Social Statistics Research Centre
University of Southampton

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Zoë Matthews, Radhika Ramasubban, Bhanwar Rishyasringa and Will Stones

Abstract

Data from a retrospective survey of autonomy and maternal care seeking in the eastern slums of Mumbai shows that women who have recently delivered have high levels of autonomy. Components of autonomy such as freedom of movement, ability to visit natal kin and access to resources were identified using a latent class analysis of survey responses. Despite high proportions of autonomous women, substantial minorities remain in low autonomy categories. Uptake of maternal services was found to be constrained for those women with low levels of empowerment. Regression analysis suggests that autonomy is as important as education and gravida for maternal health-seeking.

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Autonomy and maternal health-seeking among slum populations of Mumbai

Zoë Matthews[2], Radhika Ramasubban[1], Bhanwar Rishyasringa[1] and Will Stones[2]

[1] Centre for Social and Technological Change, Mumbai, India
[2] Opportunities and Choices, Department of Social Statistics, University of Southampton, UK

Introduction

Over the last fifteen years, maternal mortality has been the reproductive health indicator that has proved to be the most resistant to validated improvement (Graham, 2002). The study of maternal morbidities has also revealed the extent of maternal ill health and its long-term consequences in developing countries (Fortney and Smith, 1999). Understanding maternal care-seeking is now recognised as an important step in tackling these problems. Studies are beginning to emerge that investigate the effect of male involvement in care-seeking, the impact of perceived quality of care (Hulton et al, 2000) and women's diverse understandings of potentially serious morbidities (Ganapathy et al, 1998). International attention on women's status and autonomy has been widespread, but it has focussed on the effect of autonomy on women's fertility decision-making, contraception and child health (eg Kishor, 2000, Hobcraft 2000, Balk, 1994, Govindasamy and Malhotra, 1996). Very few studies have been concerned with autonomy and its effect on the reproductive health of women themselves. As maternity affects the majority of women in developing countries, maternal health can be seen as key to reproductive health status in general, and investigating the effect of autonomy on maternal care seeking could significantly increase our understanding of the pathways to reproductive health.

Utilisation of health services is influenced by both supply and demand factors. For service use to take place, individual women must decide to seek them out, or at least take advice from outreach workers, but equally the service should be available and accessible if increased uptake is a policy aim. Autonomy, as a characteristic of the care seeker, can be conventionally seen as a demand factor along with age, parity, education and wealth. In contrast, supply factors such as cost, quality, convenience and distance are clearly in

the control of providers. However, autonomy can be seen as a mediator for the perception of supply factors. Perception of distance and convenience are affected by mobility; a key dimension of women's autonomy. Likewise, reactions to costs relate to women's access to resources, another important element of autonomy. Especially where her own health is concerned, the extent of a woman's agency is likely to be a crucial determinant of her ability to contact services.

To assess the contribution of various factors on the uptake of maternal health services, it is instructive to study care seeking in a context where choices are possible. In rural areas of developing countries, the key issues relating to maternal health are associated with delays before accessing emergency care, as facilities are usually sparsely distributed. In urban India, there exists a sophisticated maternal service environment at close proximity to poor populations, which ranges from traditional dais, herbal practitioners and pharmacists, to municipal homes and referral facilities and an array of private allopathic providers of widely varying qualities. Given increasing urbanisation in developing countries, understanding maternal health determinants in such a setting can suggest policy directions for increasing numbers of poor populations both in India and worldwide.

In Mumbai (formerly Bombay), availability of institutional delivery services is widespread. Despite this, underutilisation of municipal services in favour of either delivery at home or with private providers, and frequently observed problems of utilisation such as late presentation, are features of care seeking in this city. 75% of Mumbai's population live in slum or slumlike conditions (UN 1995), where in cramped and unsanitary conditions women's roles are subject to scrutiny. In this setting, decision-making regarding health seeking behaviour is a household rather than an individual matter, especially in pregnancy (Ramasubban and Singh 2003). Despite social constraints however, poor urban women may have access to cash and resources that their rural counterparts could never obtain. In these slum pockets, however, 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 neighbourhoods.

To investigate the factors that are associated with maternal care seeking and the role of women's autonomy in the care seeking process, the Mumbai Safe Motherhood Study

(MSMS) was undertaken in 1998-2000 in six slum pockets. This paper presents the results of the community survey component of the MSMS and this work builds on earlier qualitative work undertaken in the same localities (Ramasubban and Singh, 2003). The survey aimed to determine the extent of women's autonomy during pregnancy and the postpartum period and to identify any existing relationships between empowerment and maternal health-care seeking. In addition, quantitative relationships between empowerment indices and previously used 'proxy' measures of women's status such as women's employment and education were explored for comparison with other studies, many of which have found surprising relationships in the Asian context.

The survey instrument, which was based on in-depth qualitative studies of locally relevant autonomy measures, was administered to 652 women who had given birth within the eight months before the survey. Subsequent analysis was performed on the categorical survey responses using latent class analysis to reduce the dimensionality of the autonomy measures, such that 14 classes of autonomy were constructed. Using multivariate regression modelling, associations were investigated between these autonomy measures firstly with traditional autonomy proxies, such as women's age, education and employment and secondly with maternal care-seeking measures in the antenatal, intrapartum and postpartum periods.

Autonomy-related reproductive health behaviour

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). More studies are now emerging on the relationship between women's status and use of health care services, which give the direct link to mortality and morbidity outcomes (eg Steele 1996). However, most of the work has focussed on care seeking for child health problems, with only the more recent studies starting to concentrate on reproductive health care seeking for women themselves (Dixon-Mueller and Wasserheit, 1991, Bhatia and Cleland, 1995).

The bulk of previous literature on autonomy-related reproductive health behaviour has concentrated on the association between women's position and the uptake of contraception. The impetus for this has been the strong and persistent relationship found between levels of women's education and fertility (Jejeebhoy 1995, Caldwell 1986). However, the lack of consistency among relationships found between reproductive behaviour 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 decision-making 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 decision making about personal concerns'. There have been a number of studies that have decomposed autonomy into dimensions such as women's physical freedom of movement, their participation in decision-making, their access to resources, and their ability to visit their natal kin in the Asian context (Morgan and Niraula, 1995, Cleland et al., 1996, Balk, 1994). 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 in Asia, and to investigate alternative explanations for differences in women's reproductive behaviours (Mumtaz, 2002, Jeffery and Jeffery, 1997).

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 behaviour, as opposed to contraceptive adoption, has not been studied in relation to direct autonomy measures. Education has been found to be correlated with maternal care seeking in many regions (Bhatia and Cleland, 1996, Matthews et al, 2001, Kausar et al, 1999), and Bloom et al (2001) found that female autonomy is a major determinant of maternal health care utilisation in Uttar Pradesh. However, unlike previous work on education and contraceptive adoption, the pathways through which 'modernising' influences such as autonomy can affect behaviour have not been explored in the field of maternal health.

The Uttar Pradeshi 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 which are equally as important as educational and economic levels (Bloom et al 2001). The study also discusses the potentially important role of family structure and kin relationships, and this implies that direct measures of autonomy may not be enough to adequately describe the extent and immediate context of women's agency. This could be explored in quantitative studies by using survey household rosters, or eliciting more survey responses about family situations such as recent nucleation, family age hierarchies or kin marriage. Results on the effects of household structure on child health outcomes were identified by Griffiths et al (2001), showing that extended family structures can be advantageous in India, but this approach could be taken further and applied to maternal health-seeking behaviour.

Given the existing literature and debate surrounding women's position, our own study aims to go further in the types of quantitative indices that may be used to describe women's position, and to investigate the effect of these factors on maternal care seeking. We also collected standard information on women's education, employment, exposure to mass media and direct measures of women's autonomy. The analysis aimed to examine the inter-relationships between these variables as well as identifying the determinants of maternal care seeking in Mumbai.

Hypothesised pathways between low women's autonomy and restricted care seeking in the obstetric period

Identifying hypothesised pathways between women's position and maternal health must comprise the first step in an analysis of care-seeking processes. If we first consider an optimum situation, it is clear that the basis for low maternal mortality rates is accessible family planning programmes, coupled with a population of women who enjoy reasonably high levels of basic health. Moreover, the production of good maternal health at the population level requires the assumption that every pregnancy faces risk, and that the provision of a chain of high quality accessible services including institutional delivery facilities will save lives (Starrs, 1997). This is equivalent to saying that poor maternal health will result firstly from an unhealthy, high fertility population, secondly from inadequate hospitals, and thirdly from low uptake of maternal health services.

Figure 1 shows these basic three components of poor maternal health in the lower part of the diagram. The question remains: how does women's gendered position, or levels of autonomy among women affect these shortcomings? Certainly a low status for women's health problems generally may lead to poor health among women, and to poor quality services. More importantly for the study of health seeking behaviour, restricted access and uptake of maternal health service can theoretically be linked to a number of autonomy-related factors. Mumtaz (2002) divides determinants of access to health services into geographical, financial and social access.

If geographical distance is a problem, (which is certainly often the case for maternity hospitals), then restricted mobility for women can be a barrier to access. This has been found even over short distances, where women must be accompanied to travel, even in an emergency (Khan, 1999). If financial input is required, (which is always the case where major surgery such as C-section or procedures such as blood transfusion are required, and mostly the case even for antenatal and postnatal care or normal delivery in a public institution), then women's lack of control over resources can be a barrier to uptake. To link these last two barriers, there is also much evidence that transportation costs are also a problem in the case of access to maternal care (Okojie 1994). Social access, the final and most complex potential barrier, can be seen as the individual and household decision-making 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 which can be life threatening. Poor access to services as a result of compromised decision-making at any stage in the obstetric period could be influenced by autonomy or autonomy-related household factors.

Figure 1 shows the hypothesised pathways between autonomy and service uptake, but the decision to seek care requires further decomposition in order to conceptualise the links with women's autonomy. Figure 2 shows that decision-making in 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 care seeking exist during pregnancy or after delivery, when antenatal or postnatal care can be routine or a reaction to a problem. At the time of delivery, when the crucial decision is made about when, if, and how quickly delivery services should be accessed, the situation is somewhat different.

However, the perception of the onset and progression of labour by women and their families is also either viewed as 'normal' or problematic, and care will be sought on the basis of this lay diagnosis. Thus Figure 2 which describes a theoretical process of decision-making involving women's own assessments as communicated to key household members and weighed against scarce resources and other barriers, is applicable to all three parts of the obstetric period: antenatal, intrapartum and postpartum. Clearly all previously researched elements of autonomy may be important within this process, a woman's own access to resources and freedom of movement, as well as her own educational level can influence the care seeking outcome. Also relationships within the household, age heirarchies and links with natal kin should play an important part in the final decision. Indeed the role of natal kin, especially in supporting pregnancies and births is likely to be an important factor given the social context of India.

Context of maternal care-seeking in Mumbai

In India, a woman's autonomy after marriage is bound up with her relationships with conjugal and natal kin. Marriage acts as an important demarcation in women's lives where support systems begin to switch from natal to conjugal, and the hierarchy of the former with all the superiorities of age and gender established from birth is replaced by a potentially very different set of household power relations. In slums there is also a tendency for subsequent nuclearisation when marriages are well established.

The issue of maternity is central to the balance of natal and conjugal support systems for women, as a pregnancy and delivery and the possible ensuing costs and burdens will require that the two families work together for the wellbeing of a new mother. Traditions such as the natal family's responsibility for the first birth are strong among the urban poor of Mumbai as in most parts of south Asia, but these cramped, disadvantaged yet highly medicalised communities have evolved into a population of sophisticated healthcare consumers set in the social landscape of the slums.

Previous qualitative work has suggested that women of reproductive age living in slum pockets in Mumbai are severely lacking in autonomy (Ramasubban and Singh, 2003). High levels of ill-health are for the most part silently endured by women, due to a combination of factors including poor awareness about their bodies, about their health and

available services, as well as infrastructural shortcomings such as lack of sensitively tuned health services. These problems are placed within a context of household dynamics, where women's social respect is reliant on family size, gender and age hierarchies, male alcoholism, domestic violence and dependence on male employment (Ramasubban and Singh, 2000).

Women's pregnancy narratives reported by Ramasubban and Singh (2003) suggest that strong marital support sometimes exists, the provision of good food for the pregnant women, only light household duties, kindness and attention, from their mothers in law, sisters in law, and husbands. In such cases, women, as a gesture of solidarity and identification, stay on in their husbands home even for the first delivery, sending back parents who had come to fetch them in keeping with the custom. In stark contrast to this there is also evidence that some parents and brothers of pregnant women are required to continue to extend their support even to second and further pregnancies. This is particularly the case where daughters lack a support system in their marital homes and face gross ill-treatment. Natal support in such situations can be of the financial variety, towards the cost of hospitalisation and tonics. Where women move into a nuclear setup, this natal assistance could additionally extend to 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.

The Mumbai Safe Motherhood survey

The Mumbai Safe Motherhood survey was carried out in Mumbai in 1999-2000. The survey comprised of a sample of 652 women. The target population was women who had delivered a baby within eight months prior to the interview date, but who had not delivered within six weeks prior to the survey. This was to avoid the under-representation of those women who gave birth in their natal homes, and who had not yet returned to their normal residence. A recall period of eight months was considered to be a sufficient period to ensure reasonably accurate service histories. The omission of currently pregnant women allowed a comparison of pregnancy experiences to be made without the complication of surveying women at different stages of pregnancy. It was thus possible to

focus on women's health-seeking behaviour during the immediate postpartum, at delivery as well as during pregnancy.

Six Mumbai slum pockets were selected and households mapped. Pockets with a range of service providers were selected, some with municipal services very close and others slightly further away and all with access to a variety of private providers (nursing homes and private maternity hospitals). Initially, house to house visits were co-ordinated within the chosen pockets, by ten interviewers, in order to locate and contact all women within the pockets who fitted the selection criteria. A basic census of each slum pocket was taken. The interviewers themselves had close links within the community as they were community health workers who had a detailed knowledge of the localities, both through their previous involvement in the primary health care of young children, and as they were themselves residents of the pocket for which they had responsibility. Once target households had been identified women who agreed to take part in the survey were later interviewed over an extended period. All but three eligible women completed the survey. All three moved away from the area at some point between the initial census and the completion of the final questionnaire module.

Women respondents were interviewed at least twice. The lives of the respondents are demanding and they generally did not have the time to complete the modules in one sitting. The interviewers therefore sometimes returned various times until the questionnaire had been completed. Six modules were included in the survey instrument including questions on the socio-economic background of eligible women, a pregnancy history, antenatal care and planning for delivery for the most recent birth, experience of labour and delivery for the most recent birth, the postpartum period of that birth and details of women's autonomy levels (see Matthews et al, 2002 for a copy of the questionnaires). Autonomy questions were included as the last part of the questionnaire due to their sometimes sensitive nature. The majority of questions within the modules were closed. Preceding the survey questionnaire, observed details on the living conditions of each respondent were completed in by interviewers, followed by a schedule in which all household members were listed along with their basic personal characteristics from each surveyed household.

A number of sources and local knowledge was used during the development of the first draft of the questionnaire. The modules were then piloted, cognitively tested (Campanelli 1997), revised and finally conducted. A key text in the questionnaire design process was a publication by Graham et al. (1995) *'Asking Questions about Reproductive Health in Community Based Surveys'*. This publication draws on the experience of a large number of researchers and organisations brought together in an expert panel. In addition, the questionnaire for the Maharashtra National Family Health Survey (MNFHS) was examined (International Institute for Population Sciences and ORC Macro, 1995). Where appropriate the wording of certain questions from this survey was maintained, for use in the Mumbai Safe Motherhood survey, to ease comparison.

The autonomy module of the questionnaire underwent a lengthy design and testing process, using a focus group of key local residents to establish some questions which were relevant to childbearing women. Also included in the final version were some well-established autonomy questions which have been previously used in the MNFHS and other similar surveys. These included questions on access to resources, freedom of movement, spousal communication and knowledge of the legal age at marriage. From the household listings it was possible to draw up indicators relating to each woman's place in the female age hierarchy in her household, whether her and her husband had become a nuclear unit, and whether she had previously lived in a village, making her natal kin remote and possible inaccessible. The inclusion of these indicators was intended to give a wider household context to the concept of autonomy, rather than an individualised notion of agency.

A summary of the survey responses is given in Table 1, which shows household and socio-economic characteristics of the sample, as well as frequencies of some of the important family structure variables. From the Table it can be seen that the women in the sample are predominantly young, poor, uneducated, and have never worked for money. The proportion who were currently employed at the time of the survey is only slightly less than the proportion who had ever worked, and the employment is almost exclusively in domestic help. There is a fairly even spread of the sample who were undergoing their first, second and third pregnancies, with fewer reaching their fourth or higher parities. Surprisingly, over three-quarters of the women reported that they were part of a nuclear family, citing their husband as head of household. Most of the remainder were in an

extended family situation, and many of these had older (and therefore senior) women relatives living in the same hutment. More than half of the respondents did not live in Mumbai before marriage, implying remoteness from natal kin. The assets score counts the number of household assets owned from a common list as used in the MNFHS survey. Many households owned very few of these consumer durables, but television sets are reasonably common in the slums.

Latent class analysis was used to reduce the 39 survey questions on autonomy into a smaller number of meaningful autonomy elements (see Vermunt, 1997 for a description of this approach, including details of latent class software LEM). Clusters of questionnaire items often correlate very highly, and the information contained in them is therefore repeated. Such clustered questions generally reflect common themes or underlying indicators which, if from categorical survey data, can be thought of as 'latent' grouping or classes. The latent class approach is the equivalent of factor analysis but it does not require the assumptions that can be made for continuous data, thus accommodating categorical data values. The result of the procedure is the estimation of a latent class probability for each surveyed woman which indicates to what extent she belongs to each underlying indicator. These probabilities can be calculated for each cluster of questions. It was possible to label the groups of autonomy questions that were identified by this process under the following headings:

- Freedom of movement
- Deference to in-laws
- Spousal communication about family building

- Access to resources
- Involvement with an organisation
- Spousal communication health, education and finances
- Spousal transfer of money
- Level of domestic violence suffered
- Participation in a micro-credit scheme
- Participation in adult education classes
- Ability to go out socially with friends in the locality
- Knowledge of age at marriage law
- Voting in general or local elections
- Ability to visit natal kin members without permission

The last six of these were based on only one yes/no question, but these questions could not be grouped with any others, and can be considered as unique indicators of autonomy within the data set. The headings at the top of the list each represent a set of survey questions that are thematically linked as well as expressing the same underlying indicator or latent class. Three examples of these sets of questions are shown in Table 2. After identifying clusters of questions, the extent of each type of autonomy among the sampled women can be estimated by assigning a latent class probability of 0 to 0.5 as a 'low' probability of belonging to the autonomous class, and above 0.5 to 1.0 as a high probability. Using this categorisation, the calculated probabilities showed that more than half of the women were characterised as high autonomy for most of the autonomy dimensions, although good access to resources is less extensive. These percentages are shown as part of Table 1. It can be seen from the Table that substantial minorities of women remain in a low autonomy category for all dimensions.

Turning to maternal care-seeking, the results of the survey show that institutional delivery was sought by the great majority of women, 95% of women had at least one antenatal care contact during pregnancy, but only 40% had a postnatal check within three months of delivery. 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 care-seekers. However, as illustrated in Figure 3, there is a significant minority of 14% who did not manage the World Health Organization (WHO)-recommended 'three-visit' schedule during pregnancy, and many women did not access

care within the first trimester of pregnancy. From studies of rural India in comparably developed states, this compares poorly with rural residents, who tend to access antenatal care more frequently (Matthews et al, 2001). From Figure 3, it can be seen that many women accessed routine antenatal checks in the seventh month of pregnancy; a timing significant for cultural reasons because it coincides with the public acknowledgement of the expected birth, and maybe more importantly for practical reasons because the municipal authorities require that an antenatal visit must be made before this time if a hospital delivery is to be assured. Another interesting feature of the antenatal care data is that problem care was accessed frequently during the first trimester of pregnancy, predominantly from private providers.

Figure 4 shows the complexities of the delivery care situation in Mumbai. Unlike prenatal care, delivery care from municipal providers is preferred, as it is ostensibly free of charge, although there are various costs associated even with publicly provided delivery care, especially if blood transfusion, C-section or other advanced procedure is required. Although 68% of the sample planned a municipal hospital birth in Mumbai, significantly less than this actually delivered where they had planned, leaving more than double the planned amount of home births in the slums. The custom of primiparous women to return home to their village to give birth under the care of their mothers gives rise to the small proportion of home and hospital births outside of Mumbai. Comparing the planned and actual delivery locations of these women reveals lack of planning and late decision-making concerning where women should spend their final few weeks of pregnancy. For the minority of women who made a postnatal contact, the reasons were predominantly associated with the new baby's health or to arrange sterilisations rather than to check the health of the woman herself.

Using selected dimensions of autonomy as outcome variables, logistic regressions were carried out to identify possible determinants of autonomy, focussing particularly on proxy indicators such as education and employment. The final part of the analysis used care-seeking variables as outcomes in logistic regression models, to assess the importance of autonomy dimensions as predictors of maternal care decision making net of confounding factors.

Determinants of autonomy in Mumbai

From existing studies we know that the relationship between education, employment, wealth and autonomy can be complex in Asia. From previous qualitative work we also know that a woman can become more autonomous as she acquires more children, and according to her position in the household hierarchy. From the Mumbai Safe Motherhood survey data, multivariate logistic regressions with five dimensions of autonomy for outcomes showed that a key factor associated with autonomy in all of its dimensions is the locality in which the woman lives. This is shown by the striking odds ratios presented in Table 3, displaying a marked disparity in autonomy levels by slum pocket. In addition, those pockets whose women are estimated to have high odds of autonomy in one dimension have an extremely low odds in another dimension. For example, women in Pockets E and F show an extremely high odds for freedom of movement and access to resources, but a very low odds for spousal discussion. The inter pocket differences in visiting natal kin could be attributed to the distance of some slum communities from their original sending villages, which tend to be similar for slum residents in a particular locality.

The results for other possible determining factors are in some ways predictable. Wealth and access to media in general enhance autonomy of women, although not in terms of spousal discussion. Women's employment is important for freedom of movement and access to resources, but not for other dimensions of autonomy, and a husband's job is important in determining women's access to resources, but has no effect on other autonomy dimensions. More surprisingly, education has very little effect, except in association with knowing the age at marriage law. Gravida is important, with the expected increase in autonomy as women have more children, although there is no gravida effect on knowledge of marriage law or ability to visit natal kin. Household structure variables were important in some respects, for example being a younger woman in a household restricted freedom of movement and spousal discussion, but not access to resources or ability to visit natal kin. Women's access to resources is however, reduced where the head of household is a father-in-law, or brother-in-law, rather than the woman's own husband. If the woman had not lived in Mumbai before becoming married, the odds of having high freedom of movement and access to resources were significantly reduced, and, unsurprisingly she would have more difficulty in visiting natal kin.

An interesting factor that was not significant in this analysis were the gender composition of families; there was no evidence to suggest that women who have boys are more autonomous than those who have girls. Also nucleation of household structure was unexpectedly not associated with increased autonomy for women. Consistently associated with all dimensions apart from access to resources was language group, with Hindi speaking women always having higher odds of higher autonomy levels. The selection of the five dimensions of autonomy shown in Table 3 was made by including only those elements that were shown to be important in the care seeking analysis that follows.

Effects of dimensions of autonomy on maternal care seeking in Mumbai

Focussing on the three distinct periods of care seeking during the obstetric period, three binary maternal care outcome variables were modelled using the autonomy factors as covariates to test the strength of autonomy as a predictor of care seeking. The following outcomes were constructed as key care seeking indicators:

- three or more antenatal care contacts during pregnancy
- planning a hospital delivery
- at least one postnatal care contact within three months of delivery.

These antenatal and postnatal indicators have been used in many standardised analyses of maternal care (e g. Stewart et al, 1997, Matthews et al, 2001, Kausar et al, 1999), but using intention to deliver in a hospital is less usual than using actual place of delivery. However, the place where a woman actually delivers is often affected by complications and sequences of events during labour which are often quite unpredictable. The place where she plans to deliver is a care seeking intention which is not contaminated by these factors and may be more accurately described as birth preparedness. It might be argued that asking questions about planning after the event might be associated with recall error for a number of reasons. However, using an eight-month recall period, which is substantially shorter than most retrospective surveys on maternity should minimise these effects. Certainly many women in the survey reported planning their delivery in a different place than their actual delivery location, as can be seen from Figure 3.

Table 4 illustrates the effect of autonomy indices on the odds of making three or more antenatal care contacts by showing the estimated logistic regression odds ratios firstly for those women with high freedom of movement autonomy. Thus, when only freedom of movement autonomy is included as an explanatory variable, the odds of making three or more care contacts is 1.82 for those with high freedom of movement compared with an odds ratio of 1.00 for those with low freedom of movement. This is quoted as the 'uncontrolled' effect in Table 4 because other possible explanatory variables such as education and socio-economic background have not been controlled. As shown in the Table, the odds of 1.82 for those with high autonomy in this example are significantly higher than that for women with low autonomy at the 5% level. To continue this example, freedom of movement remains a significant effect of antenatal care seeking even when pocket, education and employment are also included in the model. However, after the inclusion of all possible covariates including access to mass media, household wealth, health knowledge and household structure, freedom of movement can be seen to be unimportant in predicting care seeking.

Other dimensions of autonomy emerge as more persistently related to antenatal care seeking including access to resources, knowledge of marriage law and ability to visit natal kin. The first two of these were in the expected direction such that a higher level of autonomy is associated with more antenatal care contact, but visiting natal kin was associated with less care contact. Turning to birth preparedness, a surprising finding was that no aspect of autonomy was related to planning a hospital birth, although access to resources and knowledge of law were significant when no other controls were applied. Postpartum care seeking was affected by two autonomy dimensions; ability to visit natal kin and spousal communication, the latter emerged as having the highest controlled odds ratio of all at 2.16.

A subsequent binary logistic model was fitted for each care-seeking outcome, which included all of the dimensions of autonomy in the same model, to look at the relative contributions of autonomy and other factors on care behaviour. The results are presented in Table 5. For antenatal care; gravida, education, residence before marriage, exposure to television and which family has responsibility for the delivery are the strongest associated factors, although access to resources is also important and highly significant. Birth preparedness can be linked much more with locality, much less with autonomy or to

exposure to mass media, but gravida, education, wealth, residence before marriage and responsibility for delivery still play an important part. Interestingly this is the only outcome where the age structure of the family is significant, and it is the women who have older women within the same hutment who have higher odds of planning a hospital delivery. Postpartum care seeking has much fewer associated factors. Of the autonomy dimensions spousal communication and visiting kin are significant in predicting a postnatal visit, apart from this only exposure to radio and asset ownership are important, with education, pocket and household structure insignificant.

Discussion

The analysis presented in this paper has provided more evidence for the importance of autonomy in reproductive health. The survey responses have shown that in Mumbai slums the majority of young married women report high levels of autonomy but there is a sizeable minority who face social, financial and physical restrictions. In terms of maternal care, 14% of the study sample did not have the requisite three or more antenatal checks at the time of the survey, and there were even 5% who had no contacts at all. After delivering their baby 60% had no postnatal care contact. Although this is a highly medicalised population who nearly all plan a hospital birth, one quarter of deliveries happen at home in the slum. The results of further multivariate analysis showed that various dimensions of autonomy as measured by groups of direct survey questions are important correlates of antenatal and postnatal care seeking.

The dimensions of autonomy investigated were not all related to care seeking however. Domestic violence does not show a significant association with maternal care seeking behaviour, and nor does voting, participation in adult education, microcredit or a membership of an organisation. Although women's knowledge of the age at marriage law is not normally considered a dimension of autonomy, it has been found to be significant in predicting better child health outcomes in a previous study set in India (Griffiths et al 2001). From the Mumbai survey responses, knowing that there is a minimum age at marriage and accurately quoting it is related to making an adequate number of antenatal care visits.

Associations between autonomy dimensions and other characteristics of women have illuminated the nature of autonomy in the slum context. As expected, gravida is very much associated with many dimensions of a woman's autonomy, although the number of pregnancies that a woman has had does not affect her knowledge of the marriage law or her ability to visit her natal kin. Surprisingly, and contrary to some other studies, none of the commonly used measures such as freedom of movement and access to resources are associated with education. Position in the female age hierarchy of the household is an important correlate of autonomy, as is head of household and residence before marriage. As in a previous study of India and Pakistan (Jejeebhoy 2001), religion was not found to be linked to autonomy in Mumbai. Ability to visit natal kin, although highlighted by previous studies (eg Bloom et al, 2001) may be misleading as an indicator of autonomy in this slum context. It is determined by language group, residence before marriage and slum pocket, and is possibly related to the distance of the rural sending community to Mumbai, rather than any particular aspect of freedom enjoyed by women. Even ability to visit kin, however, is strongly associated with locality in Mumbai, as are all other measured dimensions of autonomy. Thus the most important factor in determining a woman's autonomy is the slum pocket that she lives in. There are very striking differences in levels of autonomy between very closely located slum pockets and this suggests that the potency of very local cultural norms cannot be underestimated. However, once autonomy is taken into account, locality is not related to either antenatal or postnatal care seeking.

To summarise the Mumbai findings on autonomy-related care-seeking, delivery planning 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 the autonomy measures, the role of autonomy cannot be ignored. These findings concur with Bloom et al (2001), who have similar findings on freedom of movement, and Bhatia and Cleland (1996) who find that a composite autonomy index is significantly associated with maternal health. Revisiting the conceptual framework in Figure 1, it can be seen that the factors that predispose women to low autonomy are much as postulated in the diagram, with the notable exception of education and the notable addition of locality. There is evidence from our survey that the hypothesised link between restricted mobility to poor uptake of

services and also the link between lack of resources and poor uptake exist. This is true for antenatal and postnatal care seeking, but delivery planning does not conform to this set of pathways in Mumbai. Moreover, even for pre- and post-natal care, direct effects of individual and household characteristics on care seeking are suggested, unmediated by autonomy. These results are net of the effect of gravida, which is a strong determining factor of both autonomy and maternal care seeking.

The effects of compromised decision-making due to low autonomy on care seeking, indicated in the conceptual framework, are more difficult to draw out from survey data such as this. The significance of the role of spousal communication from our survey and also from previous work (Mumtaz, 2002) suggests that decision-making before making service use options deserves more attention. A promising direction for research could be the application of health belief or health behaviour intention approaches, common in the psychological health literature to maternal care seeking data (eg Sutton, 1997). Classic approaches may, however, need some adaptation, as there can be problems of cultural mismatch in the application of standardised questionnaire schedules.

Understanding the role of autonomy in health decision making may be problematic because of the 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 (eg Jeffery and Jeffery, 1997, Mumtaz, 2002). These authors emphasise 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. Thus autonomy is not seen as desirable for a woman; indeed, autonomous characteristics are to be avoided. In a society where relationships are strongly embedded in family situations and lives are inter-related to the extent that individual decision making is almost not possible, study subjects and some researchers find the notion of autonomy irrelevant and almost insulting. Mumtaz (2002) has suggested the substitution of the notion of 'embededness' or 'social centrality' for autonomy, as it is women who have good relationships with all of their family members that can effectively enjoy more freedom. However, such women are often favoured because they conform to a feminine ideal, for example they bear children, especially boys, and do not cause unnecessary expenses. The analysis of survey

responses cannot capture nuances of family dynamics and relationships, which are likely to be an important part of decision making for seeking care, although some crude family situation variables were created and tested. Such variables were indeed important in determining how 'autonomous' a woman was, but were found to be less important in care seeking.

The creation of a new construct such as 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 and who have natal rather than marital delivery support seek less care less often. Also, those who have no older relatives within the household are less effective care-seekers. These women are often in nuclear family situations, hold more responsibilities and are probably less 'embedded' in the extended family. However, the importance of good access to resources and freedom of movement as key factors associated with maternal care seeking underlined by this study can be seen as supportive to the continuation of interest in direct measures of autonomy.

The emergence of locality-based autonomy from this study concurs with many previous studies (Jejeebhoy and Sathar, 2000, Jejeebhoy 1991). In the context of this study, however, the localities are small and closely spaced, and it is surprising to see the marked differences. The results point to policy implications that emphasise community intervention rather than wider level changes. Furthermore, further community-based research on autonomy is indicated, and the importance of local norms, rather than individual motivations should be explored. Psychological models such as the Health Belief Model, could be replaced by a community belief model in this context, and the investigation of concepts such as social capital could be valid. Social network analysis could also reveal networks that operate to inform healthcare seeking, and comparative qualitative work will be useful in understanding gender relations in different areas.

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Table 1 Household, socioeconomic and autonomy characteristics of sample

Household or socioeconomic factor	Category	Percent of sample	Household or socioeconomic factor	Category	Percent of sample
Age	17-19 years	6.1 %	**Responsibility for delivery**	Natal family	33.0 %
	20-24 years	42.1 %		In-laws family	19.3 %
	25-29 years	33.7 %		Own family	47.7 %
	30-34 years	12.9 %	**Place of residence**	Marital home	92.9 %
	35+ years	5.1 %		Natal home	7.1 %
Gravida	1st pregnancy	24.4 %	**Lived before marriage**	Mumbai	41.7 %
	2nd pregnancy	26.1 %		Elsewhere	58.3 %
	3rd pregnancy	23.5 %	**Head of household**	Husband	78.2 %
	4th pregnancy	13.8 %		Male in-law	8.3 %
	Gravida 5+	12.1 %		Mother-in-law	8.9 %
Family composition after most recent delivery	No living children	0.5 %		Respondent	1.4 %
	No boys (one lone girl)	9.0 %		Mother	1.7 %
	No boys (2+ girls)	9.6 %		Father	1.5 %
	One boy (only)	17.0 %	**Other female family in hut**	None older	73.4 %
	One boy (+girl/s)	31.3 %		One or more older	26.6 %
	Two boys (only)	8.4 %	**Family structure**	Nuclear (1 kitchen)	78.4 %
	Two boys (+girl/s)	17.6 %		Nuclear (2+kitchens)	4.3 %
	Three+ boys (alone)	2.3 %		Extended	17.2 %
	Three+ boys (+girl/s)	4.4 %	**Language group**	Marathi	46.7 %
Women's educational level	No schooling	49.7 %		Hindi	37.3 %
	At least some primary	20.2 %		Others	16.0 %
	Middle school or more	30.1 %	**Exposure to television**	Watches every day	63.2 %
Women's employment	Never worked for money	84.4 %		Watches less often	20.6 %
	Has worked for money	15.6 %		Never watches	16.3 %
Husband's employment	Casual work in shops	58.5 %	**Exposure to radio**	Listens every day	26.7 %
	Casual work in factories	12.1 %		Listens less often	19.6 %
	Permanent job in shops	10.7 %		Never listens	53.7 %
	Other permanent job	13.2 %	**Boils water for drinking**	Always	5.2 %
	Other	5.4 %		Sometimes	34.2 %
Total monthly household income	Up to 1,500 Rupees	11.7 %		Never	60.6 %
	1,500-2,000 Rupees	29.3 %	**Filters water for drinking**	Always	13.8 %
	2,000-3000 Rupees	35.5 %		Sometimes	35.1 %
	More than 3,000 Rupees	23.5 %		Never	51.1 %
Living space in dwelling	Less than 150 square feet	43.8 %	**Slum pocket**	Pocket A NewB	28.9 %
	150 square feet or more	56.2 %		Pocket B NagB	9.2 %
Assets score	None	16.1 %		Pocket C Om	23.4 %
	One	24.4 %		Pocket D Shah	9.8 %
	Two	28.4 %		Pocket E Gautam	10.2 %
	Three or more	31.1 %		Pocket F Laksh	18.5 %

Autonomy dimensions	Percent	Autonomy dimensions	Percent
Freedom of movement (high autonomy)	72.0 %	**Good knowledge of marriage law (high 'autonomy')**	68.9 %
Lack of freedom of movement (low autonomy)	38.0 %	**Poor knowledge of marriage law (low 'autonomy')**	31.1 %
Access to resources (high autonomy)	46.3 %	**High ability to visit natal kin (high autonomy)**	83.7 %
Little access to resources (low autonomy)	53.7 %	**Low ability to visit natal kin (low autonomy)**	16.3 %
Good spousal communication (high autonomy)	85.9 %	**Freedom from of domestic violence (high autonomy)**	54.0%
Poor spousal communication (low autonomy)	14.1 %	**High levels of domestic violence (low autonomy)**	46.0%

Table 2 Selected autonomy survey questions and their factor groupings

Theme heading	Survey questions
Freedom of movement	If a child were ill in your household, would you be allowed to take her/ him to the doctor unaccompanied?
	Can you go and talk with non-familial males without arousing suspicion?
	Can you go alone to shop for food?
Access to resources	Are you able to spend money without consultation with others on the following items: vessels, gifts, sari, children's clothes, fan, beds, trunk? (seven separate questionnaire items)
Spousal communication about health, education and finances	Do you ever discuss children's health problems with your husband?
	Do you ever discuss your own health problems with your husband?
	Do you ever discuss your children's education with your husband?
	Do you ever discuss household finances with your husband?

Table 3 Odds ratios from logistic regression models to predict five dimensions of autonomy

Factor and category		Dimension of autonomy				
		Freedom of movement	**Access to resources**	**Spousal discussion**	**Knowledge of marriage law**	**Can visit natal kin**
Woman ever worked for money	No	1.00	1.00	NS	NS	NS
	Yes	2.88***	3.30***	NS	NS	NS
Husband's job	Casual work in shops	NS	1.00	NS	NS	NS
	Casual work in factories/mills	NS	2.00**	NS	NS	NS
	Permanent job in shops	NS	2.62***	NS	NS	NS
	Permanent job in Govt/factories/mills	NS	2.42***	NS	NS	NS
	Other	NS	1.34	NS	NS	NS
Woman's education	No schooling	NS	NS	NS	1.00	NS
	Incomplete or complete primary	NS	NS	NS	2.03**	NS
	Middle school or more	NS	NS	NS	6.49**	NS
Gravida	1st pregnancy	1.00	1.00	1.00	NS	NS
	2nd pregnancy	1.03	1.82**	1.40	NS	NS
	3rd pregnancy	1.83**	2.58***	2.01**	NS	NS
	4th pregnancy	2.25**	2.15**	3.85***	NS	NS
	Gravida 5+	2.57**	3.70***	2.01	NS	NS
Language group	Hindi	1.00	NS	1.00	1.00	1.00
	Marathi	0.50***	NS	0.32***	0.46***	0.55**
	Other	0.77	NS	0.25***	0.30***	1.19
Female household members						
	None older than respondent	1.00	NS	1.00	NS	NS
	One or two older than respondent	0.21***	NS	0.38***	NS	NS
Head of household	Husband	NS	1.00	NS	NS	NS
	Father in law/brother in law	NS	0.24***	NS	NS	NS
	Mother in law	NS	0.62	NS	NS	NS
	Father	NS	0.27	NS	NS	NS
	Mother	NS	0.84	NS	NS	NS
	Woman herself	NS	3.49	NS	NS	NS
Residence before marriage	Mumbai	1.00	1.00	NS	NS	1.00
	Elsewhere	0.63**	0.65**	NS	NS	0.59**
Monthly household income	<1500 Rupees	1.00	NS	1.00	NS	NS
	1,500-2,000 Rupees	1.09	NS	2.26**	NS	NS
	2,000-3000 Rupees	2.31**	NS	3.44***	NS	NS
	More than 3,000 Rupees	2.23**	NS	3.84***	NS	NS
Mass media	Watches TV every day	1.00	NS	NS	NS	NS
	Watches TV less often	0.73	NS	NS	NS	NS
	Never watches TV	0.29***	NS	NS	NS	NS
	Listens to radio every day	NS	1.00	NS	1.00	1.00
	Listens to radio less often	NS	0.73	NS	0.59*	0.41**
	Never listens to radio	NS	0.32***	NS	0.59**	0.54*
Slum pocket	Pocket A	1.00	1.00	1.00	1.00	1.00
	Pockets B and C	4.33***	9.30***	0.08***	0.31**	0.17***
	Pocket D	1.60	2.10*	0.12***	0.76	0.26***
	Pockets E and F	19.56***	33.01***	0.15***	1.44	0.84

Key to significance levels

Table 4 Separate effect of different dimensions of autonomy on maternal care seeking controlling for blocks of covariates

ANTENATAL CARE SEEKING: Odds ratios for 3+ antenatal care contacts					
Block of covariates controlled	**Freedom of movement**	**Access to resources**	**Spousal discussion**	**Knowledge of law**	**Can visit natal kin**
Uncontrolled	**1.82****	**2.11*****	**0.90**	**2.86*****	**0.50***
Pocket	1.49*	1.86***	1.25	3.37***	0.64
Education	1.73**	1.92***	1.02	2.08***	0.49*
Employment	1.90**	1.90***	0.94	2.83***	0.52**
All covariates controlled	**1.55**	**1.69*****	**0.86**	**1.90****	**0.57***
BIRTH PREPAREDNESS:Odds ratios for planning a hospital delivery					
Uncontrolled	**1.07**	**2.03*****	**0.53**	**1.59****	**0.50***
Pocket	0.80	1.38	0.92	2.21***	0.94
Education	0.98	1.81**	0.58	1.05	0.49*
Employment	1.10	2.22**	0.54	1.58*	0.52*
All covariates controlled	**0.66**	**1.29**	**1.17**	**0.95**	**1.14**
POSTPARTUM CARE SEEKING:Odds ratios for at least one postnatal care contact					
Uncontrolled	**0.84**	**1.24**	**1.87*****	**0.91**	**1.42***
Pocket	0.70	1.06	2.22***	0.91	1.55**
Education	0.83	1.24	1.86***	0.89	1.37*
Employment	0.84	1.23	1.86**	0.90	1.37*
All covariates controlled	**0.75**	**1.14**	**2.16****	**0.94**	**1.52****

Table 5 Odds ratios from logistic regression models to predict maternal care seeking in antenatal, intrapartum and postpartum periods

Factor and category	Antenatal careseeking	Birth preparedness	Postpartum careseeking
Access to resources			
Low autonomy	1.00	NS	NS
High autonomy	2.18***	NS	NS
Spousal communication			
Low autonomy	NS	NS	1.00
High autonomy	NS	NS	2.20***
Knowledge of age at marriage law			
No	1.00	NS	NS
Yes	1.82**	NS	NS
Visiting natal kin			
Not allowed	1.00	NS	1.00
Can go, or can go with permission	0.34**	NS	1.71**
Exposure to mass media (TV)			
Watches TV every day	1.00	NS	NS
Watches TV less often	0.98	NS	NS
Never watches TV	0.39***	NS	NS
Exposure to mass media (radio)			
Listens to radio every day	NS	NS	1.00
Listens to radio less often	NS	NS	2.08***
Never listens to radio	NS	NS	2.10***
Women's education			
No schooling	1.00	1.00	NS
Incomplete or complete primary	1.40	1.76	NS
Middle school or more	5.50***	3.48***	NS
Assets score			
None	NS	1.00	1.00
One	NS	1.95	2.29***
Two	NS	1.49	1.99***
Three or more	NS	4.43***	3.28***
Gravida			
1st pregnancy	1.00	1.00	NS
2nd pregnancy	0.42**	0.34**	NS
3rd pregnancy	0.70	0.37**	NS
4th pregnancy	0.49	0.16***	NS
Gravida 5+	0.27***	0.22***	NS
Language group			
Hindi	NS	1.00	NS
Marathi	NS	0.57	NS
Other	NS	0.41**	NS
Older female household members			
None older than respondent	NS	1.00	NS
One or two older than respondent	NS	3.32***	NS
Residence before marriage			
Mumbai	1.00	1.00	NS
Elsewhere	0.42**	0.48**	NS
Responsibility for delivery			
Natal family	1.00	1.00	NS
In-laws family	2.48***	0.88	NS
Own family	6.67***	8.27***	NS
Slum pocket			
Pocket A	NS	1.00	NS
Pockets B and C	NS	10.16***	NS
Pocket D	NS	2.84**	NS
Pocket E	NS	1.20	NS
Pocket F	NS	4.75**	NS

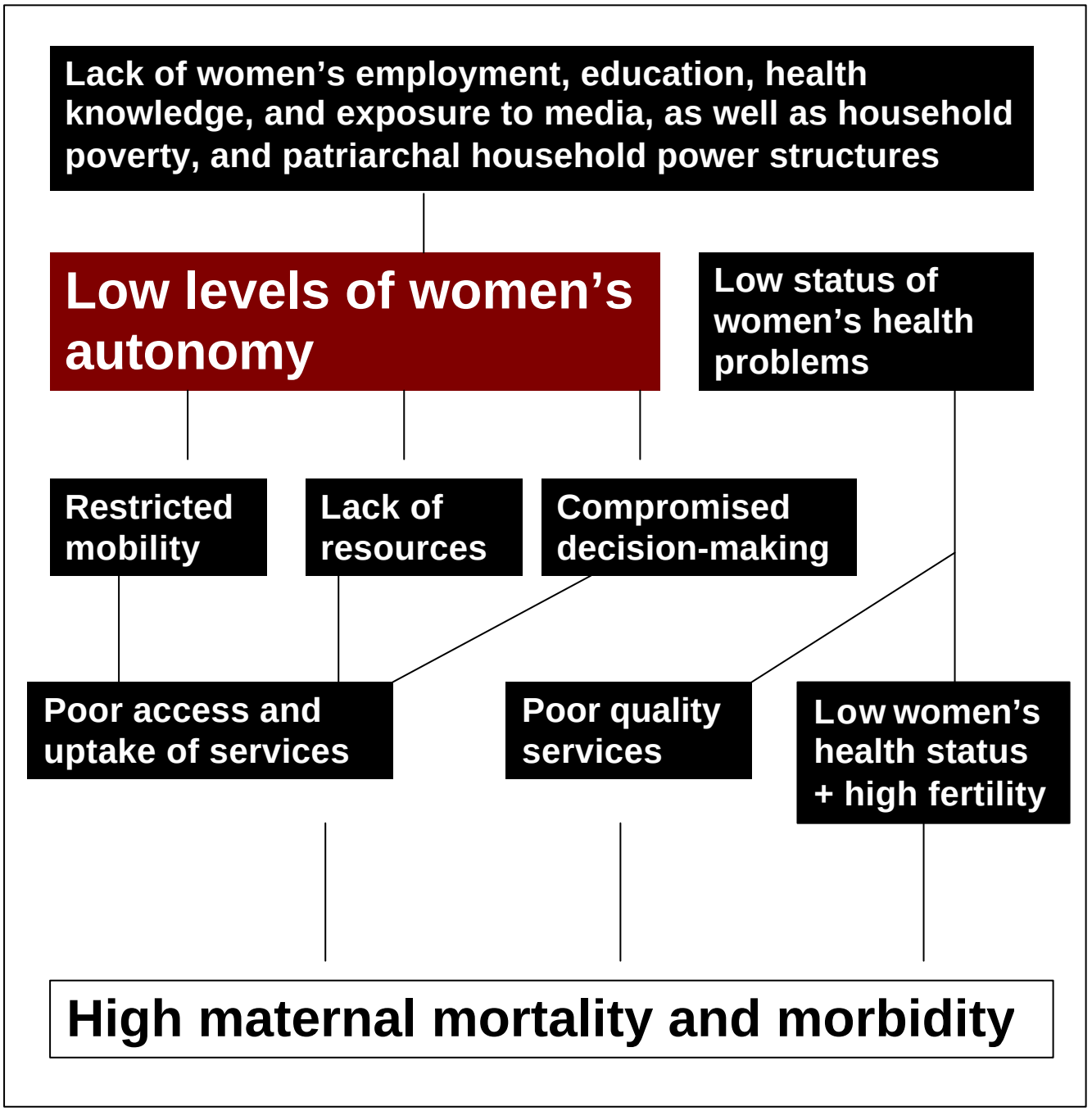


Figure 1 Hypothesised negative effect of women's autonomy and status on maternal health

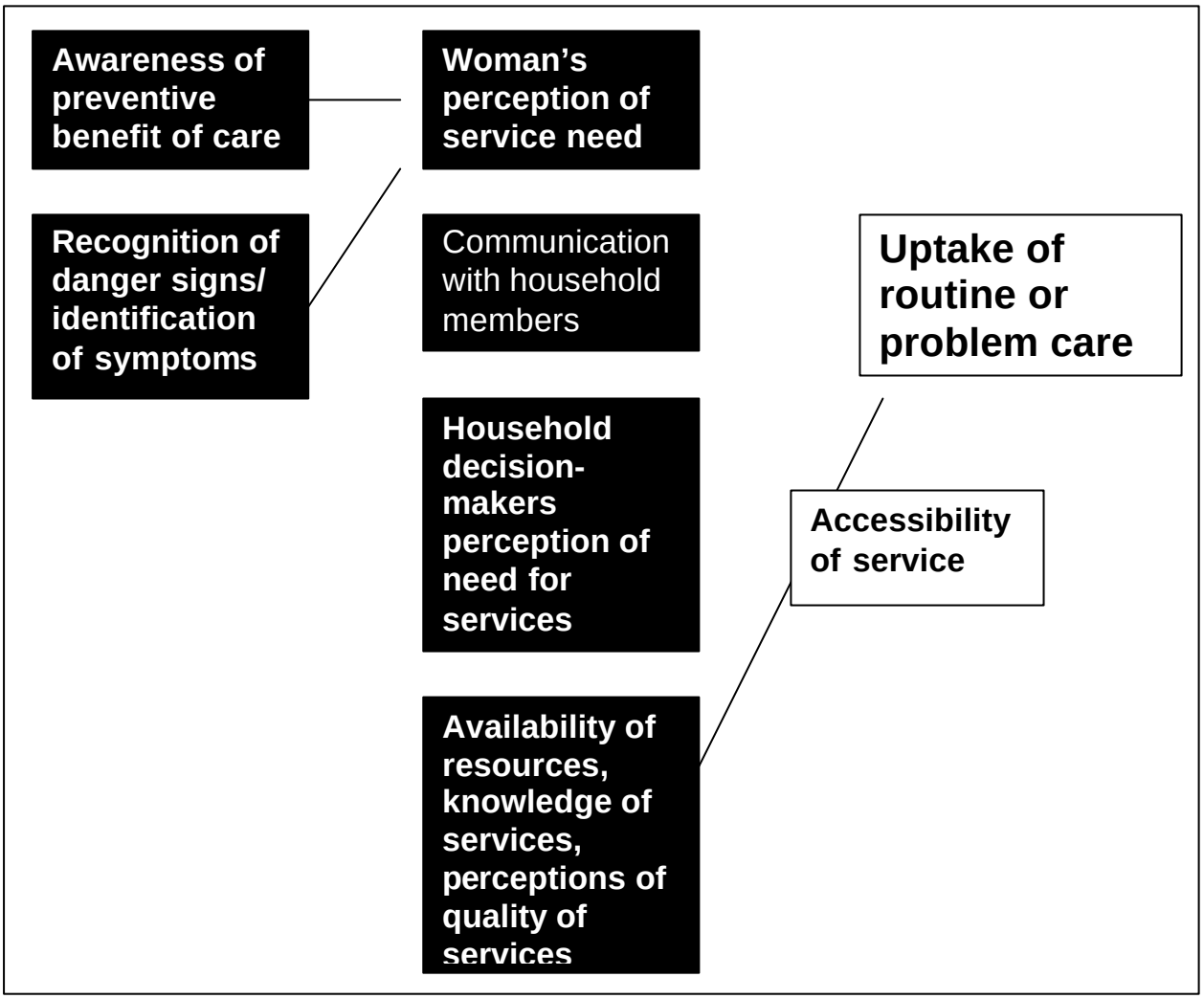
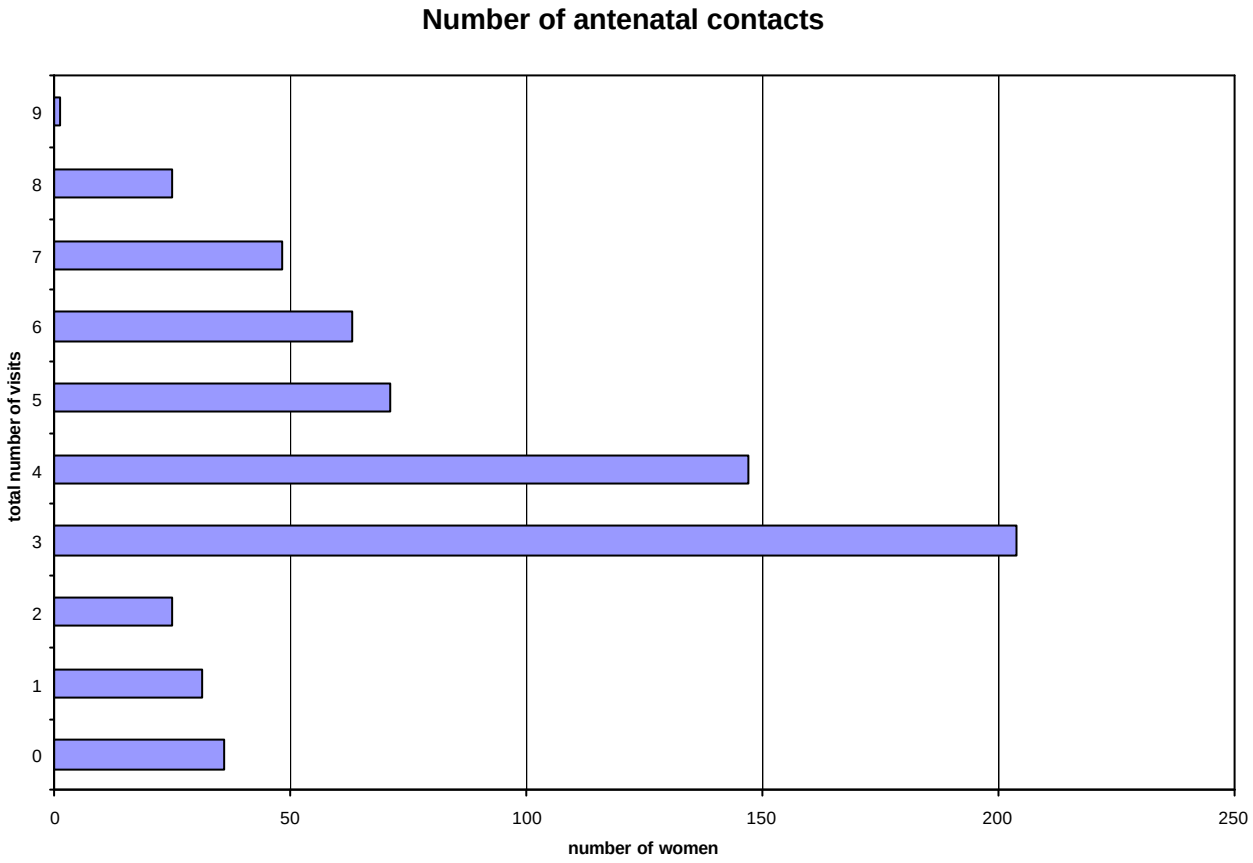
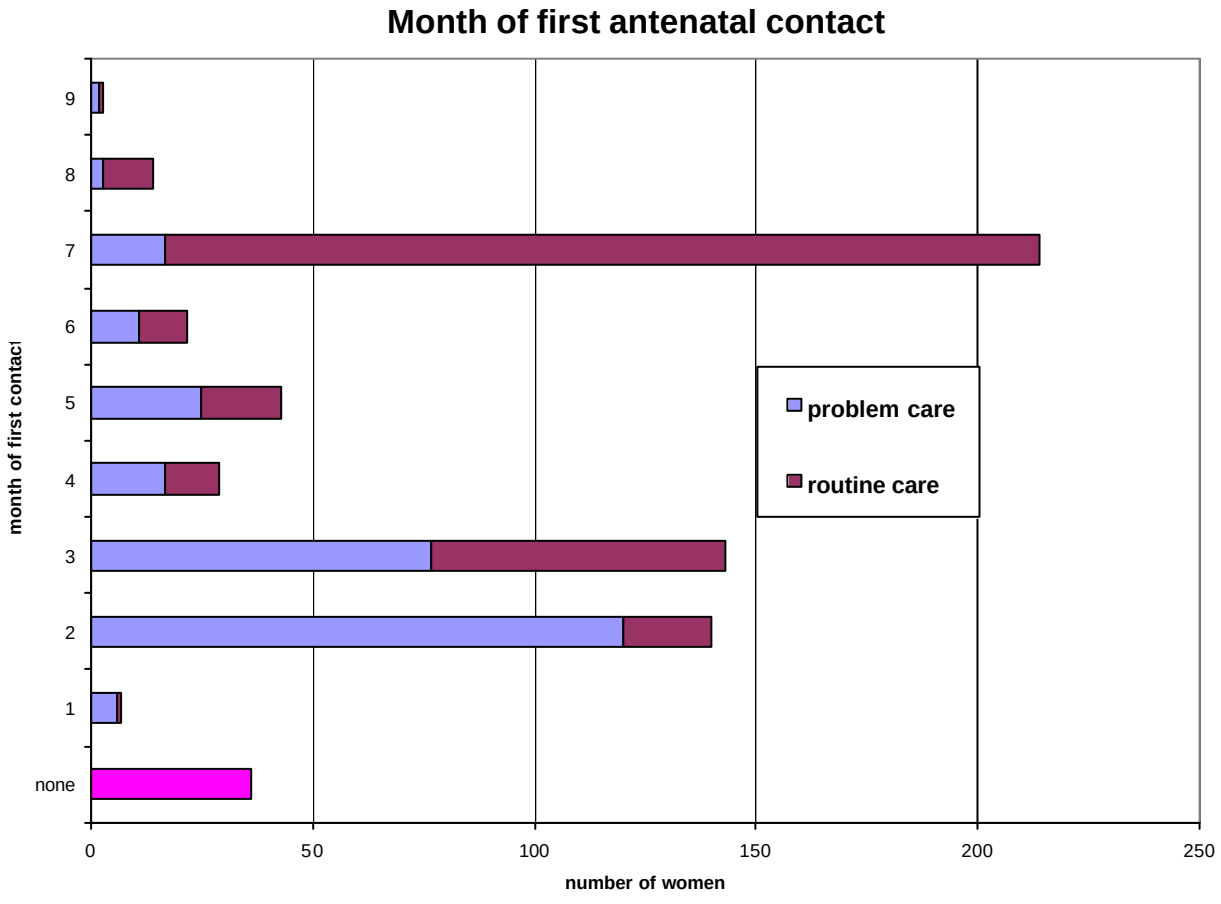


Figure 2 **Decision-making processes for uptake of maternal healthcare services**

Figure 3 Number and timing of antenatal care visits





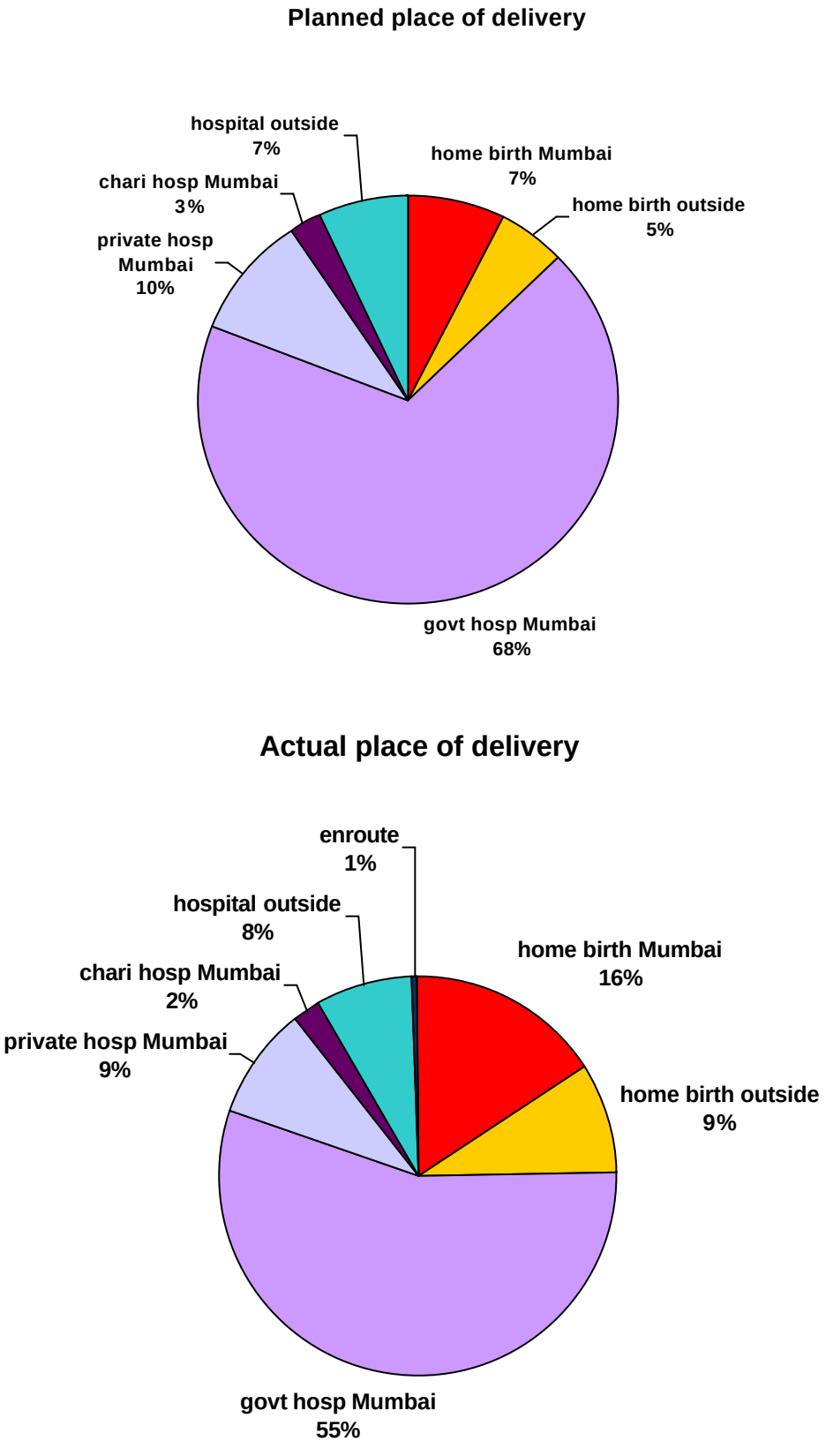


Figure 4 Planned and actual delivery locations