
DOES SEX OF THE HOUSEHOLD HEAD AFFECT THE MATERNAL HEALTH CARE?

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Abstract: Maternal health care has been long discussed topic throughout the world and so does in India. Still, India is the country where the large proportion of mothers loses their lives during the pregnancy and after wards. In Indian context, the head of the household is the decision maker of any household activity. Being male or female household head have a strong impact on the health care too. In this study, we have tried to analyse the effect of sex of household head on the maternal health care. Data from third phase of District Level Health Survey (DLHS) for India has been analyzed using bivariate and multivariate techniques. Study finds that mothers who belong to female-headed household are more likely to get prenatal services, have safe delivery and availed postnatal services as compared to those who belong to Male headed households, controlling the other socio-economic and demographic variables. Maternal health care is strongly related to the decision making power. Women who belong to female-headed household are availing more services than their counterparts. It emerges from the study that if women make liberal and autonomous, it may affect our society in positive sense and do affect country in long way.

Keywords: Antenatal care, DLHS-3, postnatal care, safe delivery.

Introduction: Maternal health services have a critical role to play in the improvement of women's reproductive health in developing countries. (1)- (4) A woman is considered to have received full antenatal care only when she has had at least three antenatal check-ups, two tetanus toxoid injections, and iron and folic acid tablets/syrup for 90 days and identification of warning signs during pregnancy. Globally, during the period 2006-2013, about 56% of pregnant women attended the recommended minimum four times antenatal care. The proportion of pregnant women in developing countries who attended at least four antenatal care visits has increased from approximately 37% in 1990 to about 52% in 2012 but, in low-income countries, only 38% of pregnant women attended four times or more antenatal care during 2006-2013. (5) Each year, more than half a million women die from causes related to pregnancy and childbirth, and nearly 4 million newborns die within 28 days of birth. The World Health Organization guidelines on postnatal care recommend postnatal visits within six to 12 hours after birth, three to six days, six weeks, and at six months (6-6-6-6 model).

It has been argued that changes in women's status have been the key to differentiate the behaviour of those seeking modern health care from those following traditional practices. (6) Educated women may take preventive health-care measures, as they have more control over their lives. They have positions in the household to take decisions regarding their own as well as of their children's health. The influence of cultural norms as well as husband's and in-laws' imposition of decisions on women's health seeking behavior may vary by a woman's background characteristics which are associated with age and education of the woman.

Therefore the influence of traditional believes, cultural norms along with husband's and in-laws' impact on the use of prenatal-care among older and more educated women may be lower than among young women and women having little or no education. 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. (7)

Secondly, a large body of research has attempted to explore intra-household decision-making power and its links with human development. (8)- (11) 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.

Many researchers have attempted to explore the links between women's autonomy and their use of reproductive health services. It is also argued by the authors that although certain widely acknowledged variables such as education and economic status have a significant effect on reproductive health behavior, the relationship between women's decision-making power and their use of reproductive health services is still unclear. In India various studies have not found any relationship between women's freedom of movement and decision-making power and their use of reproductive health services. (2), (12) Maternal health care has been long discussed topic throughout the world and so does in India. Still,

India is the country where the large proportion of mothers loses their lives during the pregnancy and after wards. In Indian context, the head of the household is the decision maker of any household activity. Being male or female household head have a strong impact on the health care too. In this study, we have tried to analyze the effect of sex of household head on the maternal health care.

Data and Methods

Data: This study use data from the third round of the District Level Household Survey (DLHS-3) conducted during 2007-08. The DLHS is a nationally representative and one of largest ever demographic surveys conducted in India. It covers all states and union territories of India except Nagaland. The basic aim of DLHS-3 is to provide reliable estimates of maternal and child health, family planning and other reproductive health indicators at district level. (13) DLHS-3 adopted a multi-stage stratified systematic sampling design. Detailed information about sampling employed in this survey can be obtained from the national report of DLHS-3.

Variable description:

Dependent variables

We have used 'full antenatal care', 'safe delivery' and 'postnatal care' as indicators of maternal healthcare utilization. They have been defined on the basis of the guidelines provided by the World Health Organization. A woman is considered to have received full antenatal care only when she has had at least three antenatal check-ups, two tetanus toxoid injections, and iron and folic acid tablets/syrup for 90 days or more during her pregnancy. (5) A delivery conducted either in a medical institution or home deliveries assisted by a doctor/nurse/Lady Health Visitor (LHV)/Auxiliary Nurse Midwife (ANM)/other qualified health professionals is considered a safe delivery in this study. A woman is considered to have received postnatal care if she had a postnatal check-up within 42 days after delivery. (4)

Independent variables

Study have considered a range of socioeconomic and demographic predictors such as residence, wealth quintile, religion, caste, Household head education, age of household head and sex of household head.

Methods: Bi-variate analysis has been done to examine prevalence of prenatal and postnatal care by selected socioeconomic and demographic characteristics. Chi-square has been applied to understand the association of prenatal and postnatal with selected socioeconomic and demographic factors. Logistic regression analysis was used to estimate odds ratio and its 95% confidence intervals (CIs) for the effect of socioeconomic and demographic factors on prenatal and postnatal care.

Data analysis was performed with the STATA statistical package. All reported p values are two tailed and $p < 0.05$ was considered statistically significant.

Results: In Table 1 the majority of women belong to rural areas. Three-fourth of the women was Hindu and 14 percent were Muslim and else were others. Considering caste 40 percent of women were OBC category which followed by SC/ST (36 percent) and others (23 percent). Thirty-seven percent of the head of the household were illiterate and else were literate. Most of the household head's were aged 30-60 years. Only 9 percent of the households where the head of the household were women. Table 2, percentage of prenatal, safe delivery and post delivery were high in urban areas among both male and female. It is increases with increasing quintile. People who belongs to other religion and caste were highest percent of antenatal, safe delivery and postnatal care and lowest among SC/ST category. Utilization of maternal health care was increases with increasing education as well as age among male and female.

Table 3, examine the role of household head's gender on maternal healthcare utilization, we had employed binary logistic regression analysis. In this study as maternal healthcare indicator, there are three indicators which we had included in this study. Results shows that the gender of the household head making significant differences on utilization of maternal healthcare services. Regarding prenatal care, women of male headed household in urban areas are reported to have much better (1.18, $p > 0.001$) prenatal care than the rural women but unexpectedly urban female headed household reported to have prenatal healthcare utilization than the reference category.

When we see the wealth or economic status of the household, results are clearly showing that the as wealth increases utilization of the prenatal care is also increases is both, male and female headed household. Women from Muslims (0.71, $P > 0.001$) and others (0.95, $P > 0.001$) male headed household are less likely to report to utilize prenatal care than Hindu male headed families. But in contrast women from female headed Muslim household are (1.17, $P > 0.001$) more likely to use prenatal care then reference category. Further, Women from educated male headed household are more likely to use prenatal care than the uneducated similar result has been found from educated female headed household but the use of prenatal care in the household where head of the household with 9 to 10 year and 11 years & above of schooling are reported to use twice (2.58, $P > 0.001$) and thrice (3.44, $P > 0.001$) respectively. Age of the household is also a significant factor to utilize prenatal care among both male and

female headed household. Gender of the household is not making much difference in safe delivery care. In both male and female headed household, utilization of safe delivery care is almost same except one control variable that is education of the household head. As education increases utilization of safe delivery care is also increases, female household with 11 & above years of schooling are (4.03, $P>0.001$) more likely to use safe delivery care. Postnatal care among female headed household is significant than the male headed household. Place of residence and household wealth is showing expected results in both male and female headed household. Urban, male and female headed household are (1.30, $P>0.001$ & 1.18, $P>0.001$ respectively) more likely to use postnatal care than their rural counterparts. Surprisingly, women from male headed Muslim family are reported (0.95, $P>0.001$) less utilization of postnatal care than the references category. While women from female headed Muslim households are (1.17, $P>0.001$) more likely to utilize postnatal care than reference category. Among male headed household both OBCs and other caste groups are reported more to utilize postnatal care than SCs/STs. Similar result has been found from female headed OBCs household but female headed other caste group are less likely to utilize postnatal care than Hindu reference category. It is clear that the women from educated household head both male & female has significant influence on postnatal care. Women from female headed household with 9 to 10 years of schooling and 11 and above years are (2.35, $P>0.001$ and 2.77, $P>0.001$) more likely to use postnatal care than uneducated female household head. Male headed household, both age group 30-60 and 60+ years are less likely to report to utilization of postnatal care than reference category, since female headed household among both 30-60 and 60+ years of age group are more likely to utilize postnatal care than younger aged less than 30 years household head.

Conclusions:

In recent years, maternal deaths are most common public health concern in developing and under developed countries. This study, an attempt has been made to examine the effects of sex of the household head on maternal health care utilization

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behavior. India is one of the fast economically developing countries in the world but on health parameters its performance is worse compared with countries in the South and East Asian region that have similar income levels and rates of economic growth. (14) Incidence of higher maternal mortality has been a greater challenge to Indian health policy makers and planners. The other socioeconomic factors usually found to be important are place of residence, religion and standard of living of the household. The economic status of the household also determines the utilization of antenatal care and delivery care services. (15), (16) The use of antenatal care services in a given population depend not only the availability and accessibility of services but also the socio economic status of the household. (17) The disparity in the use of maternal healthcare utilization across economic groups is an area of concern for many. (18), (19) Several studies have documented the fact that the household wealth has a positive effect on the use of maternal healthcare. (20)- (22)

Those women living in the rural areas and in the lower socioeconomic group were at a greater disadvantage. Package of delivering maternal care services to vulnerable groups; rural, uneducated and poor women, should be prepared to minimize the adverse consequences of pregnancy and childbirth. The results of this analysis reveal that the maternal health care utilization is better in a female headed household as compared to male headed household. Female household head are more likely to realize the benefits of using maternal health services. It may enhance female autonomy, which are increasing women's ability to make decisions regarding their own health as well as increasing the demand for modern health services. Changes in women's status will take several decades, it is required to bring about changes in maternal health care utilization, and programmatic efforts should also target the most vulnerable groups and advocate the importance of using maternal health care, so as to increase people's awareness of the benefits of such services to women's health.

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Table I: Percent distribution of sample by selected socioeconomic and demographic characteristics, India.

| Socioeconomic and demographic characteristics | Percentage (%) | Frequency | Sample size |
|--|-----------------------|------------------|--------------------|
| Residence | | | |
| Rural | 81.3 | 177,299 | 218058 |
| Urban | 18.7 | 40,759 | |
| Wealth quintile | | | |
| Poorest | 22.11 | 48,206 | 218058 |
| Poorer | 22.06 | 48,085 | |
| Middle | 19.97 | 43,544 | |
| Richer | 19.29 | 42,056 | |
| Richest | 16.58 | 36,167 | |
| Religion | | | |
| Hindu | 75.28 | 1,64,147 | 218058 |
| Muslim | 14.36 | 31,313 | |
| Others | 10.36 | 22,598 | |
| Caste | | | |
| SC/ST | 36.76 | 80,149 | 218058 |
| OBC | 39.83 | 86,849 | |
| Others | 23.42 | 51,060 | |
| Household head's education | | | |
| Illiterate | 37 | 81,079 | 218058 |
| Below 5 years | 20 | 44,423 | |
| 6-8 years | 15 | 32,980 | |
| 9-10 years | 16 | 34,525 | |
| 11 and above | 11 | 25,051 | |
| Household head's age | | | |
| Less than 30 | 26.15 | 57,030 | 218058 |
| 30-60 | 59.34 | 1,29,388 | |
| 60+ | 14.51 | 31,640 | |
| Household head's sex | | | |
| Male | 91.35 | 1,99,194 | 218058 |
| Female | 8.65 | 18,864 | |
| Total | 100 | 2,18,058 | |

Table II: Percentage of maternal health care utilization by selected socioeconomic and demographic characteristics, India.

| Socioeconomic and demographic characteristics | and | Antenatal care | | Safe delivery | | Postnatal care | |
|---|-----|----------------|--------------|---------------|--------------|----------------|--------------|
| | | Male | Female | Male | Female | Male | Female |
| Residence | | | | | | | |
| Rural | | 12.9 | 15.85 | 43.36 | 44.42 | 37.51 | 41.3 |
| Urban | | 26.7 | 35.54 | 75.23 | 81.91 | 63.65 | 71.88 |
| Wealth quintile | | | | | | | |
| Poorest | | 5.72 | 4.87 | 23.41 | 23.57 | 22.66 | 23.89 |
| Poorer | | 7.77 | 8.37 | 34.21 | 33.59 | 30.37 | 32.05 |
| Middle | | 13.58 | 17.22 | 49.3 | 52.46 | 41.66 | 46.26 |
| Richer | | 20.74 | 29.55 | 65.49 | 73.27 | 53.76 | 63.49 |
| Richest | | 35.17 | 45.08 | 87.15 | 90.59 | 74.16 | 82.04 |
| Religion | | | | | | | |
| Hindu | | 17.3 | 20.88 | 52.65 | 55.82 | 44.2 | 49.11 |
| Muslim | | 13.76 | 24.1 | 47.82 | 55.66 | 45.97 | 54.54 |
| Others | | 16.69 | 24.05 | 55.03 | 57.32 | 47.02 | 53.38 |
| Caste | | | | | | | |
| SC/ST | | 13.21 | 18.47 | 42.7 | 47.83 | 36.72 | 43.75 |
| OBC | | 16.83 | 23.62 | 53.08 | 57.62 | 46.88 | 53.47 |
| Others | | 21.63 | 23.81 | 64.47 | 64.77 | 52.91 | 55.81 |
| Household education head's | | | | | | | |
| Illiterate | | 9.29 | 15.27 | 36.91 | 46.06 | 33.53 | 41.97 |
| Below 5 years | | 15.38 | 30.57 | 48.25 | 68.39 | 41.51 | 61.09 |
| 6-8 years | | 16.73 | 31.88 | 54.97 | 75.37 | 46.83 | 67.97 |
| 9-10 years | | 21.17 | 39.8 | 62.83 | 81.62 | 52.24 | 74.34 |
| 11 and above | | 30.58 | 48.33 | 77.3 | 88.93 | 64.04 | 80.81 |
| Household head's age | | | | | | | |
| Less than 30 | | 13.66 | 10.66 | 47.21 | 35.05 | 41.3 | 35.55 |
| 30-60 | | 16.87 | 23.24 | 51.87 | 59.45 | 44.94 | 53.04 |
| 60+ | | 21.58 | 32.49 | 62.4 | 72.33 | 50.11 | 63.27 |
| Total | | 16.72 | 21.92 | 52.18 | 55.98 | 44.74 | 50.74 |

Table III: Changes in effect of male and female headed household on Maternal healthcare utilization, India.

| Socioeconomic and demographic characteristics | Antenatal care | | Safe delivery | | Postnatal care | |
|---|--------------------|-----------------|--------------------|--------------------|--------------------|--------------------|
| | Male | Female | Male | Female | Male | Female |
| Residence | | | | | | |
| Rural ^o | | | | | | |
| Urban | 1.18***(1.15,1.22) | 0.96(0.87,1.06) | 1.73***(1.68,1.79) | 1.80***(1.62,2.00) | 1.30***(1.26,1.33) | 1.18***(1.07,1.29) |

| Wealth quintile | | | | | | |
|-----------------------------------|--------------------|---------------------|-----------------------|-----------------------|--------------------|--------------------|
| Poorest® | | | | | | |
| Poorer | 1.30***(1.23,1.38) | 1.67***(1.39,2.01) | 1.57***(1.53,1.62) | 1.49***(1.35,1.64) | 1.42***(1.38,1.46) | 1.41***(1.28,1.56) |
| Middle | 2.36***(2.24,2.48) | 3.31***(2.78,3.94) | 2.70***(2.61,2.78) | 2.56***(2.31,2.84) | 2.22***(2.15,2.29) | 2.21***(1.99,2.45) |
| Richer | 3.77***(3.59,3.97) | 5.69***(4.80,6.75) | 4.61***(4.46,4.77) | 4.86***(4.35,5.44) | 3.39***(3.29,3.50) | 3.69***(3.32,4.11) |
| Richest | 6.68***(6.32,7.07) | 9.31***(7.77,11.15) | 11.92***(11.40,12.47) | 11.83***(10.19,13.74) | 7.08***(6.80,7.38) | 7.86***(6.88,8.97) |
| Religion | | | | | | |
| Hindu® | | | | | | |
| Muslim | 0.71***(0.68,0.74) | 1.17***(1.05,1.30) | 0.63***(0.61,0.65) | 0.80***(0.72,0.88) | 0.95***(0.92,0.98) | 1.17***(1.07,1.28) |
| Others | 0.81***(0.78,0.85) | 0.91(0.80,1.03) | 0.93***(0.89,0.96) | 0.75***(0.67,0.83) | 1.00(0.98,1.04) | 0.97(0.87,1.08) |
| Caste | | | | | | |
| SC/ST® | | | | | | |
| OBC | 0.97(0.94,1.00) | 1.06(0.96,1.17) | 1.17***(1.14,1.19) | 1.31***(1.20,1.42) | 1.20***(1.17,1.23) | 1.27***(1.17,1.38) |
| Others | 0.95***(0.91,0.98) | 0.70***(0.63,0.79) | 1.26***(1.23,1.30) | 1.12**(1.01,1.24) | 1.05***(1.02,1.08) | 0.90**(0.82,0.99) |
| Household head's education | | | | | | |
| Illiterate® | | | | | | |
| Below 5 years | 1.37***(1.32,1.43) | 1.78***(1.60,1.97) | 1.18***(1.15,1.21) | 1.88***(1.70,2.07) | 1.10***(1.07,1.13) | 1.55***(1.42,1.70) |
| 6-8 years | 1.29***(1.24,1.35) | 1.85***(1.61,2.13) | 1.29***(1.25,1.33) | 2.36***(2.04,2.71) | 1.16***(1.13,1.20) | 1.90***(1.67,2.16) |
| 9-10 years | 1.43***(1.37,1.49) | 2.58***(2.20,3.04) | 1.41***(1.36,1.45) | 3.07***(2.55,3.70) | 1.19***(1.16,1.23) | 2.35***(2.00,2.77) |
| 11 and above | 1.66***(1.59,1.74) | 3.44***(2.83,4.19) | 1.70***(1.64,1.77) | 4.03***(3.08,5.28) | 1.30***(1.25,1.35) | 2.77***(2.22,3.46) |
| Household head's age | | | | | | |
| Less than 30® | | | | | | |
| 30-60 | 1.09***(1.06,1.13) | 1.47***(1.29,1.67) | 1.00(0.98,1.03) | 1.48***(1.34,1.62) | 0.98(0.96,1.00) | 1.19***(1.08,1.30) |
| 60+ | 1.29***(1.23,1.35) | 1.94***(1.65,2.28) | 1.29***(1.25,1.33) | 1.77***(1.55,2.02) | 0.99(0.96,1.02) | 1.32***(1.17,1.50) |

Note: ** indicates 5% level of significance and ® represents a reference category of independent variables.

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