multilevel investigation of non-permanent contraceptive use among women who are currently users of either injectable contraceptives or intra-uterine devices. Understanding these complex and inter-related phenomena is critical to developing culturally relevant programmatic and outreach activities in Uttar Pradesh. Such insight is also essential to inform Indian family planning policies that are founded in notions of choice and reproductive justice as the way to allow all Indians to choose and have their desired family size.

Methods

Semi-structured in-depth interviews (n=42) were conducted with currently married women aged 19-49 who were current users of either injectable contraceptives or intra-uterine devices. Interviews were conducted from June-August 2012.

Development of Study Tools

A semi-structured interview guide was developed and included open-ended and probing questions to explore women's perceptions of different types of contraceptive methods, experience using contraceptive methods, concerns with using contraceptive methods (i.e., side effects), and effectiveness of contraceptive methods in preventing pregnancy. These areas for inquiry were theoretically constructed based upon questionnaires that have been used to assess Indian women's knowledge and awareness regarding contraceptive methods, practices of contraception, attitudes toward contraception, in addition to perceptions and beliefs (Prachi et al, 2008; Bajwa et al 2011). Research from other South Asian countries also provided important theoretical constructs for assessing contraceptive access and use (Mustafa et al, 2008; Khan, 1996). In addition, the in-

depth interview guide explored factors that promote use of different non-permanent spacing methods, factors that limit use of these methods, and reasons for discontinuation of these methods. Questions pertaining to barriers were constructed based upon prior questionnaires that specifically explored barriers and reasons for reluctance to use contraceptive methods (Prachi et al, 2008; Bajwa et al, 2011).

Prior to recruitment of study participants, the interview guide was field-tested. Additional areas of inquiry were revealed during field-testing. The guide was translated into the predominant language spoken in Uttar Pradesh, Hindi. The translated version was back translated into English to ensure accuracy. Data gathered during field-testing is not included in the results presented in this paper. Consistent with the iterative nature of qualitative research (Denzin, 1978), the field-tested guide was modified over time as preliminary analysis of initial interviews suggested new lines of inquiry and the need for more detailed information on particular topics.

Sampling and Recruitment

Villages for the study were purposively selected based upon areas in which there was already extant demand for non-permanent contraceptive methods. These villages were identified from a database of health care providers that provide contraception to women. Local health care staff identified interview candidates who were known to be using either injectable contraceptives or intra-uterine devices, and who had given their consent to be contacted for research purposes. Although such sampling is non-random, this strategy allowed the research team access into the lives of women by establishing credibility and trust. In addition, because the prevalence of non-permanent contraceptive use is relatively rare in this context, this sampling strategy allowed the research team to identify and interview women who were actually users of such methods. To understand why women want to use non-permanent methods, and to develop appropriate educational and outreach strategies, it was critical to understand how women perceive these methods, what factors contributed to their decision to use these methods, and any barriers they had encountered. Women who were current users of either injectable contraceptives or intra-uterine devices (IUDs) were recruited for interviews.

Interview Procedures

All study participants were asked to provide verbal informed consent. Interviews were conducted in Hindi, were digitally recorded, and lasted no more than one hour. All interviews were conducted in private rooms at the health care clinics in order to maintain privacy of participants, or in equally private locations preferred by the study participants. The interviewer recorded non-verbal cues and observational data during the interview. Interviews were stopped immediately if there was any intrusion by another person, or risk of being overheard. Interviews were not re-started until privacy had been re-established, and the study participant was specifically asked if she was comfortable continuing the interview. At the end of each interview, basic demographic data was recorded, such as participant age, district of residence, and education level. Interviewers prepared short memos following every interview. In addition, the entire study team debriefed following every interview. This served as an assessment of quality and consistency of interviews and allowed the study team to constantly evaluate research activities in the field as they occurred. Participants did not receive financial incentives for participation in this research since such incentives might be coercive in this setting, given high rates of poverty.

Coding and Analysis

Interviews were transcribed and translated into English. Initial coding was done by hand while the researchers were in the field. Text files of all interviews are currently being imported into NVivo 10 for coding and analysis. Multiple forms of coding are being used to examine the data. The methodology for data analysis is rooted in concepts of grounded theory and constant comparison (Glaser and Strauss, 1967; Strauss and Corbin, 1998; Charmaz, 2006). All data is first reviewed to develop a broad understanding of the content as it relates to the study's specific aims. Short memos are prepared to identify, name, describe, and categorize phenomena in the text. During this step, the boundaries of specific codes, including inclusion and exclusion criteria for codes, are defined. Next, materials from memos, interviews, and observational data re coded to produce data into analyzable units. Segments of text from a few words to several paragraphs are coded. Two types of coding are being utilized: open coding to identify emergent themes and a priori coding, based on themes from the interview guide. Finally, axial coding is used to connect codes to one another. A complete list of codes (codebook) is being developed, which includes six basic components: the code, a brief definition, a full definition, guidelines for when to use the code, guidelines for when not to use the code, and examples.

Two coders are responsible for coding all data. Inter-coder agreement in application of codes will be assessed. Both coders independently code the same section of text. The results of their coding are then compared for consistency of text segmentation and code application (MacQueen et al, 1998). If the results are acceptable and consistent, coding continues with periodic checks for inter-coder agreement. Inconsistent results are reviewed to determine if the inconsistencies were due to codebook guidelines or coder error (i.e., misunderstanding of terminology).

This study was approved by the University of California, Berkeley Institutional Review Board, protocol 2012-02-4053.

Preliminary Results

The preliminary results presented below are based on 42 transcripts, and analysis is still being conducted.. Selected demographic characteristics of all study participants are presented in Table 1. Reproductive characteristics are presented in Table 2.

Attitudes on Fertility and Family

All 42 women interviewed were currently using non-permanent contraception: 25 women were using injectable contraceptives, while 17 were using intra-uterine devices.

The women interviewed had between one and six living children (Table 2). All interviewees stated that the ideal number of children in a family is two, spaced from three to four years apart. Several reasons for wanting to space children were provided: to promote personal health, in addition to that of the child; and to be able to perform daily household work and chores. Many women reported an underlying reason for desired spacing rooted in ensuring physical capacity and enough time to do required work at home. This is demonstrated by the following statement, in which an interviewee, aged 28, explains why she wanted to space her children. *"Both children may need the mother at the same time, which can be difficult. If the mother only attends to the children, it can create lots of tension within the family. It can result in frequent fights for neglecting the other household chores."* All 42 women interviewed stated that they did not want any additional children in the future. Concerns about ability to financially support the family was cited as a primary motivation for not wanting additional children. One interviewee stated, "*See in this time of inflation no one is going for more than two children, whether one is rich or poor, no one is having more than two children… and one should have limited children only.*"

Though concerns over well-being and finances generally gave an indication that women wanted to regulate their fertility, the situation became more complex when social obligations to the family were considered. Some women stated that they had felt obligated to prove their fertility to the husband's family by delivering an early first child after marriage. This obligation had discouraged the use of contraception during the early years of marriage. This factor might be associated with the fact that the majority of the women who were interviewed reported that they had given birth within the first year of marriage (Table 2). In addition, women often reported having more children than they initially planned, and this may be due, at least in part, to familial gender preference. Son preference, particularly from family elders, appears to be an important factor for not limiting fertility. One interviewee, aged 39 years, said, *"She (mother-in-law) was telling that the time has come for happiness…now that a boy would be born."* An obligation to provide more than one son appeared as a general theme throughout the interviews. This must be considered in the context of frequent childhood deaths: more than one fourth of the women had experienced losing a child (Table 2). Hence, it becomes important for women to have "enough" sons as exemplified by the following quote by an interviewee, aged 25 years, "*Two boys in case something happens to one, then we still have hope on the second one."*

Conversely, several women reported perceived family obligations pertaining to limiting family size. An interviewee, aged 23 years, stated, *"We don't have our (husband and wife) say. Especially my mother-in-law, it's not our wish. Everything happens as per they say…as they are elders to us. My mother-in-law advised me to have just one child."* This statement also demonstrates the decision-making power that mothers-in-law hold within the household.

Knowledge & Use of Contraceptive Methods

Overall, interviewees were aware of several contraceptive methods that can be used to space children. The primary source of information about contraception was the Accredited Social Health Activists (ASHAs) working with the local health centers. ASHAs were described as moving around in the neighborhood, going to women's homes, and informing women about contraception. The majority of women reported that ASHAs fulfill a supportive role. When women experienced problems or had questions about their contraceptive method, they sought advice from the ASHAs. However, several women also reported that ASHAs prompted them to adopt a particular type of method. This is evidenced by the following statement of an interviewee, aged 23 years: *"Well, ASHA told me about this method and like it…it's the prerogative of ASHA to educate about a certain method to a woman…the woman's judgment and information rest on ASHA's personal preferences."* Another interviewee, aged 34 years, stated, *"She had told me to use the method of IUD. I told her about injection, but she said that IUD is better. She said that injection was not good."* The promotion of a singular method by the ASHAs may result from the fact that ASHAs receive different levels of monetary incentives for different contraceptive methods. In the region in which study interviews were conducted, ASHAs receive a greater payment for recruiting an IUD adopter compared to an injectable adopter.

Female sterilization was perceived as the most effective method in pregnancy prevention. However, respondents viewed this method as appropriate only for a small subset of women: those who had already achieved a sufficient age, and those who do not have small children. The reason for the latter may be grounded in the reported side effect that sterilization disrupts milk formation in the body, and hence, disrupts the ability to breast-feed small children. Two women indicated that their provider had advised them against sterilization, as they were supposedly "too young", according to the provider.

Several women had previously attempted to use oral contraceptive pills. However, all had discontinued use due to side effects, inconvenience, or lack of trust in the method's ability to prevent pregnancy. The majority of previous pill users reported that oral contraceptive pills generated bloating and heat in the body – a statement reiterated by both interviewees with personal oral contraceptive pill experience and interviewees who had been given this information by other women in their communities. Furthermore, oral contraceptive pills are perceived as an ineffective method in pregnancy prevention. This may be attributable to the fact that several of the respondents either did not know that oral contraceptive pills had to be taken daily, or simply forgot to take them on a consistent basis. A woman, aged 39 years, reported, "*I had taken medicine (oral contraceptive pills) after four children, but nothing happened. I took it once and conceived two years later*."

Though many of the injectable using respondents were new users, two-thirds of these had experienced some degree of side effects. Half of these were referred to as being problematic, and were often related to menstrual irregularities. Spotting and prolonged menstrual cycle were reported as an especially problematic side effect of injectable contraceptive use because a woman's ability to perform certain tasks became limited. Several women also indicated that menstrual irregularities due to injectable use could be properly managed with medication.

Intra-uterine devices were generally perceived as a convenient method to be used when spacing is desired, without fear of conception. One respondent, aged 33 years, stated, "*IUD is quite a non-tedious affair*." However, a fear shared by several interviewees was that the intra-uterine device can travel up into the ribs, causing severe damage or even death. A woman, aged 25 years, said, "*The IUD can shift up towards the chest, because of which the person can die.*" Furthermore, IUDs were also mentioned as a method unsuitable for the work of rural Indian women, whose daily activities include having to bend, lift, and sit in a squatting position. Several women reported personal experiences or stories they had heard of situations where the IUD had pinched, causing the woman not to be able to work properly. A former IUD user, aged 30 years, exemplified this with the following reason for discontinuing IUD use: *"I could not use it, as I have to carry heavy crops to help my husband. It used to be a little painful and pinching."*

Enabling Factors

At the community level, the AHSAs provide information and motivate women to seek family planning services. Women who were satisfied with their contraceptive method reported prior counseling of potential inconveniences or side effects. Counseling of side effects was usually done by a provider at the local health

care clinic. A woman, aged 25 years, counseled on IUDs by "Madam" (doctor) said, "*Initially, I do experience some pain, which is understandable*."

At the family level, social support of immediate family members was another factor that seemed crucial in enabling women in seeking family planning services. It should be noted that 35 of the 42 women lived in joint households, with the husband's family, as is Indian tradition (Table 1). None of the women reported that they could obtain contraception without the perspectives and acceptance of the family. One woman, aged 20 years, stated, *"My husband helped make the decision to use injectable. My mother- and father-in-law don't know."* This family influence was especially evident, as many women reported that social supports outside of the family do not exist. When questioned about with whom she talked regarding family planning, another woman, aged 23 years, stated, *"I don't talk personally with my sister-in-law, neither do I go not, nor having visits from outside…since I am a newly married daughter-in-law, I do not go out or talk to other women."* It is important to note that interviewees indicated that they never leave the home unaccompanied. Thus, all women reported that obtaining contraception had to be done in the company of, and hence acceptance by, their husbands, a female family member, or the ASHA.

At the structural level, short distance to the health clinic may also be an important enabling factor to access and use of family planning services. All women interviewed lived within walking distance or a ten-minute bus ride from their contraceptive provider.

Barriers

Women identified several barriers in accessing and using non-permanent contraceptive methods. Intolerable side effects that are harmful to either the individual's health or that of the child's health emerged as a dominant theme. To the extent that the feared side effect is a misconception that can be addressed by the health personnel, this barrier is at the provider-level. Several women indicated that the counseling they had received upon adopting their contraceptive method was inadequate. Women reported not being told of possible side effects, as evidenced by the following interviewee, aged 24 years, when asked about what the provider had told her during counseling, *"No, he didn't say nothing. After getting the injection, I just came out. My husband might be knowing."* Two injectable users stated that the doctor who had injected them had done so after assuring them that injectable contraception had no side effects. An injectable user, aged 26 years, stated, "*Doctor assured me that there would not be any side effects…they said it wasn't worth being counseled by a telemedicine doctor*."

At multiple levels (personal, domestic, community), male gender preference clearly inhibited use of family planning until after the birth of a son. Power dynamics within the family were also a barrier for many of women. Several women reported the need to seek permission to use family planning services from either their husband or mother-in-law or from both. A woman, aged 36 years, stated, "*I have seen other women who couldn't use because husband didn't allow. Some straight refuse*."

At the spiritual level, especially for Muslim women, religion was a barrier to certain methods of contraception. All Muslim women who were interviewed stated that sterilization was "gunah" (forbidden), and some also reported that intra-uterine device use clashed with the Islamic belief system. Muslim women appeared concerned about unintended pregnancies because abortions are "banned" within their religion. Because certain contraceptive methods do not accord with women's beliefs, they had a more limited choice of methods. In fact, some Muslim interviewees indicated that their use of injectable contraceptives was due to the fact that this was their only option; not that they necessarily liked the method. In spite of some dissatisfaction, women reported that they would still use injectable contraceptives, as indicated by the following Muslim interviewee, aged 33, who said that, *"It would be better without injection…we take this because it is the only method that we can take."* The predominant use of injectable contraceptives among Muslim women might be attributable to the fact the most Muslim women reported only being told of injectable contraceptives as a method choice by the ASHAs.

Table 1. Selected Demographic Characteristics of Study Participants (n=42)	
Characteristic	**Number**
Present Age (years)	
15-19	1
20-24	9
25-29	15
30-34	11
35-39	6
40-49	1
Years of Education	
No formal	12
Not completed Standard (≤5 years)	7
Completed Standard (8 years)	5
Completed High School (10 years)	5
Completed Secondary (12 years)	7
More than 13 years of schooling	6
Caste	
No response	4
Scheduled caste	4
Other backwards caste	29
General	5
Religion	
Hindu	30
Muslim (Sunni)	12
Household	6
Joint	35
Nuclear	7

Table 2. Selected Reproductive Characteristics of Study Participants (n=46)	
Characteristic	**Number**
Spacing Between Marriage and First Birth	
No response	1
1 year	31
2-3 years	10
Number of Living Children	
1	9
2	14
3	7
4	8
5	2
6	2
Child Deaths	
None	30
Have lost ≥1 child	12

Limitations & Strengths

There are limitations to this research. Providers aided in recruitment activities for this study. Study participants might have felt compelled to provide socially desirable responses, since they knew that the research team was in some way affiliated with local health care providers. Nonetheless, the data collected included diverse points of view, indicating that respondents felt comfortable expressing their experiences of contraceptive use. In addition, this recruitment strategy allowed the research team access into the lives of women by establishing credibility and trust. Such access may not have been granted had the research team not established trust among local providers, and subsequently, the women who were interviewed.

The focus of this research was in exploring women's perceptions and experiences with non-permanent contraceptive methods used for spacing births. However, only current users of injectable contraceptives or intra-uterine devices were interviewed. While oral contraceptive pills are also a contraceptive method that can be used to space births, and indeed, are more widely used than both injectable contraceptives and intra-uterine devices, sampling users of this method was not feasible. This is because oral contraceptive pills are provided over-the-counter. The sampling and recruitment strategy utilized in this study identified women who had recently visited a provider; thus, we interviewed women had adopted their respective method of contraception within the six moths prior to data collection. This is advantageous, in that by recruiting newer contraceptive users, the risk of recall bias regarding uptake of recent contraceptive methods is minimized.

Women who were not currently using contraception were not included in this study. It is possible that women who are not current contraceptive users may have experienced barriers that prohibited their use of family planning. However, because this research specifically sought to understand both those factors that promote and limit a woman's use of contraception, only current users of contraceptives were recruited.

There are several strengths to this research. By its nature, qualitative methodologies, and in particular, in-depth interviewing, allow one to analyze a given phenomenon while taking into account social, cultural, and political factors. This accords well with the theoretical framework employed in this research. Interviewing methodologies allowed for an in-depth exploration of women's lived experiences with both injectable contraceptives and intra-uterine devices.

In addition, qualitative methodologies give discourse power to women. This may be particularly important in this context, where women have little power, autonomy, or decision-making authority. Having the opportunity to discuss their experiences with contraceptives may have been an empowering event.

Implications

This research sought to fill a critical gap in the literature pertaining to Indian women's perceptions and use of non-permanent contraceptive methods to space births. Understanding women's perceptions of injectable contraceptives and intra-uterine devices is a first step toward filling this gap. Understanding factors that promote use of these methods, in addition to those factors that limit use, is fundamental to developing innovative approaches to meet non-permanent contraceptive needs among women living in Meerut and Bijnor, Uttar Pradesh, India.

There are many implications to this work, particularly in the development of family planning programs at the village level. One important finding is that, while sterilization was perceived as the most effective contraceptive method for pregnancy prevention, many women stated that this method was only appropriate for a certain subset of women. Thus, there is a clear and important role for non-permanent contraceptive methods in this context. In addition, such contraceptive use has to be understood within the specific constraints of women's daily lives, characterized by lack of mobility and decision-making power in the household. Both men and religious leaders appear to be key decision makers within the community, and thus, involving them in family planning activities may increase uptake of contraceptive services. Another important finding is that many women were either unaware of potential side effects of methods, or directly reported that their provider informed them that there were no possible side effects. It is critical that providers counsel for potential side effects so that women, and their support networks, are empowered to make informed choices regarding their contraceptive methods.

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Notes

1. 'General' caste included in Table 1 includes those castes that are not categorized as socially or economically marginalized.

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