

# The effect of women's decision-making power on maternal health services uptake: evidence from Pakistan

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A large body of research has explored the links between women's decision making and their uptake of maternal health services, but the evidence so far is inconclusive. This study uses the Pakistan Social and Living Standards Measurement Survey to examine the influence of household decision making on women's uptake of maternal health services. We find that women's decision-making power has a significant positive correlation with maternal health services uptake and that influential males' decision-making power has the opposite effect, after controlling for socio-economic indicators and supply-side conditions. Our findings suggest that empowering women and increasing their ability to make decisions may increase their uptake of maternal health services. They also suggest that policies directed toward improving women's utilization of maternal health services in Pakistan must target men as well as women.

**Keywords** Women's decision-making power, maternal health, women's empowerment, Pakistan, South Asia

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## KEY MESSAGES

- Women's decision-making power plays a significant role in determining uptake of maternal health services in Pakistan: women with more decision-making power are more likely to use these services.
- Influential household male members also play a crucial role in women's use of maternal health services.
- A multi-sector approach is needed to increase maternal health service use; in addition to the supply side, demand-side interventions should target other household members, including influential males, to increase their awareness and appreciation of the benefits of such services.

## Introduction

The Pakistan Millennium Development Goals Report (2010), signed by the Government of Pakistan and the United Nations Development Programme (UNDP), highlighted the slow progress toward and challenges in achieving the Millennium Development Goals (MDGs) in Pakistan. Six indicators were

selected to monitor the progress of MDG 4 (reduce child mortality) and MDG 5 (improve maternal health). Of these indicators, the under-five mortality rate reduced from 140 deaths per 1000 live births in 1990–91 to 100 deaths per 1000 live births in 2004–05; the infant mortality rate reduced from 102 to 73 per 1000 live births over the same period. The report highlights 'development amidst crisis' and the need to

understand why there has been such slow progress, and the most effective ways to move forward.

This paper looks at the utilization of maternal health services, including prenatal care, skilled birth attendance, institutional delivery and postnatal care, which have proven their merit in reducing infant and maternal morbidity and mortality in developed as well as developing countries. The paper examines the determinants of the uptake of maternal health services and focuses in particular on women's decision-making power.

There are two important reasons to examine the relationship between women's decision-making power and their uptake of maternal health services. First, women with more decision-making power may be more likely to use maternal health services. In Pakistan, male dominance and prevailing traditional Islamic and cultural restrictions on women curtail women's decision making in many aspects of their lives, including education, employment, use of medical services, and other economic and social activities (Amin 1995; Hakim and Aziz 1998). Thus, if a woman has little decision-making power in her household and her husband or the household head discourages her from using maternal health services, she will be unlikely to use those services (Mumtaz and Salway 2007). Secondly, a large body of research has attempted to explore intra-household decision-making power and its links with human development (Thomas 1990; Felkey 2005; Basu 2006; Lancaster *et al.* 2006). Though there is some evidence of a positive relationship between women's decision-making power and children's schooling, particularly in the literature on conditional and unconditional cash transfers to women as an instrument for improving women's decision-making power (Duflo 2003; Gitter and Barham 2008; Holmes *et al.* 2010), the evidence linking women's decision making and women's maternal health services uptake is still mixed (Bhatia and Cleland 1995; Sathar and Kazi 1997; Bloom *et al.* 2001; Fikree *et al.* 2001; Matsumura and Gubhaju 2001; Mumtaz and Salway 2005).

More empirical evidence is needed to guide policy makers in their search for a more integrated approach to designing policies and other interventions that will improve women's use of maternal health services, reduce child mortality and improve maternal health in line with the MDGs. In Pakistan, the traditional approach has been to strengthen the supply side of services delivery, such as the Lady Health Workers programme. However, despite the increased coverage by Lady Health Workers, from 33.6% in 2000–02 to 80% in 2004–05, progress on maternal health services uptake is still much lower than in other countries, even countries with similar gross domestic product (GDP) (Government of Pakistan 2010). Thus, understanding the constraints from the demand side—financial and geographic as well as cultural—will be crucial for the better design and implementation of programmes. Sometimes women's decisions about whether to seek services are not in their own control but are influenced by others in their families and households (Becker 1996; Beegle *et al.* 2001); thus it is important to look at how other household members' decision-making power can influence women's behaviour. In these circumstances, policies need to target other family members as well as the women themselves.

## Methods

### Data

The data used are from the Pakistan Social and Living Standards Measurement Survey (PSLM) 2005–06. A two-stage stratified sample design was adopted for this survey. Urban populations in large cities, urban populations in a group of small cities and rural populations in districts were considered as separate strata. Enumeration blocks in the urban domain and mouzas/dehs/villages in the rural domain were used as primary sampling units (PSUs). Sample PSUs from each stratum/sub-stratum were selected by the probability proportional to size sampling method. Households within each sample PSU were considered as secondary sampling units (SSUs). Sixteen and 12 households were selected from each sample village and enumeration block, respectively, using a random systematic sampling scheme with a random start. Non-responsive households were replaced during the survey to ensure national representativeness.

The questionnaire consisted of a range of social sector issues, including the maternal history of all women between 15 and 49 years old. Details about maternity health services utilization were collected for women who had delivered a child within 3 years of the date of interview. After excluding cases with missing values, a total sample of 7163 women were included in the study.

### Dependent variables

Four dependent variables were used to measure maternal health services uptake: prenatal care, institutional birth, skilled birth attendance and postnatal care. All were treated as dichotomous variables indicating the use or non-use of services. Institutional birth is defined as 1 if birth takes place in a government or private hospital or clinic, and 0 otherwise; skilled birth attendance is defined as 1 if the pregnant woman receives assistance from a midwife, doctor, nurse or other health professional, and as 0 if assistance is received from a family member, relatives, neighbours, traditional birth attendants or Lady Health Workers. Women who reported giving birth with traditional birth attendants or Lady Health Workers are not considered to have been supported by skilled birth attendants, because these cadres may not meet the standard or definition that the World Health Organization (WHO 2004) has for a skilled birth attendant (someone trained to proficiency in the skills needed to manage normal or uncomplicated pregnancies, childbirth and the immediate postnatal period, and the skills needed to identify, manage and refer complications in women and newborns to other experts).<sup>1</sup> Ideally, we would like to have information about the number of prenatal visits and postnatal visits for each woman, particularly prenatal visits, which is a more meaningful measure of service utilization (Habibov and Fan 2009). However, the PSLM data do not include such information.

### Construction of indices of women's decision-making power

There are eight questions in the PSLM regarding household decision making about women's education, employment, birth control methods, having more children, and household food,

clothing, medical treatment and recreation expenditures. The answers to these questions can be broadly categorized as 'woman decides alone', 'household head or husband decides alone', 'household head or husband and woman jointly decide' and 'other family members decide'.<sup>2</sup>

Since the respondents are married women, the question about education most likely reflects the decision-making dynamics in each woman's family of birth, and thus has limited relevance in her current situation. The questions regarding employment are relevant; however, the labour force participation rate is only about 10% for females in Pakistan, including unpaid family workers (Hou 2010). Since the low labour force participation rate is driven more by the overall culture and the extremely limited number of job opportunities for women in most areas of Pakistan, rather than by women's decision-making power within the household, we did not include these questions in the construction of the decision-making index. The third and the fourth questions are about birth control methods and number of children. These two questions are important in measuring women's decision-making power. However, in Pakistan, these two measures probably only become relevant in decision making after the birth of at least one son (Hamid *et al.* 2009; Hamid *et al.* 2010). Thus, in families still trying to achieve the desired goal of having at least one son, women could perceive their decision-making power as either active or obedient. Since we cannot directly factor these concerns into the construction of the decision power index, we did not include these two questions either.

As a result, our analysis of women's decision-making power is constructed on the basis of four questions about household expenditures on food, clothing, medical treatment and recreation. A woman is considered to have decision-making power on a particular issue if she makes decisions jointly or by herself (equal to 1). We have also done the calculations by assigning 'jointly making the decision' a weight of 0.5 or 0, and the results are very similar (available upon request). On the contrary, in the case of the decision-making power of influential male household members (husbands or household heads), only decisions made by the man alone are assigned 1, to indicate males' dominance in decision making on those issues.

Table 1 presents the descriptive results. The composite scores were constructed with four raw indicators for women and influential males separately, reflecting the degree of their decision-making power. The scale for both scores ranges from 0 to 4, and the summary statistics are appended to the bottom of Table 1. On average, women's decision-making power (making decisions alone or jointly) is 1.12, whereas influential male household members' decision-making power (making decisions alone) is 1.37.

### Other control variables

Other control variables were selected using frameworks from the literature (McCarthy and Maine 1992; Fan and Habibov 2009), including women's age, women's age during her most recent pregnancy, education, employment status in the month before the interview, and dummies for first-time pregnancy and experience with the death of at least one child. We used women's age at time of interview and the year of the most recent pregnancy to derive women's age during that pregnancy.

**Table 1** Summary statistics for decision making

Indexes	Woman (decides alone or jointly decide)	Influential male household member (decides alone)
Food	27.99%	38.15%
Clothing	34.78%	32.55%
Medical	26.04%	31.01%
Recreation	22.88%	33.98%
Composite score [mean (sd)]	1.12 (1.3)	1.37 (1.6)

Notes: sd = standard deviation.

This variable is used in the regression of women's maternal health services uptake because this is the age when they were pregnant. Women's age at the interview is used in the regression of women's decision-making power because they are both measures at the time of interview. In addition, the regressions control for the gender of the household head, age at interview, education, employment status, household size, per adult equivalent expenditure and rural/urban indicators.

Supply-side variables such as availability of a health care facility, distance to the nearest facility and quality of health care services rendered or public perception of quality are also important determinants of maternal services uptake. However, the PSLM data do not include this information, nor could we merge our data with other data that include such information. Instead, in order to capture the supply-side factors, we computed the average utilization rate of prenatal services at the district level. This is in theory an endogenous variable, because the woman examined also contributes to the average of prenatal service utilization at the district level. However, districts are large administrative tiers in Pakistan, and the average number of examined women in each district in the dataset is 120. Thus, whether the woman examined was included in the average calculation or not makes little difference. Provincial fixed effect is also controlled. Many variables in the model could be multi-collinear. Following the methods suggested by Habibov and Afandi (2009), we tested the possibility of multi-collinearity and the results suggested that multi-collinearity is not a concern in this regression (the results are available upon request). Table 2 reports summary statistics for these control variables.

## Results

### Descriptive analysis

Although much effort has been put into improving maternal health services in Pakistan, the uptake of services is far from optimal. In fact, the summary statistics show that the rate of maternal health services uptake is very low (Table 2). The averages of prenatal care and postnatal care utilization are only 50.3% and 21.4%, respectively. Though the skilled birth attendance rate is 62.5%, only 31.2% of births take place in institutions. The maternal health services uptake rate is correlated with welfare status, as measured by the monthly consumption per adult equivalent (Figure 1). The poor use significantly fewer maternal health services than the rich,

**Table 2** Summary statistics for other control variables

<b>Variables</b>	
<b>Outcome variables</b>	
Prenatal care (%)	50.31
Institutional birth (%)	31.15
Skilled birth attendance (%)	62.51
Postnatal care (%)	21.44
<b>Explanatory variables</b>	
First time giving birth (%)	18.74
Age of mother while pregnant [mean (sd)]	27.92 (6.4)
Age of mother at interview [mean (sd)]	28.85 (6.5)
Mother has experienced death of a child (%)	23.17
Mother's education:	
Never attended school or less than Class 1 (%)	71.13
Class 1–5 (%)	10.88
Class 6–8 (%)	4.55
Class 9–10 (%)	7.26
Class 11 & beyond (%)	6.18
Mother employed (%)	19.53
Head female (%)	4.80
Head's education:	
Never attended school or less than Class 1 (%)	49.02
Class 1–5 (%)	16.81
Class 6–8 (%)	9.48
Class 9–10 (%)	12.75
Class 11 & beyond (%)	11.95
Head employed (%)	83.07
Household size [mean (sd)]	9.43 (5.1)
Consumption per adult equivalent (P.E.A) [mean (sd)]	1407.94 (1083.4)
District prenatal care utilization rate [mean (sd)]	0.48 (0.2)
Rural (%)	65.21
Province:	
Punjab (%)	36.21
Sindh (%)	25.98
N.W.F.P. (%)	23.91
Balochistan (%)	13.89

particularly prenatal and postnatal services and institutional delivery.

### Regression analysis

Estimation results investigating the determinants of decision-making power and maternal health services uptake are reported for women and influential male household members separately. Tables 3 and 4 report coefficients for women's decision-making power and influential males' decision-making power when the composite score is used in the regression. In order to account for the complex survey design, all standard errors presented in Tables 3 and 4 are Huber corrected (Raudenbush and Bryk 2002).

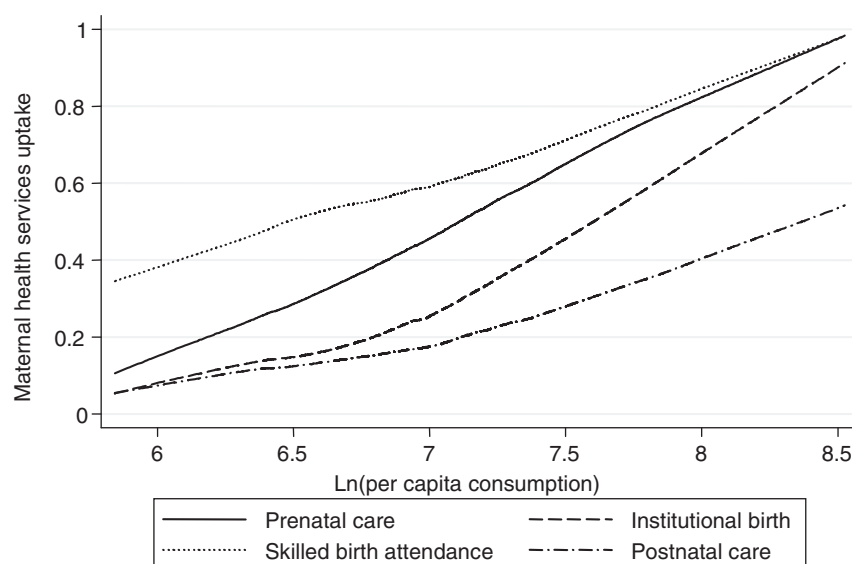
### Woman's decision-making power

Column 1 of Table 3 presents the coefficient estimates from the ordinary least squares (OLS) model fitted on the composite score for women's decision-making power. As expected, women who are older, have more education and are employed have greater decision-making power in their households. In addition, women living in more affluent households, female-headed households or urban areas have greater decision-making power. Place of residence matters significantly in both statistics and magnitude.

Columns 2 to 5 present the relationship between the four outcome indicators of maternal health services utilization and women's decision-making power. Logit models are used and the odds ratios are presented. Women's decision-making power has a strong and positive association with prenatal care utilization, skilled birth attendance and postnatal care. An increase of one point in the composite score of women's decision-making power indicates a rise in use of prenatal care of 10%, skilled birth attendance of 5% and postnatal care of 6%. One point in the composite score on women's decision-making is equivalent to participating in decision making on one dimension of consumption (food, clothing, medical treatment or recreation). Therefore, the potential effect on maternal health services utilization from improving women's decision-making power could be quite large if women participate in all dimensions of the consumption decision making. However, the association with institutional delivery is not significant. These results do not imply that institutional delivery would increase even if women had greater decision-making power, probably for reasons related to both financial and physical access.

Consistent with findings from other studies, both women's education and economic status contribute to higher maternal health services utilization. Supply-side factors matter significantly: with a 1% increase in the district-level prenatal utilization rate, women are 14.8% more likely to use prenatal services and 3.3% times more likely to have an institutional delivery. However, even with an explicit control for the district-level prenatal utilization rate, a significant negative rural impact persists. This implies that other factors such as social and cultural customs in rural areas may prevent women from consulting with maternal health professionals.

We also find a significant association between first-time pregnancy and maternal health services utilization. First-time pregnancy increases the likelihood that women will seek various maternal health services by 1.5 to 1.9 times. This result suggests that women who have previously given birth rely more on experience than on professional care; also, it is likely that such women have fewer resources in the form of time and money to seek formal health care (Chakrabarti and Chaudhuri 2007). It further suggests that women in their first pregnancies endeavour to overcome financial, physical and social barriers to seek maternal health services. The age of the woman at the time of delivery is only marginally correlated with prenatal care and skilled birth attendance. As women become older, their demand for health services may decline as their experiences and opportunity costs increase. Finally, pregnant women who have experienced a child's death are not significantly more likely to use any of the maternal health services.



**Figure 1** Women's maternal health services uptake and per capita consumption. *Note:* Per capita consumption is defined as per equivalent adult consumption.

#### Decision-making by influential male household members

Although the literature on the relationship between maternal health services uptake and decision-making power has been focused on women, we also investigate how influential male household members may influence or determine women's maternal health service uptake. The same analysis in Table 3 is executed with measures of influential males' decision-making power (composite score index), and the results presented in odds ratios are reported in Table 4.

Influential males' decision-making power, measured by the composite score, is negatively and significantly correlated with all maternal health services uptake, except institutional birth. This finding implies that males play a critical role in determining maternal health services uptake in Pakistan, which should therefore be taken into account in policies directed toward improving maternal health services uptake and achieving the MDGs on maternal health in Pakistan.

#### Study limitation and robustness check

The limitations of the measurement of decision-making power need to be acknowledged. First, the questions about decision making are only included in the questionnaires administered to women, so the perceptions of both women's decision-making power and influential household males' decision-making power are all those of the women. It would be useful for both questionnaires to ask the same questions so that researchers can analyse males' and females' different perceptions of their decision-making power and whether there are consistent trends. However, such surveys are usually more costly to implement. Secondly, the literature suggests that women who have decision-making freedom in their parental home, particularly about their marriage, carry this ability with them to their new home and are better able to negotiate decisions about their fertility (Hamid *et al.* 2011). However, we do not have information on the extent to which women participated in their marriage decision. Thirdly, Mumtaz and Salway (2007) reveal

that the authority to make decisions related to pregnancy and antenatal care is sometimes located in older women, usually the mother-in-law, rather than the husbands and wives who are more intimately involved. However, a woman with a strong network of inter-personal relationships, both with her husband, marital family and natal families, is in a stronger position to exert her agency (Mumtaz and Salway 2007). Such women are more likely to exert their preferences in other household decisions as well. This study suggests that future questionnaires to address women's decision making in Pakistan should take into account the local context and the complexity of women's relationships, examining in greater depth women's roles, activities and relationship in both the marital family and natal family to better understand this complexity.

Despite the data limitations, the study has used various methods to construct the composite score to capture women's decision-making power, including using the four individual indicators for women's and influential household males' decision-making power in the regression. The earlier version of the study also uses the composite scores of the eight raw indicators. The main results hold in all the cases, and the results are available upon request.

#### Discussion and policy implications

This paper examines the determinants of women's maternal health services uptake, particularly the association between women's decision-making power, influential household males' decision-making power and maternal health services uptake in Pakistan. There are two main findings. First, women's decision-making power plays a significant role in determining maternal health services uptake: when women have more decision-making power, they are more likely to use maternal health services, after controlling for other factors. However, although women's decision-making power is positively and

**Table 3** Determinants of women's decision-making power and maternal health services uptake

	OLS	Logit (Odds Ratios)			
	Decision-making power (1)	Prenatal care (2)	Institutional birth (3)	Skilled attendance (4)	Postnatal care (5)
<b>Women's education:</b>					
Class 1–5	0.16*** [3.2]	1.76*** [6.3]	1.60*** [5.1]	1.62*** [5.0]	1.67*** [5.3]
Class 6–8	0.22*** [2.8]	2.44*** [6.5]	1.50*** [3.1]	1.60*** [3.3]	1.52*** [3.0]
Class 9–10	0.34*** [4.8]	3.92*** [9.7]	2.22*** [7.0]	2.58*** [7.0]	2.38*** [7.5]
Class 11 & beyond	0.22*** [2.8]	6.92*** [8.9]	3.82*** [9.3]	3.91*** [7.1]	2.40*** [6.7]
<b>Employed</b>	0.12*** [2.9]	0.79*** [3.3]	0.72*** [3.9]	1.1 [1.4]	0.99 [0.1]
Age	0.01** [2.3]				
Head female	0.92*** [10.4]	1.12 [0.8]	1.34** [2.0]	1.01 [0.1]	1.17 [1.0]
Household size	0.01** [2.0]	0.99 [1.5]	1.01 [1.0]	1.02*** [3.7]	1.08*** [11.8]
Ln(P.E.A. consumption)	0.04 [1.1]	2.20*** [10.1]	2.60*** [11.5]	1.69*** [6.9]	2.01*** [8.7]
Rural	−0.15*** [4.4]	0.64*** [7.2]	0.56*** [8.9]	0.65*** [6.9]	0.70*** [5.0]
<b>Women's decision-making power (Composite score)</b>		<b>1.10*** [4.2]</b>	<b>0.98 [0.8]</b>	<b>1.06*** [2.6]</b>	<b>1.06** [2.3]</b>
First time giving birth		1.68*** [6.5]	1.94*** [8.1]	1.48*** [5.0]	1.61*** [5.7]
Age at birth delivery		0.99** [2.2]	1.01 [1.5]	1 [0.5]	0.99* [1.9]
Mother has experienced death of a child		0.93 [1.0]	1 [0.0]	1.07 [1.1]	0.99 [0.1]
District prenatal care utilization rate		14.80*** [14.8]	3.31*** [6.5]	3.88*** [7.9]	5.99*** [8.8]
Observations	7163	7163	7066	7146	7163
R-squared	0.1				

Notes: Robust t statistics in brackets in column 1, and robust z statistics in brackets in columns 2–5.

\*significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

Default category for education is 'Never attended school or less than Class 1'.

Other variables controlled but not reported include household head's education level, employment status and province fixed effects, and constant term.

'P.E.A. consumption' stands for per equivalent adult consumption.

significantly associated with prenatal and postnatal services and skilled birth attendance, the association with institutional birth is insignificant. Secondly, we find that influential males in the household significantly influence women's maternal health services utilization. In households where the males exert more decision-making power, women tend to use fewer maternal health services. This implies that their perception of the importance of maternal health services use might be quite

low and that they may discourage women from seeking such services. The results are robust and consistent across different indices developed to measure the decision-making power of women and influential male household members. The findings suggest the following policy implications, particularly for the health sector, but also for the broader development community.

Though maternal services uptake seems like a health service utilization issue, the findings suggest that gender dynamics and

**Table 4** Determinants of influential male household members' decision-making power and its correlation with maternal health services uptake

	OLS	Logit (Odds Ratios)			
	Decision-making power (1)	Prenatal care (2)	Institutional birth (3)	Skilled attendance (4)	Postnatal care (5)
<b>Women's education:</b>					
Class 1–5	–0.27*** [4.8]	1.71*** [5.9]	1.62*** [5.2]	1.60*** [4.9]	1.61*** [4.8]
Class 6–8	–0.25*** [3.1]	2.33*** [6.0]	1.53*** [3.2]	1.64*** [3.4]	1.51*** [2.9]
Class 9–10	–0.37*** [5.3]	3.82*** [9.4]	2.32*** [7.3]	2.58*** [6.8]	2.37*** [7.3]
Class 11 & beyond	–0.47*** [6.3]	6.70*** [8.6]	3.87*** [9.3]	3.84*** [6.8]	2.34*** [6.4]
<b>Employed</b>	–0.18*** [3.8]	0.77*** [3.5]	0.73*** [3.8]	1.1 [1.3]	0.99 [0.1]
Age	0.002 [0.7]				
Head female	–1.01*** [17.9]	1.37 [1.5]	1.33 [1.3]	0.93 [0.3]	1.23 [0.9]
Household size	–0.01*** [4.0]	0.99* [1.8]	1 [0.5]	1.02*** [3.4]	1.08*** [11.4]
Ln(P.E.A. consumption)	0.02 [0.3]	2.19*** [9.9]	2.49*** [10.9]	1.64*** [6.5]	2.00*** [8.4]
Rural	0.27*** [7.0]	0.64*** [7.1]	0.56*** [8.8]	0.65*** [6.6]	0.71*** [4.7]
<b>Influential males' decision-making power (Composite score)</b>		<b>0.90*** [5.5]</b>	<b>1.01 [0.5]</b>	<b>0.92*** [4.1]</b>	<b>0.93*** [5.3]</b>
First time giving birth		1.65*** [6.2]	1.91*** [7.8]	1.50*** [5.0]	1.57*** [5.2]
Age at birth delivery		0.99** [2.3]	1.01 [1.5]	1 [0.7]	0.99** [2.1]
Mother has experienced death of a child		0.93 [1.1]	1 [0.0]	1.07 [1.0]	0.97 [0.4]
District prenatal care utilization rate		16.00*** [14.9]	3.26*** [6.3]	4.01*** [8.0]	6.14*** [8.7]
Observations	6963	6963	6866	6946	6963
R-squared	0.2				

Notes: Robust t statistics in brackets in column 1, and robust z statistics in brackets in columns 2–5.

\*significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%.

Default category for education is 'Never attended school or less than Class 1'.

Other variables controlled but not reported include household head's education level, employment status and province fixed effects, and constant term.

'P.E.A. consumption' stands for per equivalent adult consumption.

aspects of women's ability to make decisions are important factors for health policy makers to consider. The finding that women's weak decision-making power is one barrier for women in seeking maternal services suggests that improving the use of maternal health services requires a multi-sector approach. This recommendation is also supported by Ahmed *et al.* (2010), who emphasize that efforts to expand maternal health services utilization can be accelerated by parallel

investment in programmes aimed at poverty reduction, universal primary education and women's empowerment; and by Mumtaz and Sulway (2009), who call for moving beyond the autonomy paradigm to improve the utilization of maternal health services.

Pakistan has initiated a national cash transfer programme—the Benazir Income Support Program (BISP)—which delivers cash to the female heads of eligible families in the amount of

PK Rs. 1000 (US\$12) per month. The BISP is a national programme targeted to the poor, who are identified by a poverty scorecard, a proxy means-based targeting instrument. Launched in 2008 with the objective to mitigate the impact of the food price crisis on the poor, the programme has become the nation's flagship poverty alleviation programme and the platform for other targeted human development interventions to help the poor and the vulnerable emerge from poverty (World Bank 2011). One key feature of the programme is to transfer cash directly to ever-married women in the eligible families. Experiences from cash transfer and conditional cash transfer programmes elsewhere have shown that transferring cash to women in households can increase their decision-making power (Schultz 1990; Thomas 1990; Gitter and Barham 2008; Holmes *et al.* 2010). A preliminary study of BISP beneficiaries has produced embryonic evidence that the BISP transfer increases the ability of women recipients to influence household spending. In some cases, female members controlled the BISP whereas male members controlled general household expenditures, and in other cases women were allowed joint decision-making power on BISP transfers whereas normally it would be the sole prerogative of the male (Oxford Policy Management 2011). Definitive results of the BISP will require more rigorous impact evaluation and participant tracking over time.

In addition to direct cash transfers to women, other significant variables in determining women's decision-making power are their education level and employment status. Therefore, improving girls' education and women's employability and providing opportunities for women to work to become more economically independent will also empower women and increase their decision making in the households and thus indirectly increase their maternal health services uptake.

The insignificant association between women's decision-making power and institutional births implies that other factors also affect services uptake. One of these is access, both financial and physical. In Pakistan many public hospitals and clinics do not have the capacity to provide delivery services, particularly those in poor rural communities. Even in places where delivery services are offered, the fees are often higher than poor families can afford.

Another factor is the shortage of female professionals, particularly in rural areas (Mumtaz *et al.* 2003). Thus, strengthening public service delivery and the training and deployment of professional midwives or Lady Health Workers as primary birth attendants continues to be critical. Incentives should also be provided to these professionals to work in rural areas, particularly remote rural areas, since maternal health services uptake is much lower in underserved areas (Sultan *et al.* 2002). These areas require sustained budget allocations to ensure the continuation and the quality of programmes. More innovative approaches such as contracting or outsourcing to non-governmental organizations (NGOs) and the private sector with public monies is one possible approach to increasing the use of maternal health services (Loevinsohn and Sayed 2008; Loevinsohn *et al.* 2009).

The findings also suggest that policies directed toward improving women's utilization of maternity services must target influential male household members, whose understanding of the importance of maternity services is crucial to increase

the effectiveness of health services interventions. This is not only the case in Pakistan, where in most areas women need the permission of a husband or another male to pursue activities outside their homes, but also true in broader areas elsewhere, in which "*engaging with men to tackle gender vulnerabilities and promote female empowerment is an approach that is gaining currency internationally*" (Holmes *et al.* 2010).

In summary, health policy makers should continue strengthening maternal health services delivery by training a sufficient number of *qualified* Lady Health Workers and improving the quality of service delivery in public clinics and hospitals. At the same time, health policy makers should collaborate with partners in the non-health care sectors to improve the decision making of women and empower them to seek maternal services when desired. Further, health policy makers need to target husbands and other influential household members, including male household heads and mothers-in-law (Kadir *et al.* 2003), to increase their awareness of the importance of maternal health services. Multi-sector demand-side interventions and continued strengthening of services delivery on the supply side will improve women's decision-making power in Pakistan and their utilization of maternal health services, as well as speed the achievement of the Millennium Development Goals.

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## Conflict of interest

None declared.

## Endnotes

<sup>1</sup> The regression results are similar with Lady Health Workers included in the skilled birth attendance.

<sup>2</sup> About 58% of household heads in the survey are women's husbands.



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