Marriage Patterns, Kinship Structure and the Utilization of Maternal Health Care Services in India

Sonalde Desai and Lijuan Wu
University of Maryland

Abstract

There is great regional variation on utilization of maternal health care services across India. In this research, we are interested in understanding the role of marriage and kinship patterns in shaping intrahousehold resource allocation and thereby influencing women's access to prenatal, delivery and postnatal care. The literature suggests marriage and kinship patterns to affect health outcomes in two ways: (1) Marriage patterns characterized by village endogamy and consanguinity increase parental connections with their daughters resulting in social norms whereby women are valued more in the community as a whole; (2) Village endogamy and consanguinity increase individual women's contact with their parents and social support networks and thus add to the resources women are able to draw upon to obtain maternity care. However, little empirical research has been able to examine these differences. Using our University of Maryland-NCAER Human Development Survey 2004-2005, we expect to disentangle the contextual and individual effects of marriage and kinship patterns on women's access to maternity care.

Regional Variation on Maternity Care and Determinant Factors

Although the associations between the use of maternal health care and positive maternal and child health outcomes are well documented (e.g. Bhatia 1993; Griffiths, Hindet, and Matthews 2001), the prevalence of maternal health care is still low in India. In 1998-99, only 200 out of 1,000 births received all recommended types of prenatal care[1]; and 336 births were delivered in a medical institution for every 1,000 births (International Insitute for Population Sciences (IIPS) and ORC Macro 2000). Meanwhile, a remarkable regional variation exists in India on utilization of maternal health care. In the same report by IIPS and Macro (2000), it was showed that Kerala had the highest rate of prenatal care use—649 out of 1,000 births received all recommended types of prenatal care, while the lowest prevalence was found in Uttar Pradesh—only 44 per 1,000 births received the same care. Similarly, the use rate of institutional delivery could be as high as 930 per 1,000 births in Kerala and as low as 121 per 1,000 births in Nagaland[2]. The striking differences across regions on prenatal care was also demonstrated even after controlling individual and household characteristics (Govindasamy and Desai 1999).

However, while these regional differences in maternal care are well recognized, the mechanisms through which they have formed remain unclear. It has been suggested that socioeconomic development, the accessibility of health care facilities and women's empowerment are the principal factors contributing to the regional differences on health outcomes (Shiffman 2000).

[1] Recommended types of prenatal care include three or more prenatal check-ups with the first check-up within the first trimester of pregnancy, two or more tetanus toxoid injections, and iron and folic acid tablets or syrup for three or more months.

[2] See Table 1 for detailed information on regional variation on maternity care and maternal and infant mortality by state in India.

Socioeconomic Development**:** While many studies control for household level socioeconomic factors such as education, such markers of income and consumption as possession of consumer durables, and occupation, regional level socioeconomic factors often go unnoticed. Areas that are better developed and have better infrastructure availability such as roads may increase the likelihood of maternal care. For example, a woman may be more likely to deliver in a medical facility if she can easily get there once her labor begins.

Access to Health Facilities: Given the difficulties pregnant women face in traveling to clinics, maternal care is strongly affected by access to trained personnel and health facilities. Government nurses, termed Auxiliary Nurse Midwives (ANM), are supposed to visit each urban and rural area at least once a week to provide prenatal and postnatal care as well as child immunization. However, the frequency with which these nurses visit their service area varies tremendously across the country (Desai and Sreedhar 1999). Availability of private maternity homes also varies across the country.

Gender Empowerment and Willingness to Invest in Women's Health**:** It is increasingly believed that gender inequalities in society are likely to play an important role, and numerous empirical studies have examined the association between women's education, employment, bargaining power within the household or the closeness to their natal family and their use of maternal health care services in India and other developing countries (Beegle, Frankenberg, and Thomas 2001; Bloom, Wypij, and das Gupta 2001; Miles-Doan and Brewster 1998; Obermeyer and Potter 1991). Nevertheless, considering the great regional variation in gender inequality in India (Dyson and Moore 1983), some of the studies simply focused on variations of health outcomes *within* geographic areas

with cultural homogeneity (Bloom et al. 2001; Griffiths et al. 2001). When regional variations were of interest, the researchers usually attributed the regional effects to the cultural differences on gender norms across regions (Basu 1990; Jejeebhoy and Sathar 2001), and the explicit effect of marriage norms and practices were left unexamined.

Different from previous studies, this research uses the nationally representative data from the Human Development Profile of India collected in 2004-05 (HDPI-II) to examine the direct impact of marriage pattern and kinship structure on the use of maternal health care services across India.

Why Would Marriage and Kinship Matter?

The "empowerment" factor is highly relevant in the Indian context. Research on intra-household gender inequality suggests that due to the gender inequality, the wealth of the nation or a household would not necessarily trickle down to women (Dwyer and Bruce 1988; Blumberg 1991; Jain and Banerjee 1985) and be translated into utilization of maternal care. Data suggested that the main reasons reported by women for not using maternal health care services are the lack of the perceived need to use such services. Among the births without a prenatal check-up, about 60 percent was attributed to the reason of "not necessary" (International Insitute for Population Sciences (IIPS) and ORC Macro 2000). It should be acknowledged that the perceived need to a large extent is socially constructed (Andersen 1995). In a society where women are in a subordinate position, it is very likely that women's health are not considered as important as men's, resulting in a low demand on health care even among women themselves. On the other

hand, at the societal level the investment in maternal health care may be insufficient due to the lack of interest in women's health.

More important, it has been recognized that regional differences on demographic outcomes such as fertility, age at first marriage, infant and child mortality, sex ratio, and utilization of maternal health care correspond with the north-south contrast on women's status resulted from the differences on marriage pattern (exogamy vs. endogamy) and the consequential kinship structure (Dyson and Moore 1983). In north India, exogamy is practiced. That is, spouses must be unrelated in terms of their kinship and residence. In many North Indian villages, custom dictates that women may not marry within their own or neighboring villages because all men in these areas are like their brothers or uncles. In contrast, endogamous marriage is preferred in south India. There is virtually no prohibition to women marrying within their own village and often they tend to marry cross-cousins or even maternal uncles (Bittles 1994). Different marriage patterns have different implications for married women on their social interactions. Exogamous marriage generally uproots women from their natal home after the marriage, while under endogamous marriage, women remain contacts with their natal home and other social networks developed before the marriage. Consanguinous marriage is even more supportive of women because of the long term ties of kinship and affection between the two families. Therefore, women under endogamous marriage may have more social and moral support than their counterparts under exogamous marriage. Consequently, exogamy may result in less motivation on the part of the husband's family to invest in women's health and more restrictions on married women's ability to utilize health care services.

However, findings from empirical studies aiming to directly test the relationship between gender inequality and the regional variation on the use of maternal care services in India are inconclusive. The common practice in previous studies was to take the residual regional effects as the evidence of cultural differences on gender norms after controlling individual and household characteristics by statistics or by research design in multiregional analysis (Basu 1990; Jejeebhoy and Sathar 2001). The residual approach leaves a lot of questions unanswered. First, accompanying with the regional difference on gender relations, there are broad socioeconomic differences separating parts of India from others (Govindasamy and Desai 1999). Similarly, although most studies attempt to control for some socioeconomic differences, there are still a lot of unmeasured differences with regard to the quality, amount, convenience, and cost of health care across regions as well as quality of infrastructure such as roads. Consequently, the residual effects of region in a large extent have mixed all the three factors—wealth, health, and empowerment. The direct measures on empowerment will help to unravel the relative strength of empowerment perspective in explaining the regional differences on prevalence of maternal health care across the country.

Second, as advocates of women's empowerment perspective have argued, the concept is multidimensional (Mason 1986; Presser and Sen 2000). It is often observed that certain dimensions of women's autonomy might have stronger influence over some others, depending on the outcome concerning the researchers (Bloom et al. 2001). Furthermore, the regional difference on women's empowerment across India is not always consistent on all the dimensions and does not follow a clean north/south divide (Rahman and Rao 2004). For instance, while women in Punjab may suffer from strong

limitations on their labor force participation, they don't experience much gender inequality on education. Hence, it is necessary to disentangle which aspects of the gender system are most crucial for understanding the regional variation in utilization of maternal health care services. From that perspective, more direct examination on the impact of marriage pattern and kinship structure, which has long been argued as one of the fundamental institutions affecting gender inequality across India, is of great merit.

Third, the inconclusiveness of the empirical studies may be at least partially explained by the disconnection between the theoretical argument and the empirical studies which did try to directly test the effect of marriage pattern and kinship structure. In theory, it is been suggested that the preference on endogamy versus exogamy has strongly affected the gender norms in different regions of India (Dyson and Moore 1983). In other words, it is the prevalence of certain pattern of marriage that is expected to display the contextual effects. In the empirical studies, nevertheless, usually it was just the individual level practice on endogamy versus exogamy that was included in the analyses. To solve the problem, a distinction needs to be made between contextual and individual effects of marriage pattern and kinship structure on maternal care.

Focusing on specific institutions—marriage and kinship—by directly measuring them at community as well as individual levels, our research aim to produce a more precise understanding on the contextual and individual influences of gender relations on regional variation of utilization of maternal health care service in India.

Data and Measurement

In 2004-2005, University of Maryland and National Council of Applied Economic Research designed and fielded a survey of 40,000 households. This survey, titled "Univ. of Maryland-NCAER Human Development Survey of India" contained questions about health, education, employment and income and gender empowerment. The survey was conducted all over India – in 25 states and Union Territories – and included urban as well rural areas. This data collection was funded by grants from National Institute of Health to Univ. of Maryland.

The survey collected detailed information on prenatal care, delivery, and postnatal care for the last birth and the birth next to the last one among women aged 15 to 49 and had at least one live birth since January 2000. Information on marriage norms on endogamy and exogamy in the community (caste or *jati*) was collected, as well as the actual marriage practice of the women themselves. In addition, one interesting question in the survey was about the location of the women just prior to their delivery: whether they stayed at their marital home, moved back to their natal home, or moved to other locations.

Three dependent variables are derived to measure the use of maternal care. One is a dummy variable about having used any prenatal care or not, based on the respondent's answers to various questions of prenatal check-ups and receipt of iron folic tablets or syrup. A second variable is about delivery care—whether there was any health professional attendance when the baby was born, including hospital delivery or trained midwife nurse at attendance. The third one measures the occurrence of any postnatal check-up for the woman.

Our key independent variables are: endogamy versus exogamy at the community level, the respondent's own marriage being endogamous versus exogamous, and the

woman's location prior to the delivery (marital home, natal home, or other). Women's autonomy on decision making in the household will be used to measure other aspects of women's empowerment. On the community level, the level of economic development and the accessibility of health care facilities will be controlled.

To distinguish between the use of maternal health care services as the curative form of care, the analyses will be carried out separately for women who had complications during the pregnancy.

The three dichotomous dependent variables, any use of prenatal care, delivery by trained health professional and postnatal checkup are examined in a ***hierarchical linear model*** with a specific focus on understanding the differences between various regions and communities.

Hypotheses

We are interested in understanding the role of marriage and kinship patterns in shaping intrahousehold resource allocation and thereby influencing women's access to prenatal, delivery and postnatal care. The literature seems to expect marriage and kinship patterns to affect health outcomes in two ways: (1) Marriage patterns characterized by village endogamy and consanguinity increase parental connections with their daughters resulting in social norms whereby women are valued more in the community as a whole; and, (2) Village endogamy and consanguinity increase individual women's contact with their parents and social support networks and add to the resources women are able to draw upon to obtain maternity care.

However, little empirical research has been able to examine these differences. Using our University of Maryland-NCAER Human Development Survey 2004-2005, we are able to study this. Specifically, three pieces of information collected in this survey, provide us with an interesting analytical handle. We asked the following questions:

1. How common it is in your community (caste) for a girl to marry within her village and her extended kin group?
2. Did you marry within your natal village and is your husband related to you in any way?
3. Where were you living just prior to the delivery, with your husband's family, with your natal family, somewhere else?

Prior research has shown that even in endogamous communities a substantial proportion of women still marry outside their natal village/city (Rahman and Rao, 1994). Thus the correlation between community preferences and practices and own behavior is far from perfect. We can also examine the importance of parental social support network by distinguishing between deliveries taking place in the natal family and those taking place in husband's home. Since many women travel to their natal family for a birth, particularly the first birth, regardless of the community norms regarding women's status, they are able to obtain support from their parents. So if parental social support networks are more important than the community context, we should see positive effect on maternity care for women delivering in their natal home.

We test the following hypotheses:

1. There is significant variation on utilization of maternal care among across regions, even after controlling for the individual (parity, age, education), household

(wealth, household structure, urban/rural residence) and health service access factors (distance to maternity clinic, size of town, access to roads).

2. If women's social support networks play an important role, women who marry in their natal villages, those who are married to their cousins or uncles and those who deliver in their natal homes are more likely to get maternity care. Addition of these factors to individual equations will substantially reduce the community and regional variation in maternity care.
3. If community norms have an independent effect on women's access to health care, even after controlling for individual level marriage and kinship variables, addition of community level marriage and kinship pattern will account for substantial regional variation in maternity care.
4. If parental social support is the primary mechanism by which gender and kinship structure affects women's access to health care, even in areas which practice village exogamy, women who return to the natal family for delivery should be able to access maternity care. However, as Basu (1990) notes, the anticipated moves before delivery may cause adverse effect on women's use of prenatal care because of the interruption of services by women's departure or women's preference of not interacting with the health care system close their marital homes. So moving back to the natal family before delivery may increase utilization of delivery care and post natal care but may reduce prenatal care.

Table 1. Utilization of maternal care, maternal and infant mortality by state, India*

State	Percentage that received at least one prenatal check-up (per 100 births)	Percentage given any Iron and folic acid tablets or syrup (per 100 births)	Percentage of deliveries assisted by a health professional (per 100 births)	Maternal Mortality Rate (per 100,000 live births)	Infant Mortality Rate (per 1,000 live births)
India	65.4	57.6	42.3	479	67.6
North					
Delhi	83.5	77.8	65.9	------	46.8
Haryana	58.1	67.0	42.0	472	56.8
Himachal Pradesh	86.8	85.6	40.2	------	34.4
Jammu & Kashmir	83.2	70.8	42.4	------	65.0
Punjab	74.0	79.6	62.6	@@	57.1
Rajasthan	47.5	39.3	35.8	580	80.4
Central					
Madhya Pradesh	61.0	48.9	29.7	700	86.1
Uttar Pradesh	34.6	32.4	22.4	737	86.7
East					
Bihar	36.3	24.1	23.4	513	72.9
Orissa	79.5	67.6	33.4	597	81.0
West Bengal	90.0	71.6	44.2	458	48.7
Northeast					
Arunachal Pradesh	61.6	56.3	31.9	------	63.1
Assam	60.1	55.0	21.4	984	69.5
Manipur	80.2	50.0	53.9	------	37.0
Meghalaya	53.6	49.5	20.6	------	89.0
Mizoram	91.8	72.7	67.5	------	37.0
Nagaland	60.4	42.5	32.8	------	42.1
Sikkim	69.9	62.4	35.1	------	43.9
West					
Goa	99.0	94.7	90.8	------	36.7
Gujarat	86.4	76.0	53.5	596	62.6
Maharashtra	90.4	84.8	59.4	380	43.7
South					
Andhra Pradesh	92.7	81.2	65.2	283	65.8
Karnataka	86.3	78.0	59.1	480	51.5
Kerala	98.8	95.2	94.0	@@	16.3
Tamil Nadu	98.5	93.2	83.8	195	48.2

* Data on utlization of maternal health care and infant mortality are derived from *National Family and Health Survey (NFHS-2), 1998-99: India* (IISP and Macro, 2000) (Tables 6.6, 8.7, 8.13); data on maternal mortaliy is for 1987-96 and derived from the estimation by Bhat (2001, www.iussp.org).

------: Data not available

@@: Maternal mortality is too low to be estimated (Bhat, 2001).

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