# VILLAGE IN THE CITY: AUTONOMY AND MATERNAL HEALTH-SEEKING AMONG SLUM POPULATIONS OF MUMBAI

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## 1 INTRODUCTION

In Mumbai, where 75 percent of the population live in slums or slum-like conditions (United Nations, 2001), availability of institutional services for childbirth is widespread and most babies are born in facilities (Yesudian, 1988). Despite this, underutilization of municipal services in favor of either childbirth at home or at private providers of variable quality, and late presentation at facilities—many never get there in time—are features of careseeking in this city. In these cramped, unsanitary, and often resource-poor conditions, women's roles can be subject to scrutiny and decisionmaking regarding careseeking behavior may be constrained, especially in pregnancy (Ramasubban and Singh, 2001). Despite social constraints, however, poor urban women may have access to cash and resources that their rural counterparts could never obtain. Here the village is in the city, as observed from the cultural norms governing the daily lives of these women and the pattern of their interaction within their extended families back in their familial village and their immediate neighborhoods.

Results of a recent retrospective survey of autonomy and maternal careseeking in the eastern slums of Mumbai show that 50 percent or more of women who have recently given birth enjoy high levels of autonomy but that substantial minorities remain in low autonomy categories (Matthews et al., 2003).

Previous qualitative research suggests that widespread reproductive ill health is for the most part silently endured by women. These problems are placed within a context of household dynamics, where the status of women is reliant on family size, female age hierarchies, levels of male employment, and coping strategies against male alcoholism and domestic violence (Ramasubban and Singh, 2001).

There is evidence from the small scale survey that uptake of maternal services is constrained for those women with low levels of empowerment. Planning for childbirth is not associated with any aspect of autonomy, but antenatal care is associated with access to resources, and postpartum care is associated with spousal communication. These variables are as important as education and gravida in the health-seeking process, and although there may be problems interpreting what is meant by autonomy measures derived from survey questions, the role of autonomy in maternal health cannot be ignored (Matthews et al., 2003).

National Family Health Survey (NFHS-2) data on women's autonomy and maternal careseeking from Maharashtra can be used to place the results of this small-scale survey into a larger context. This is particularly true since the NFHS-2, which was conducted concurrently with the small-scale survey in 1999, included a sizeable subset of respondents from Mumbai slum locations. Using these data, it is possible to compare the previous study with a Mumbai-wide representative survey, and to compare the nature of the autonomy/careseeking relationship between slum and nonslum areas of Mumbai, and also to see how this differs from the situation in rural areas. This paper seeks to examine the nature of women's autonomy and careseeking in slums using both the

Maharashtra NFHS-2 and small-scale survey data. Regression models are used to quantify relationships between different aspects of autonomy and maternal careseeking. Understanding the autonomy transition from village to city is key to the situation of increasing numbers of women worldwide. Furthermore, given the emphasis on extending institutional services for childbirth to larger proportions of women, it is important to investigate the effects of women's autonomy, especially in Asian contexts, where gender constraints can severely compromise women's decisionmaking abilities.

## 2 AUTONOMY AND MATERNAL HEALTH CARE SEEKING

The male-female disparity in health and wellbeing has been well documented in developing countries and particularly in the Asian context (Das Gupta, 1987; Santow, 1995). High levels of morbidity and mortality in women and girl children can often be indicative of female disadvantage relative to males. This is particularly thought to be the case where patriarchal kinship and economic systems limit women's autonomy (Dyson and Moore, 1983). Much research on careseeking and its association with autonomy has focused on child health problems (e.g., Hossain et al., 2000; Durrant and Sathar, 2000), with only a few studies on reproductive health careseeking for women themselves (e.g., Bhatia and Cleland, 1995; Dixon-Mueller and Wasserheit, 1991).

The association between women's position and the uptake of contraception has been studied in many settings. The impetus for this has been the strong and persistent relationship found between levels of women's education and fertility (Caldwell, 1986; Jejeebhoy, 1995). However, the lack of consistency among relationships found between reproductive behavior and female education or employment has led many analysts to measure women's autonomy directly, rather than using education or employment as proxies for their decisionmaking power (Balk, 1994; Jejheebhoy, 1995; Visaria, 1993). This was first suggested by Dyson and Moore (1983) who defined autonomy as the "ability to manipulate personal environments as a basis for decisionmaking about personal concerns." There have been a number of more recent studies that have divided autonomy into dimensions such as women's physical freedom of movement, their participation in decisionmaking, their access to resources, and their ability to visit their natal kin in the Asian context (Balk, 1994; Cleland et al., 1996; Morgan and Niraula, 1995). Most have found relationships between various aspects of autonomy and contraceptive use, but there are many complexities and contradictory findings among these studies, with different aspects of autonomy showing surprising relationships with family planning uptake in different settings and under different research designs. This has led some researchers—particularly those who have carried out in-depth qualitative studies on the realities of women's empowerment in family situations—to question the validity of the concept of women's autonomy, especially in Asia, and to investigate alternative explanations for differences in women's reproductive behaviors (Jeffery and Jeffery, 1997; Mumtaz, 2002).

Apart from a study by Bloom et al. (2001) set in Uttar Pradesh and another by Bhatia and Cleland (1995) set in Karnataka, maternal health-care-seeking behavior, as opposed to contraceptive adoption, has not been studied in relation to direct autonomy measures in India. To our knowledge, there are also no published contributions on this relationship from any other country. Education has been found to be correlated with maternal careseeking in many regions (Bhatia and Cleland, 1995; Kausar et al., 1999; and Matthews et al., 2001), and Bloom et al. (2001) have found that female autonomy is a major determinant of maternal health care utilization in Uttar Pradesh. These findings focus on the effect of freedom of movement and close affinal ties on careseeking in pregnancy, and the authors support the use of direct measures of autonomy to pinpoint

characteristics of women that are equally as important as educational and economic levels. Unlike previous work on autonomy and contraceptive adoption, however, the pathways through which modernizing influences such as autonomy can affect behavior have not been explored in the field of maternal health.

Identifying hypothesized pathways between women's status and maternal health begins with the widely accepted premise that maternal death is avoidable and that every pregnancy carries potential risk of complications (Starrs, 1997). Poor maternal health is associated with unhealthy living conditions, high fertility rates, inadequate hospitals, and low uptake of maternal health services. How does women's gender position or level of autonomy affect these variables? The low status of women's health problems can lead to poor health among women, as well as poor quality services. Restricted access and limited uptake of maternal health services can be linked to a number of autonomy-related factors. If geographical distance is a problem—which is often the case with maternity hospitals—then restricted mobility for women can be a barrier to access. This has been found even over short distances where, in order to travel, women must be accompanied, even in an emergency (Khan, 1999). If financial input is required—which is always the case when there is major surgery such as a C-section or procedures involving blood transfusions, and generally the case with antenatal and postnatal care or normal childbirth in a public institution—then women's lack of control over resources can be a barrier to uptake of services. Linking these last two barriers indicates that transportation costs are a problem in access to maternal care (Okojie, 1994). Social access can be seen as the individual and household decisionmaking process that balances geographical or financial concerns with perceived need. This stage has been identified by Thaddeus and Maine (1994) as a key potential delaying factor that can be life threatening. Poor access to services as a result of compromised decisionmaking at any stage during the obstetric period could be influenced by autonomy or autonomy-related household factors.

Decisionmaking during the obstetric period has two components, deciding to access routine preventative care, and deciding to seek care as the result of a problem. These quite distinct aspects of careseeking exist during pregnancy or after childbirth, when antenatal or postnatal care can be routine or a reaction to a problem. At the time of the birth, when the crucial decisions are made about when, if, and how quickly childbirth services should be accessed, the situation is somewhat different and usually more urgent. The perception of the onset and progression of labor by women and their families is also viewed as either normal or problematic, and care will be sought on the basis of this lay diagnosis. The process of decisionmaking involves women's own assessments as communicated to key household members and these are weighed against scarce resources and other limiting factors. This process is ongoing during all three phases of the obstetric period: antenatal, intrapartum, and postpartum. Many aspects of autonomy may be important to this process; a woman's access to resources, freedom of movement, and her educational level can influence the careseeking outcome. Relationships within the household, age hierarchies, and links with natal kin also play a part in the final decision. The role of natal kin, especially in supporting pregnancies and births, is likely to be an important factor given the social context of India.

## 3 TWO MUMBAI SURVEYS WITH COMPARABLE INFORMATION ABOUT AUTONOMY AND MATERNAL CARESEEKING IN SLUMS

The Maharashtra NFHS-2 survey was conducted May through June 1999 with the objective of providing state-level information on fertility, family planning, infant and child mortality, reproductive health, child health, nutrition of women and children, and the quality of health and

family welfare services. The sample of women was designed to provide estimates for the state as a whole, for urban and rural areas, and for Mumbai. The survey was also designed to provide separate estimates for slum and nonslum areas of Mumbai. To achieve these objectives, a larger sample was used in Mumbai than in other urban areas. The final Maharashtra sample consisted of 5,391 ever-married women age 15-49. In Mumbai, interviews were completed with a total of 2,010 eligible women, of which 1,177 were from slum areas (IIPS and Macro International, 2002).

The advantage of this survey is that it provides a Mumbai-wide representation of the urban poor apart from pavement dwellers. Autonomy questions were also included in the women's questionnaire. Of the women in Maharashtra that were interviewed in this survey, 1,511 had given birth during the three years before the survey was undertaken. Of these women, 203 were visitors in the household where they were interviewed; therefore, their place of residence was not clear and they were not included in the analysis presented in this paper. The 1,308 nonvisitors in the survey included 325 living in slum households in Mumbai, 157 in nonslum households in Mumbai, 559 in rural Maharashtra, and 267 in other urban areas of Maharashtra outside of Mumbai.

The Mumbai Safe Motherhood Survey (MSMS) was undertaken concurrently with the NFHS-2 survey. This was a cross-sectional community survey comprised of a sample of 652 women. The target population was women who gave birth in the eight months preceding the survey but not the six weeks preceding the survey. This was to avoid the underrepresentation of women who gave birth in their natal home, but had not yet returned to their normal residence. Six Mumbai slum pockets from the M ward of Mumbai were selected for the survey. The M ward is an area located in the eastern suburbs of Mumbai, outside of the island city. It is one of the largest and most populous slum localities (Ramasubban and Singh, 2001), and has close access to a number of maternity hospitals. The purpose of the MSMS was to examine maternal health careseeking, although the survey instrument also included a module of 32 questions related to autonomy.

The MSMS autonomy module underwent a lengthy design and testing process, using a focus group of key local residents to establish some questions that were relevant to childbearing women. These included questions on access to resources, freedom of movement, spousal communication, and knowledge of the legal age at marriage. From the household roster it was also possible to draw up indicators relating to each women's place in the female age hierarchy in her household, whether she and her husband had become a nuclear unit, and whether she had previously lived in a village, making her natal kin remote and possibly inaccessible.

Results from these two surveys are compared below, focusing on levels of autonomy, determinants of autonomy, and the relation between autonomy and maternal careseeking. Reference is made to previously published results on autonomy and maternal careseeking from the MSMS, but NFHS-2 results from slum locations in Mumbai are presented for the first time here. Analysis of the NFHS-2 survey allows interesting comparisons to be made between Mumbai slum areas and rural Maharashtra, other urban areas in Maharashtra, and nonslum Mumbai in terms of autonomy and careseeking among women. Some comparisons of these four strata are included in the analysis shown below. However, since the main objective of this paper is to describe autonomy and its links with maternal careseeking in the Mumbai slums, only the full correlational analysis as applied to the NFHS-2 Mumbai slum data is reported here. Some reference is made to the corresponding analysis of the rural sample—which is of interest here as elements of the social environment of the village are echoed in slum settings—and this has implications for women's agency.

## 4 LEVELS OF AUTONOMY AMONG NEW MOTHERS IN MUMBAI

Any investigation of urban poverty in Mumbai must locate itself in slum areas. Although poor households may also be found in nonslum areas in Mumbai, slums represent material poverty based on the dwelling characteristics seen in slums. There is, however, considerable diversity among slum-dwelling households. In the city of Mumbai, three distinct environmental settings exist in slum communities (Ramasubban and Crook, 1995). Those living in multistoried, one-room tenements in the island city represent a stable group in terms of their social history and skill levels. They are the least stressed by the pressures of urban living, and they are relatively more responsive to institutional and technological innovations. The pavement dwellers emerge as a transient group, lacking the backup of strong family and kinship ties. They have the lowest levels of income; there is a preponderance of males in the population; and they are the least responsive to interventions. The third and largest group is represented by the slum settlements in the localities outside the island city. Among these people the family unit is very strong, the resolve to succeed financially is strong, kinship ties are resilient, and social histories are divergent owing to in-migration from many different parts of the country. Of the three groups, they are the most stressed because of their lower income and asset base and the squalor surrounding their dwellings. The provision of public goods and services is crucial to the amelioration of their condition. This situation of people from diverse backgrounds being crowded into limited space with few civic amenities is typical of many large cities in south Asia.

One aspect of Mumbai that is fairly unique among the towns and cities of developing countries is the general availability of modern health services. The city of Mumbai has the highest number of hospital beds and doctors of any city in India (Yesudian, 1988). Use of these health services is also high. Findings reported by Crook, Ramasubban, and Singh (1991) from a cross-sectional household survey indicated that for children in 90 percent of households, treatment for ailments was sought within a week. For adults, this proportion was slightly lower, but consistent in all types of neighborhoods. It was calculated that the average cost of curative treatment for a sick person was between one-fifth and one-third of the monthly household income, which, taking the incidence of illness into consideration, was an estimated 2.3 and 3.6 percent of the household per capita income. They concluded that these findings indicate that even fairly marginalized urban populations are now connected to the curative medical system (public and private), and that even the poorest groups are willing to pay for care when the need arises. This is contrary to common perceptions of the urban poor. Physical access to medical facilities "can hardly be regarded as a limiting factor in Mumbai today" (Crook, Ramasubban, and Singh, 1991).

In terms of maternity care for childbirth, private provision has been found to be an option that is too expensive for most of the slum households in Mumbai (Yesudian, 1988; Matthews et al., 2003). The Municipal Corporation is the major provider of childbirth services inside the city, and only a small percentage of women give birth at a private hospital or nursing home. About 15 percent have their babies at home (Matthews et al., 2003). In greater Mumbai, there are 26 municipal maternity homes, with the number of beds ranging from 10 to 84, and 14 maternity hospitals, with the number of beds ranging from 20 to 172. Among these are three teaching and referral hospitals. There are also two large charitable hospitals—performing as many as 11,000 deliveries each year—and a large number of private facilities ranging from nursing homes with 2 to 4 beds to private hospitals with 40 to 50 beds.

Using data from the Maharashtra NFHS-2, it is possible to examine levels of autonomy among slum dwellers in Mumbai who have recently given birth (Table 1). Data was collected in this survey both on the household type and the area type in Mumbai, as slum households can be found in nonslum areas. However, as the number of slum households in nonslum areas is low, and the household characteristic is of overriding importance, the results in Table 1 are based on household types rather than household areas. The table shows that the autonomy of mothers in slum areas of Mumbai who have recently given birth exceeds that of their rural counterparts as well as women in urban areas outside of Mumbai. For example, the extent to which women are involved in decisionmaking for purchasing jewelry and other major household items in slums is 52 percent, compared with 58 percent in nonslum Mumbai, and 40 percent in rural Maharashtra. This pattern is repeated for going to the market without permission, which is widespread at 71 percent in the Mumbai slums, and only 10 percentage points more among new mothers outside the slums. In rural areas the equivalent figure is as low as 28 percent. These estimates show the lack of autonomy among women generally, but also the comparative advantage of the slum dwellers, although even among the urban poor there are distinct minorities who remain with low autonomy according to all of the measures shown here. The autonomy advantage of Mumbai slum dwellers over urban dwellers outside of Mumbai exists despite the lower wealth and higher fertility characteristics of the urban poor compared with those in urban areas outside of Mumbai. The comparison between urban Maharashtra and the slum districts of Mumbai shows both of these groups falling between the extremes of rural women and urban nonslum women in Mumbai in terms of autonomy, education, and other socioeconomic indicators.

Table 1 Autonomy of women in Maharashtra who have recently given birth, by household type, Maharashtra NFHS-2

| Autonomy indicator | Percentage Mumbai nonslum households | Percentage Mumbai slum households | Percentage urban areas outside Mumbai | Percentage rural Maharashtra |
|---|---|---|---|---|
| **Woman involved in:** | | | | |
| Decision on obtaining health care | 54.8 | 42.5 | 31.5 | 24.0 |
| Decision on purchasing jewelry[1] | 58.0 | 52.3 | 41.9 | 40.1 |
| Decision on going to stay with family members | 47.8 | 37.2 | 41.9 | 33.0 |
| **No permission needed to:** | | | | |
| Go to the market | 80.9 | 71.1 | 43.4 | 28.4 |
| Visit friends and relatives | 43.3 | 29.8 | 27.7 | 17.9 |
| **Allowed to have money set aside** | 83.4 | 59.7 | 62.9 | 47.6 |
| Number of women | 157 | 325 | 267 | 559 |

Note: Estimates are unweighted.
[1] And other major household items

Questions asked on autonomy as part of the MSMS are not equivalent to those from the Maharashtra NFHS-2; for example, there is no similar question in the MSMS regarding being allowed to have money set aside. Table 2 details the results of those parts of the MSMS autonomy module that cover the same areas as the NFHS-2 questionnaire. The picture that emerges is similar to that for the NFHS-2 direct indicators of autonomy: a highly autonomous population but with substantial minorities of women who suffer low autonomy. For example, 71 percent of mothers who

have recently given birth do not need permission to go to the market, according to the NFHS-2 Mumbai-wide slum estimate, and in the slum districts covered by the MSMS, exactly the same proportion of women can go to the market either alone or with others. Some indicators show more variation; for example, 30 percent of the NFHS-2 slums sample needs no permission to visit friends and relatives, whereas in the eastern suburbs, 39 percent can visit relatives at will, with no permission required. (This is a problematic question in the slum context, where relatives can live hundreds of miles away or in the same slum district.) Other indicators do not quite match up; for example, in the NFHS-2, women were asked if they were involved in decisionmaking for obtaining health care, purchasing jewelry, and going to stay with family members, while in the MSMS, there was more emphasis on freedom of movement rather than the decisionmaking process, for example whether women were able to travel alone to the doctor.

Table 2 Autonomy of women interviewed in the Mumbai Safe Motherhood Survey

| Autonomy question and response | Percentage of women | Number of cases |
|---|---|---|
| **Can you visit relatives when you want?** | | |
| Cannot visit as and when you wish to | 14.2 | 92 |
| Visit when want, with permission needed | 44.5 | 289 |
| Visit when want, with no permission needed | 39.0 | 253 |
| **If your child was ill, would you be allowed to take him or her to the doctor without the company of another adult?** | | |
| No | 24.3 | 491 |
| Yes | 75.7 | 158 |
| **If you were ill, would you be allowed to go to the doctor without the company of another adult?** | | |
| No | 28.8 | 462 |
| Yes | 71.2 | 187 |
| **Are you able to spend money by yourself for a sari?** | | |
| Decision made by others | 24.8 | 161 |
| Decide jointly | 33.4 | 217 |
| Decide alone | 41.8 | 271 |
| **Are you able to spend money by yourself for presents?** | | |
| Decision made by others | 28.2 | 183 |
| Decide jointly | 31.6 | 205 |
| Decide alone | 40.2 | 261 |
| **If you have ever earned money from paid employment, have you been able to spend your money on buying jewelry or cosmetics for yourself?** | | |
| No | 81.4 | 19 |
| Yes | 18.6 | 83 |
| **Who accompanies you to the market?** | | |
| Never go | 29.4 | 191 |
| Go with others | 14.5 | 94 |
| Go alone | 56.1 | 364 |
| **Who accompanies you to the market to do major shopping?** | | |
| Never do such shopping | 21.0 | 136 |
| Go with others | 62.2 | 404 |
| Go alone | 16.8 | 109 |

A previous analysis of the MSMS data used latent class analysis to reduce the dimensionality of the autonomy questionnaire items to 14, producing high and low autonomy categories for each dimension. The following independent dimensions were found; the six in italics are each based on one survey question.

- Freedom of movement
- Spousal communication about family building
- Involvement with an organization
- Spousal communication on health, education, money
- *Participation in a micro-credit scheme*
- *Ability to go out socially with friends in the locality*
- *Voting in general or local elections*
- Deference to in-laws
- Access to resources
- Spousal transfer of money
- Level of domestic violence suffered
- *Participation in adult education classes*
- *Knowledge of age at marriage law*
- *Ability to visit natal kin members*

The results showed that more than half of the MSMS sample could be characterized as high autonomy for most of the autonomy dimensions, although good access to resources was less prevalent. Substantial minorities of women remained in a low autonomy category for all dimensions (Matthews et al., 2003).

Indicators of socioeconomic status and often-used autonomy proxies also show similarities when comparing the two surveys. As shown in Table 3, a similar proportion of mothers who had recently given birth were involved in employment in both surveys (11 to 12 percent) and similar proportions were in households headed by either their husband or their father-in-law (more than 90 percent). However, other indicators show that the MSMS sample is not representative of the Mumbai slums as a whole. The NFHS-2 shows a Mumbai slum population that is richer, better educated, more literate, less fertile, and marries later than the MSMS sample in the eastern suburbs. Also, the NFHS-2 women are more exposed to television than the sample from the MSMS. It is also interesting to compare women in the slums with women in other parts of Mumbai and Maharashtra. The indicators show that women in the slums have much higher levels of socioeconomic status than their rural counterparts. The proportion who have worked in the past 12 months is, however, smaller than for any other group, which may have implications for autonomy. Women in the slums have children earlier than their nonslum counterparts, although the indicator, age at first birth less than 16 years, is higher among women in other urban areas than among slum women.

Table 3 Autonomy proxies and socioeconomic characteristics of mothers who have recently given birth, Maharashtra NFHS-2 and MSMS

| Characteristic | Maharashtra NFHS-2[a] Percentage Mumbai nonslum households | Percentage Mumbai slum households | Percentage urban areas outside Mumbai | Percentage rural Maharashtra | Percentage Mumbai Safe Motherhood Survey |
|---|---|---|---|---|---|
| Complete primary or more | 96.2 | 72.0 | 77.9 | 55.8 | 50.3 |
| Currently working | 12.1 | 11.4 | 19.9 | 66.0 | 12.1 |
| Age at marriage under 15 | 1.9 | 8.0 | 18.0 | 32.7 | 12.4 |
| Age at first birth under 16 | 1.9 | 13.5 | 20.6 | 36.3 | - |
| Reads a newspaper/magazine at least once a week | 78.3 | 39.4 | 47.2 | 18.6 | 22.9 |
| Watches TV at least once a week | 92.6 | 76.0 | 78.7 | 44.0 | 67.1 |
| Listens to radio at least once a week | 66.9 | 38.8 | 34.5 | 26.8 | 28.6 |
| Always lived in the city | 72.0 | 49.2 | 53.2 | - | 41.6[b] |
| Parity of last birth is 3+ | 22.9 | 40.4 | 36.3 | 49.5 | 49.4 |
| Husband/father-in law is head of household | 88.6 | 90.1 | 91.4 | 94.1 | 94.1 |
| Asset score is high | 83.5 | 48.9 | 59.9 | 27.9 | 31.2 |
| Hindu religion | 70.7 | 55.4 | 59.9 | 88.2 | 50.5 |
| Number of women | 157 | 325 | 267 | 559 | 644 |

[a] Estimates are unweighted.
[b] The MSMS survey did not specify the previous location if not Mumbai: 41.6% lived in Mumbai before marriage, 58.4% did not.

## 5 RELATIONSHIP BETWEEN AUTONOMY AND AUTONOMY PROXIES SUCH AS EDUCATION AND EMPLOYMENT

As a first step toward assessing the link between autonomy and maternal careseeking, it is instructive to look at the relationship between autonomy and other characteristics of women. Direct measures of autonomy have now emerged as more important indicators of women's agency, replacing proxies such as levels of education and employment, but the lack of consistency found between direct measures and their proxy antecedents means that doubts still remain over their interpretation. In slum settings, where women may still retain the cultural restriction of the village, there are few studies focusing on the development of women's autonomy.

Using the Maharashtra NFHS-2 data for the slum areas of Mumbai, relationships between the characteristics of women who have recently given birth and direct measures of autonomy can be explored using logistic regression modeling. Of the questions on autonomy posed in the NFHS-2 survey, our analysis focuses on the six that were answered by all women in the survey. These include whether women are involved in decisions to purchase jewelry and other major household items, to obtain health care for themselves, or to go and stay with natal family members, and whether women require permission to go to the market or to visit friends and relatives. We also looked at whether women are allowed to have money set aside that can be used at will. The survey questions were reduced to two categories for each dimension of autonomy (see Table 4).

Table 4 Odds ratios for autonomy among women in the Mumbai slums who have recently given birth, based on six regression models

| Indicator | Woman involved in decision to: | | | Permission not needed for woman to: | | Woman allowed to have money set aside |
|---|---|---|---|---|---|---|
| | Obtain health care for self | Purchase jewelry and other items | Go and stay with family | Go to market | Visit friends and relatives | |
| **Employment** | | | | | | |
| No | 1.00 | ns | ns | ns | ns | 1.00 |
| Worked in past year | 2.50* | ns | ns | ns | ns | 1.72* |
| **Age** | | | | | | |
| 15-19 | 1.00 | ns | 1.00 | ns | 1.00 | 1.00 |
| 20-24 | 1.06 | ns | 1.58 | ns | 5.39 ** | 7.14** |
| 25-29 | 2.51* | ns | 2.57* | ns | 3.84 * | 8.30** |
| 30+ | 1.32 | ns | 1.90 | ns | 5.17 ** | 12.60 |
| **Head of household** | | | | | | |
| Husband | 1.00 | 1.00 | ns | 1.00 | 1.00 | ns |
| Father-in-law | 1.00 | 0.55* | ns | 0.49** | 0.54 * | ns |
| Father/brother or other person | 0.31** | 0.25** | ns | 0.36** | 0.32 * | ns |
| **Religion** | | | | | | |
| Hindu | ns | ns | 1.00 | 1.00 | 1.00 | ns |
| Muslim | ns | ns | 0.58** | 0.61* | 0.55 * | ns |
| Other | ns | ns | 0.37 | 7.59** | 0.53 | ns |
| **Place of previous residence** | | | | | | |
| Urban | 1.00 | 1.00 | ns | ns | 1.00 | ns |
| Rural | 0.64* | 0.62* | ns | ns | 0.64 * | ns |
| **Reads paper at least once a week** | | | | | | |
| No | ns | ns | ns | 1.00 | ns | ns |
| Yes | ns | ns | ns | 1.83** | ns | ns |
| **Watches TV at least once a week** | | | | | | |
| No | 1.00 | 1.00 | 1.00 | ns | ns | ns |
| Yes | 2.08** | 2.00** | 1.50* | ns | ns | ns |

Note: Data are based on NFHS-2 Mumbai slum mothers who had a birth during the three years preceding the survey, excluding women who were visitors at the time of the survey. The "other person" category for head of household includes the very few cases where the woman herself or other natal, non-natal, or unrelated person was head of household.

*significant at .05%
**significant at .01%
ns = Not significant

Table 4 presents the results of the six regression models fitted to these directly measured dimensions of autonomy from the Mumbai slum household subset of the Maharashtra NFHS-2. A number of factors were not found to be associated with direct measures of autonomy, including education (either the woman herself or her partner), age at marriage and age at first birth, and wealth levels as measured by asset scores. Higher parity was found to increase autonomy in many cases, but as parity is highly correlated with the age of the woman, we have included age only in the final models.

As seen in Table 4, employment of women, which is not common in slum districts, is associated with improved inclusion of women in obtaining health care. This is the only dimension of autonomy in which employment is important, apart from being allowed to set money aside, which has a more functional relationship with employment. This finding supports results from the MSMS survey, which found that employment was related to freedom of movement and access to resources, but not to other aspects of autonomy such as ability to visit kin and spousal discussion (Matthews et al., 2003). The factors that most commonly emerge as significant are the head of household, with compromised autonomy seen where the woman is not married to the head of household, the expected increase in autonomy with age, and lower autonomy for Muslim women. The place of previous residence is an important factor; we might expect this when considering visiting or staying with family members, but having lived in a rural area before marriage also reduces autonomy to obtain health care or to purchase jewelry and other items. Exposure to mass media, also shown to be important in the MSMS, is related to autonomy, especially in terms of watching television.

These determinants of autonomy for women in slum households who have recently given birth are different from those found in rural areas of Maharashtra. The equivalent regressions carried out using rural women's data from the Maharashtra NFHS-2 rather than the Mumbai slum data highlight the improvement that women experience in their social environment when making the transition from village to city. This improvement is despite the cramped conditions in slums, which can lead to close surveillance of women's behavior. In rural Maharashtra, although education of women remains irrelevant to women's autonomy, higher levels of education for woman's partners consistently restricts women's autonomy compared with women whose partners have less education. This pattern has been found elsewhere in the Asian context, where women with intermediate levels of socioeconomic status are often found to be less autonomous than their poorer and richer counterparts. Some authors attribute this to the contribution that a small improvement in status can make to women's ability to take up their prescribed role in society. The same effect is seen in the rural NFHS-2 data for increased assets and employment, both of which are associated with lower categories on at least two dimensions of autonomy for rural women. This is not seen in the slum sample. Similarities do exist, however, in that age, exposure to media, and head of household are important for autonomy in the rural context in the same way as in the slum setting.

## 6 MATERNAL CARESEEKING IN MUMBAI

The parous women surveyed in the Maharashtra NFHS-2 reported a total of 1,762 births during the three years preceding the survey. For the purposes of studying maternal health careseeking, the survey data on antenatal care and childbirth can be analyzed for all of these births, although some women have contributed twice to the data set. We excluded 243 cases of respondents who were visitors at the time of the survey from the analysis. The most commonly used indicators of the utilization of maternal health care are whether women receive antenatal care in the first trimester of pregnancy, whether they have three or more contacts during pregnancy, and the place where childbirth occurs.

Using this approach, details of the 378 pregnancies leading to live births recorded in Mumbai slums were analyzed. Making up this total are 272 births that were the only birth recorded for that mother, and 106 additional births from mothers contributing two births each. Similar sample compositions make up the numbers of births from rural areas of Maharashtra and nonslum urban areas. Table 5 shows the key maternal careseeking indicators from these domains, including sample sizes as well as the equivalent information from the MSMS.

Table 5 Maternal health careseeking in Maharashtra, Maharashtra NFHS-2 and MSMS

| Indicator | Maharashtra NFHS-2[a] | | | | |
|---|---|---|---|---|---|
| | Percentage Mumbai nonslum households | Percentage Mumbai slum households | Percentage urban areas outside Mumbai | Percentage rural Maharashtra | Percentage Mumbai Safe Motherhood Survey |
| **Number of antenatal visits** | | | | | |
| None | 1.1 | 5.3 | 6.0 | 13.1 | 5.6 |
| 1 or 2 | 5.1 | 8.8 | 15.8 | 32.1 | 8.7 |
| 3 or more | 93.8 | 85.9 | 78.2 | 54.7 | 85.7 |
| **Timing of first antenatal visit** | | | | | |
| No visits | 1.1 | 5.3 | 6.0 | 13.1 | 5.6 |
| 1st trimester | 9.7 | 18.8 | 8.2 | 11.3 | 44.4 |
| 2nd trimester | 21.6 | 24.1 | 29.0 | 34.0 | 14.3 |
| 3rd trimester | 67.6 | 51.7 | 56.8 | 41.6 | 35.7 |
| **Place where childbirth occurs** | | | | | |
| Home | 6.8 | 17.9 | 22.7 | 66.3 | 24.8 |
| Public hospital | 34.1 | 46.7 | 33.1 | 17.0 | 55.4 |
| Private hospital | 59.1 | 35.5 | 44.2 | 16.7 | 9.2 |
| Number of women | 176 | 378 | 317 | 648 | 644 |

[a] Estimates are unweighted.

In terms of antenatal visits, the NFHS-2 and MSMS both report high levels of attendance for the World Health Organization (WHO) recommended number of visits. Although this leaves around 15 percent of women in Mumbai slums with inadequate attendance for antenatal care, the coverage compares favorably with rural Maharashtra, and also with urban areas outside Mumbai. In terms of antenatal contact during the first trimester of pregnancy, also recommended by WHO (WHO, 1996), the slum dwellers do particularly well, especially in the MSMS study area, whose catchment is served by a number of health providers. Further analysis of the MSMS data showed that problem care contacts, rather than routine checks during pregnancy, are sought frequently during the first trimester of pregnancy in slum districts of Mumbai, predominantly from private providers.

This level of service access is a characteristic of a highly served population of urban women, who although extremely poor and largely uneducated, have a range of options and are sophisticated careseekers. Despite this, MSMS results show that a substantial minority of women delay their first routine antenatal check until the seventh month of pregnancy, a timing significant for cultural reasons because it coincides with the public acknowledgement of the expected birth, and for practical reasons because the municipal authorities require that an antenatal visit be made before this time if a hospital delivery is to be assured (Matthews et al., 2003).

Institutional childbirth services are sought by the majority of women in urban Maharashtra. Unlike antenatal care, assistance during childbirth from a municipal provider is preferred because it is ostensibly free of charge, though there are various costs associated with publicly provided childbirth services, especially if a blood transfusion, C-section or other advanced procedure is

required. Although a large majority of the MSMS sample planned a municipal hospital birth in Mumbai, significantly less than this actually gave birth where they had planned, resulting in more than double the proportion of home births originally planned to occur in slum households. The custom of primiparous women returning home to their village to give birth under the care of their mothers gives rise to a small proportion of home and hospital births outside of Mumbai. Comparing the planned and actual childbirth locations of the MSMS sample suggested a general lack of planning, as well as late decisionmaking regarding where women should spend their final weeks of pregnancy. Almost one-fourth of the women finally gave birth at home (this compares with a slightly lower figure for Mumbai slums as a whole). The low percentage of women giving birth in a private facility in the MSMS sample compared with the NFHS Mumbai-wide sample underlines the poverty of the eastern suburbs.

## 7 AUTONOMY AS A CORRELATE OF MATERNAL CARESEEKING BEHAVIOR

Results of logistic regressions to find significant correlates of antenatal careseeking and childbirth location in Mumbai slums can be seen in Table 6. The table shows the odds of early and sufficient antenatal care contact, as well as the odds of institutional childbirth services for the more autonomous women compared with those with less autonomy as measured on the NFHS-2 dimensions. The uncontrolled odds ratio is the fixed effect of each dimension of autonomy on careseeking without controlling for other characteristics of women. When women's education, employment, age, religion, previous place of residence, and asset wealth are entered into a logistic regression, as well as their partner's level of education and their exposure to media, the controlled odds ratio is obtained.

The results show the importance of a number of autonomy measures in women's use of maternal health care. If women are involved in the decision to go and stay with family members, their odds of obtaining sufficient care during pregnancy, as well as institutional childbirth services, improves and this is clearly one of the most influential of the autonomy factors in maternal careseeking. Paradoxically, women's chance of obtaining care early enough in pregnancy declines when this dimension of autonomy is higher, but this may be because the decision to go and stay with natal kin does not have a straightforward interpretation when natal kin might be next door or hundreds of miles away. The size of the controlled odds ratios that are still significant also underlines the enduring effect of autonomy; for example, women involved in the decision to purchase jewelry and other items have more than twice the odds of other women to have three or more antenatal visits and to give birth in an institution. These results reflect the equivalent analysis of the MSMS data, which shows that antenatal careseeking is significantly related to access to resources and ability to visit natal kin, and that this effect is net of other factors (Matthews et al., 2003).

Some aspects of autonomy are not related to careseeking. For example, the role that women play in deciding to obtain health care for themselves (in general) may not be related to their careseeking during pregnancy and childbirth. Also, needing permission to visit the market has no effect on maternal careseeking. The net effects of autonomy on the place where childbirth occurs are more noticeable than the effects on antenatal careseeking, with a greater range of autonomy dimensions remaining important for childbirth than for antenatal care, after controlling for other factors. The effect of being able to have money set aside has a particularly strong influence on having an institutional birth.

Table 6 Separate effect of different dimensions of autonomy on maternal careseeking in slum areas of Mumbai, controlling for blocks of covariates, NFHS-2 Mumbai slums

| Block of covariates controlled | Dimension of autonomy: Involvement in decision to obtain health care for self | Involvement in decision to purchase jewelry and other items | Involvement in decision to go and stay with family members | Permission not needed to go to market | Permission not needed to visit friends and relations | Allowed to have money set aside |
|---|---|---|---|---|---|---|
| **Timing of first antenatal visit: Odds ratios for first trimester antenatal visit** | | | | | | |
| Uncontrolled | 1.23 | 1.17 | 0.73** | 1.22 | 1.28 | 1.18 |
| All covariates controlled | 1.19 | 1.14 | 0.63** | 1.15 | 1.40 | 1.04 |
| **Number of antenatal visits: Odds ratios for 3+ antenatal care contacts** | | | | | | |
| Uncontrolled | 1.10 | 2.55 ** | 2.70** | 1.34 | 1.12 | 2.00** |
| All covariates controlled | 0.83 | 2.02 * | 2.48** | 1.20 | 1.07 | 1.34 |
| **Place where childbirth occurs: Odds ratios for childbirth in an institution** | | | | | | |
| Uncontrolled | 2.05** | 3.54** | 2.15** | 1.75* | 1.64* | 3.01** |
| All covariates controlled | 1.54 | 2.73** | 1.20* | 1.34 | 1.77* | 2.69** |

Source: NFHS-2, Mumbai slum sample excluding 37 visitors, total unweighted sample size = 378
*significant at .05%
**significant at .01%

The corresponding analysis applied to the rural strata of the NFHS-2 data shown in Table 7 shows some similarities and some surprising differences. The results for the number of antenatal visits are similar with significant effects of involvement in decisionmaking for purchasing jewelry and going to stay with family members. However, the effect of being able to go and stay with family members and the timing of the first visit in rural areas is reversed, such that a more autonomous women in this respect would have higher odds of an earlier visit. This effect does not remain significant once other covariates are controlled for, unlike the slum results. Involvement in the purchase of jewelry and other items is a significant influence on early antenatal contact in rural areas but not in slums. The role of autonomy in the choice of childbirth location is much less important in rural areas than in slums. There are no aspects of autonomy that are significantly related to childbirth location in rural areas because choice of location in rural areas is limited, with home births being the norm. Autonomy is more important in slum locations, where there are multiple options for childbirth location.

Table 7 Separate effect of different dimensions of autonomy on maternal careseeking in rural areas of Maharashtra controlling for blocks of covariates, NFHS-2 rural Maharashtra

| Block of covariates controlled | Dimension of autonomy: Involvement in decision to obtain health care for self | Involvement in decision to purchase jewelry and other items | Involvement in decision to go and stay with family members | Permission not needed to go to market | Permission not needed to visit friends and relations | Allowed to have money set aside |
|---|---|---|---|---|---|---|
| **Timing of first antenatal visit: Odds ratios for first trimester antenatal visit** | | | | | | |
| Uncontrolled | 1.24 | 1.34** | 1.42 ** | 1.04 | 1.08 | 1.58* |
| All covariates controlled | 1.08 | 1.31* | 1.28 | 0.92 | 1.16 | 1.17 |
| **Place where childbirth occurs: Odds ratios for childbirth in an institution** | | | | | | |
| Uncontrolled | 1.22 | 1.21 | 1.32 | 1.13 | 0.95 | 2.06** |
| All covariates controlled | 0.94 | 1.14 | 1.07 | 0.78 | 0.94 | 1.23 |

*significant at .05%
**significant at .01%

Fitting logistic models that include all dimensions of autonomy together—assuming that these dimensions are not correlated—gives the results shown in Table 8. Here, the importance of the autonomy variables is clear, given their prominence in the models. The lack of significant links between careseeking and traditional measures of women's progress, such as age at marriage and education, shows that the direct measurement of autonomy is relevant for maternal health. (Factors that were insignificant for all three careseeking outcomes were excluded from the models and not shown in Table 8.) Recent employment in slums restricts the opportunity to obtain a care contact early in pregnancy, and is not important for place where childbirth occurs. The most consistent influence on all three forms of careseeking is newspaper reading, which has a large effect particularly on the frequency of antenatal care visits.

Table 8 Odds ratios from logistic regression models to predict maternal careseeking in Mumbai slums, NFHS-2 Mumbai slums

| Significant correlates | First antenatal care visit in first trimester | Three or more antenatal care visits | Childbirth in an institution |
|---|---|---|---|
| **Decision on purchasing jewelry & other items made by:** | | | |
| Partner /someone else | ns | 1.00 | 1.00 |
| Respondent / Jointly with partner | ns | 1.96* | 2.46** |
| **Decision on going to stay with family members made by:** | | | |
| Partner/someone else | 1.00 | 1.00 | ns |
| Respondent/Jointly with partner | 0.40** | 2.48** | ns |
| **Permission for visiting friends and relatives** | | | |
| Not allowed/permission needed | 1.00 | ns | ns |
| Permission not needed | 1.66* | ns | ns |
| **Allowed to have money set aside** | | | |
| No | ns | ns | 1.00 |
| Yes | ns | ns | 2.47** |
| **Worked in the past 12 months** | | | |
| No | 1.00 | ns | ns |
| Currently working/worked in past year | 0.54* | ns | ns |
| **Head of household** | | | |
| Husband | ns | 1.00 | ns |
| Father-in-law | ns | 3.65 ** | ns |
| Father/brother or other person | ns | 0.85 | ns |
| **Parity** | | | |
| First birth | 1.00 | ns | 1.00 |
| Second birth | 0.49** | ns | 0.84 |
| Third birth | 0.50 | ns | 1.48 |
| Fourth birth | 0.55 | ns | 4.66** |
| Fifth birth or higher | 0.42** | ns | 4.05* |
| **Number of assets** | | | |
| None or one | ns | ns | 1.00 |
| Two or more | ns | ns | 2.33** |
| **Language** | | | |
| Hindi | 1.00 | ns | 1.00 |
| Marathi | 2.99** | ns | 0.92 |
| Southern Indian language | 0.81 | ns | 0.93 |
| Northern Indian language | 1.61 | ns | 0.20** |
| **Partner's level of education** | | | |
| No education | ns | ns | 1.00 |
| At least complete primary | ns | ns | 2.08* |
| **Place of previous residence** | | | |
| Urban | ns | 1.00 | 1.00 |
| Rural | ns | 0.33** | 0.12** |
| **Reads newspaper at least once per week** | | | |
| No | 1.00 | 1.00 | 1.00 |
| Yes | 2.04** | 5.35** | 2.30* |
| **Listens to radio at least once per week** | | | |
| No | ns | 1.00 | ns |
| Yes | ns | 2.73* | ns |

Source NFHS-2, Mumbai slum sample excluding 37 visitors, total unweighted sample size = 378
*significant at .05%
**significant at .01%
ns = Not significant

Careseeking is not dependent on traditional autonomy proxies, but is more influenced by individual autonomy and age or parity, exposure to media, and cultural factors that relate to language and household structure. The move from rural to urban location is also central both to autonomy itself and to careseeking in pregnancy; those women who married into a city environment, having come from a village environment, are more vulnerable. Women in the urban category for previous place of residence include those who have always lived in the same locality as well as those who moved from one urban environment to another; these women have higher odds of three or more antenatal care visits as well as childbirth in an institution. The MSMS study, which collected much richer household and careseeking information, but only covers a small part of Mumbai, has similar results, and also shows that slum localities themselves vary considerably (Matthews et al., 2003). The determinants of careseeking for women in slum households who have recently given birth are different from those found in rural areas of Maharashtra. The equivalent regressions carried out using rural women's data from the Maharashtra NFHS-2, rather than the Mumbai slum data, underline the lack of importance of autonomy in rural areas, and the importance of the role of education in rural areas, compared with the slum areas, where access to media and autonomy levels become more influential.

## 8 DISCUSSION

The analysis presented in this paper provides evidence of the importance of women's autonomy in reproductive health. The survey responses show that in Mumbai slums the majority of young married women who have recently given birth report high levels of autonomy, especially when compared with their rural counterparts, but there is a sizeable minority of women in slums who face social, financial, and physical restrictions. In terms of maternal care, 14 percent of the NFHS-2 study sample from slums did not have the requisite three or more antenatal checks at the time of the survey, and there were even some who had no contacts at all. Only 19 percent of the sample had an antenatal care contact during the first three months of pregnancy, most waiting until later months. These results are similar to those of the concurrent MSMS study. Although this is a highly medicalized population, nearly all of whom plan a hospital birth, 15 percent of births occur at home in the slum.

As a counter argument to using education as a proxy for women's autonomy, it has been seen from our analysis that education is consistently unrelated to autonomy in slums. More commonly related factors are the head of household—with compromised autonomy seen where the woman is not married to the head of household—the expected increase in autonomy with age, and lower autonomy for Muslim women. The place of previous residence is also important; having lived in a rural area before marriage also limits autonomy. Exposure to mass media, also shown to be important in the MSMS study, is related to autonomy, especially in terms of watching television.

The results of multivariate analysis show that various dimensions of autonomy, as measured by direct survey questions, are important correlates of antenatal and childbirth careseeking. The ability of women to be involved in the decision to go and stay with family members is one of the most influential of the autonomy factors in maternal careseeking. Women involved in the decision to purchase jewelry and other items are more than twice as likely as other women to have three or more antenatal visits and to give birth in an institution. These results point to major similarities with the equivalent analysis of the MSMS data, a survey focused on a small area of Mumbai that shows, additionally, that levels of autonomy and careseeking can vary considerably by slum district.

Previous qualitative work has also identified that some women of reproductive age living in slum pockets in Mumbai are lacking in autonomy. Women's pregnancy narratives reported by Ramasubban and Singh (2005) suggest that social pressures and the existence or absence of support systems play a crucial role in maternal care and treatment-seeking during pregnancy and beyond. Steering a woman through the last stages of her first pregnancy has been culturally accepted as her natal family's responsibility. For subsequent births, women stay mostly in their husband's home. For multiparous pregnant women, the responsibilities for care of older children and additional household duties that go with being a mature and seasoned homemaker (particularly caring for the husband), continue unabated until she is ready to give birth. According to the same study, strong marital support sometimes comes from the mother-in-law, sisters-in-law, and husband, including the provision of good food for the pregnant woman, only light household duties, kindness and attention. In such cases, women, as a gesture of solidarity and identification, stay on in their husband's home even for the first birth, sending back parents who had come to fetch them in keeping with the custom.

In contrast to this, some parents and brothers of pregnant women are required to continue to extend their support even to subsequent pregnancies. This is particularly the case where daughters lack a support system in their conjugal homes and face gross ill-treatment. Natal support in such situations can be of the financial variety, toward the cost of hospitalization and tonics. Where women move into a nuclear setup, this natal assistance could be help with cooking and other household chores, such as filling water, or making available some special or extra foods. The atmosphere in conjugal homes can be lukewarm, indifferent, or even hostile to a woman's needs during pregnancy (Ramasubban and Singh, 2005).

Even for those women whose early pregnancies enjoy reasonable family support, the support system worsens steadily with every subsequent pregnancy. During the years when women are younger and sought after by their husbands, the joint family system impairs autonomy and access to health care except under the most extreme circumstances. Just when women come into their own, husbands become indifferent and sometimes hostile to their needs and indebtedness increases. The only positive accomplishment by the end of the childbearing years is that women have often developed the confidence to handle pregnancy and childbirth, and have built for themselves a support network in the neighborhood to obtain help when the need arises (Ramasubban and Singh, 2005).

The results from the analysis presented in this paper show that new mothers in the slum city find themselves in a different situation from those in rural areas. Autonomy levels are higher, despite less female employment, and many more health services are available. Household structures and family environments are extremely important to these women, and social conditions can vary widely from slum locality to locality. Women who have recently arrived from the village may be more vulnerable, as are those who do not have some media exposure. Comparing the autonomy-careseeking link seen in the slums with that in Maharastra villages shows that the role of autonomy in rural areas is much less important, especially regarding the place where childbirth occurs. Autonomy becomes more important in the slum location, where more careseeking choices are available.

Understanding the role of autonomy in health decisionmaking may be problematic because of the possible inappropriateness of the autonomy construct. Some authors argue that autonomy is not a useful concept in developing countries, and especially not in the Asian context (e.g., Jeffery and

Jeffery, 1997; Mumtaz, 2002). These authors emphasize the Western feminist origin of the idea of autonomy, which is based on an individualistic ideal. Jeffery and Jeffery also point out that the meaning of the word autonomy is hardly ever understood by women interviewed in large-scale surveys, and indeed, translations of the word always carry a negative connotation. In these cases, autonomy is not seen as desirable for a woman; autonomous characteristics are to be avoided. The creation of a new construct such as family embeddedness or centrality may be useful in terms of describing women's actual power, but the subsequent policy implications would be that women who are more peripheral to families and rejected by families need more support to access care effectively. This may be difficult to implement. It is certainly the case from our analysis that women who lived outside of Mumbai before marriage seek care less often. From the MSMS study it was found that those who have no older relatives in the household are less effective careseekers. These women are often in nuclear family situations, hold more responsibility, and are probably less embedded in the extended family. However, the importance of access to resources and freedom of movement—key factors associated with maternal careseeking, as demonstrated by this study—supports the continuation of interest in direct measures of autonomy.

## REFERENCES


Amin, S., Diamond, I., Naved, R.T. and Newby, M. 1998. Transition to adulthood of female garment factory workers in Bangladesh in the changing social context. *Studies in Family Planning* 29(2), Adolescent Reproductive Behavior in the Developing World, pp. 185-200

Balk, D. 1994. Individual and community aspects of women's status and fertility in rural Bangladesh. *Population Studies* 48:21-45.

Bhatia, J. and J. Cleland 1995. Self-reported symptoms of gynaecological morbidity and their treatment in south India. *Studies in Family Planning* 26:203-216.

Bloom, S.S., D. Wypij, and M. Das Gupta. 2001. Dimensions of women's autonomy and the influence on maternal health care utilization in a north Indian city. *Demography* 28(1):67-78.

Caldwell, J.C. 1986. Routes to low mortality in poor countries. *Population and Development Review* 12(2):171-220.

Campanelli, P. 1997. Testing survey questions: New directions in cognitive interviewing. *Bulletin de Methodologie Sociologique.* pp 3-17.

Cleland, J., N. Kamal and A. Sloggett. 1996. Links between fertility regulation and the schooling and autonomy of women in Bangladesh. In R. Jeffery and A. Basu (Eds.) *Girls schooling, women's autonomy and fertility change in south Asia.* New Delhi: Sage Publications.

Crook, N., R. Ramasubban, and B. Singh. 1991. A multi-dimensional approach to the social analysis of the health transition in Bombay. In J.G. Cleland and A.G. Hill (Eds.) *The Health transition: Methods and measures: Proceedings of an international workshop, London, June 1989*. Health Transition Series No. 3. Canberra, Australia: Health Transition Centre, The Australian University.

Das Gupta, M. 1987. Selective discrimination against female children in rural Punjab, India. *Population and Development Review* 13: 77-100.

Dixon-Mueller, R. and J. Wasserheit. 1991. *The culture of silence: Reproductive tract infections among women in the Third World.* New York: International Women's Health Coalition.

Durrant, V.L. and Z.A. Sathar. 2000. *Greater investments in children through women's empowerment: A key to demographic change in Pakistan?* Population Council Working Paper No. 137. New York: Population Council.

Dyson, T. and T. Moore. 1983. On kinship structure, female autonomy, and demographic behavior in India. *Population and Development Review* 9(1):35-54.

Filippi,V.G.A., W.J. Graham, and O.M.R. Campbell. 1990. *Utilizing survey data on maternity care in developing countries: An illustrative study*. Publication No. 3, Maternal and Child Epidemiology Unit, London School of Hygiene and Tropical Medicine. London: London School of Hygiene and Tropical Medicine

Fortney, J. and J. Smith. 1999. Measuring maternal morbidity. In Berer, M. and T.K. Sundari Ravindran, *Safe motherhood initiatives: Critical issues*, Reproductive Health Matters, Blackwell Science Ltd.

Ganapathy, S., J. Ramakrishna, and Z. Matthews. 1998. Birthrights and rituals: Care and careseeking in the intrapartum period in rural Karnataka. In C.P. Puri and P.F.A. Van Look (Eds) *Sexual and reproductive health: Recent advances, future directions.* New Age International Press Ltd.

Govindasamy, P. and A. Malhotra. 1996. Women's position and family planning in Egypt. *Studies in Family Planning* 27 (6):328-340.

Graham, W.J. 2002. Now or never: The case for measuring maternal mortality. *The Lancet* 359(9307):701-704.

Graham, W.J., C. Ronsmans, V. Filippi, O. Campbell, E.A. Goodburn, T. Marshall, C. Shulman, and J. Davies. 1995. *Asking questions about women's reproductive health in community-based surveys: Guidelines on scope and content.* Maternal and Child Epidemiology Unit Publication No. 6. London: London School of Hygiene and Tropical Medicine.

Griffiths, P.L., P.R.A. Hinde, and Z. Matthews. 2001. Infant and child mortality in three culturally contrasting states of India. *Journal of Biosocial Science 33:*603-622.

Hobcraft, J. 2000. The consequences of female empowerment for child well-being: A review of concepts, issues and evidence in a post-Cairo context. In Harriet B. Presser and Gita Sen (Eds*) Women's empowerment and demographic processes: Moving beyond Cairo*, New York: Oxford University Press.

Hossain, M.B., J.F. Philips, B. Pence, and I.D. Diamond. 2000. The effects of constrained women's status on infant and child mortality in four rural districts of Bangladesh. Paper presented at the Annual Meeting of the Population Association of America, Los Angeles, CA, 23-25 March.

Hulton, L.A., Z. Matthews, and R.W. Stones. 2000. *A framework for the evaluation of quality of care in maternity services.* UK: University of Southampton.

International Institute for Population Sciences (IIPS) and Macro International Inc. 1995. *National Family Health Survey (NFHS-1), India, 1992-93: Maharashtra.* Mumbai: India.

International Institute for Population Sciences (IIPS) and Macro International Inc. 2002. *National Family Health Survey (NFHS-2), India, 1992-93: Maharashtra.* Mumbai: India.

Jeffery, R. and P. Jeffery. 1997. Population, gender and politics: Demographic change in rural north India. Cambridge: Cambridge University Press.

Jejeebhoy, S. 1991. Women's status and fertility: Successive cross-sectional evidence from Tamil Nadu, India. *Studies in Family Planning* 22:217-230.

Jejeebhoy, S. 1995. *Women's education, autonomy and reproductive behavior: Experience from developing countries.* Oxford: Clarendon Press.

Jejeebhoy, S.J. 2000. Women's autonomy in rural India: Its dimensions, determinants and the influence of context. In H.B. Presser and G. Sen (Eds.*) Women's empowerment and demographic processes*: *Moving beyond Cairo*. New York: Oxford University Press.

Jejeebhoy, S.J. and Z.A. Sathar. 2001. Women's autonomy in India and Pakistan: The influence of religion and region. *Population and Development Review* 27 (4):687-712.

Kausar, F., P. Griffiths, and Z. Matthews. 1999. *Poverty and maternal health care utilisation in Maharashtra: Associated influences on infant mortality and morbidity*. Opportunities and choices working paper. UK: University of Southampton.

Khan, A. 1999. Mobility of women and access to health and family planning services in Pakistan. *Reproductive Health Matters* 7(14): 39-48.

Kishor, S. 2000. Empowerment of women in Egypt and links to the survival and health of their infants. In H.B. Presser and G. Sen (Eds.*) Women's empowerment and demographic processes*: *Moving beyond Cairo*. New York: Oxford University Press.

Koblinsky, M., K. McLaurin, P. Russell-Brown, and P. Gorbach (Eds.). 1995. *Indicators for reproductive health programme evaluation: Final report of the subcommittee on safe pregnancy*. The Evaluation Project. Chapel Hill, North Carolina, USA: Carolina Population Centre.

Matthews, Z., S. Mahendra, A. Kilaru, and S. Ganapathy. 2001. Antenatal care, careseeking and morbidity in rural Karnataka, India: Results of a prospective study. *Asia-Pacific Population Journal (June)*: 11-28.

Matthews, Z., R. Ramasubban, B. Singh, and R.W. Stones. 2003. *Autonomy and maternal health-seeking among slum populations of Mumbai, Social Statistics*. Applications and Policy Working Papers. Available at http://www.ssrc.soton.ac.uk/archive/00008141/. Southampton, UK: Southampton Statistical Research Institute.

Matthews, Z., R. Ramasubban, B. Singh, L. Hulton, and R.W. Stones. 2002. *The Mumbai Safe Motherhood Survey: Questionnaire Modules*. UK: University of Southampton.

Mason, V. 1989. *Women's experience of maternity care – a survey manual.* London: Office of Population Censuses and Surveys, Social Surveys Division. Her Majesty's Stationary Office.

Morgan, P. and B. Niraula. 1995. Gender inequality and fertility in two Nepali villages. *Population and Development Review* 21(3): 541-561.

Mumtaz, Z. 2002. Gender and reproductive health: A need for reconceptualisation. Ph.D. dissertation, London School of Hygiene and Tropical Medicine.

Okojie, C.E. 1994. Gender inequalities of health in the third world. *Social Science and Medicine* 39(9): 1237-47.

Oppenheim Mason K. 1995. Is the situation of women in Asia improving or deteriorating? *Asia-Pacific Population Research Report* 6:1-20.

Ramasubban, R. and N. Crook. 1995. Spatial patterns of health and mortality. In S. Patel, and A. Thorner (Eds.) *Bombay, metaphor for modern India*. Bombay, India: Oxford University Press.

Ramasubban, R. and B. Singh. 2001. Weakness ("Ashaktapana") and reproductive health among women in a slum population in Mumbai. In C.M. Obermeyer (Ed), *Cultural perspectives on reproductive health*. New York: Oxford University Press.

Ramasubban, R. and B. Singh. 2005. Women's reproductive health narratives from Mumbai. In M. Koenig and S. Jejheebhoy (Eds.) *Reproductive health in India: New evidence and issues.* Proceedings of a meeting in Pune. New Delhi: Ford Foundation.

Rosenfield, A., and D. Maine. 1985. Maternal mortality—A neglected tragedy: Where is the M in MCH? *The Lancet* (July):83-85.

Santow, G. 1995. Social roles and physical health: The case of female disadvantage in poor countries. *Social Science and Medicine* 40: 147-161.

Sathar, Z. and S. Kazi. 1997. *Women's autonomy, livelihood and fertility: A study of rural Punjab*. Pakistan Institute of Development Economics Research Report. Islamabad.

Starrs, A. 1997. *The safe motherhood action agenda: Priorities for the next decade, report on the safe motherhood technical consultation.* Colombo, Sri Lanka: Family Care International and the Agency Group for Safe Motherhood.

Steele, F., I. Diamond and S. Amin. 1996. Immunization uptake in rural Bangladesh: A multilevel analysis. *Journal of the Royal Statistical Society* (Series A) 159:289-299.

Stewart, M.K., C.K. Stanton, and O. Ahmed. 1997. *Maternal health care.* DHS Comparative Studies No. 25. Calverton, Maryland: Macro International Inc.

Sutton, S. 1997. Theory of planned behavior. In Baum et al. (eds.) *Cambridge handbook of psychology, health and medicine.* Cambridge, U.K.: Cambridge University Press.

Thaddeus, S. and D. Maine. 1994. Too far to walk: Maternal mortality in context. *Social Science and Medicine* 38(8): 1091-1110.

United Nations. 1995. *The challenge of urbanization: The world's largest cities.* Population Division ST/ESA/SER.A/151. New York: United Nations.

United Nations. 2001. *The state of the world's cities*. Geneva: United Nations Centre for Human Settlements.

Vermunt, J.K. 1997. LEM, a general program for the analysis of categorical data. Tilburg, The Netherlands: Tilburg University.

Villar, J. and P.Bergsjø. 1997. Scientific basis for the content of routine antenatal care: Philosophy, recent studies, and power to eliminate or alleviate adverse maternal outcomes. *Acta Obstetrica et Gynecologica Scandinavica* 76:1-14.

Villar J., H. Ba'aqeel, and G.Piaggio. 2001. WHO antenatal care randomised trial for the evaluation of a new model of routine antenatal care. *The Lancet*, 357:1551-1564.

Visaria, L. 1993. Female autonomy and fertility behavior: An explanation of Gujerat data. *Proceedings of the International Population Conference*. 4:263-275. Leige, Belgium: International Union for the Scientific Study of Population.

World Health Organization (WHO). 1996. *Antenatal care, report of a technical working group*. Geneva: World Health Organization (Ref. WHO/FRH/MSM/96.8).

Yesudian, C.A.K. 1988. *Utilisation of health services by the urban poor in Bombay*. Deonar, Bombay, India: Tata Institute of Social Sciences.