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Original Research Article.

Factors Affecting the Place of Delivery among Women Living in Rural Amroha, Uttar Pradesh: A Cross-Sectional Study

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ABSTRACT

Background: Developing countries are riddled with poor health care infrastructure especially for pregnant women and children. Lack of access to quality health care was leading to high maternal mortality as well as maternal morbidity. Although situation improved dramatically with the launch of conditional cash transfer schemes. Prioritizing institutional deliveries over home deliveries along with other added measures has helped in changing scenario in short span of time.

Objectives: Study was done for assessing the factors that influence women's decisions regarding their place of delivery, exploring the preferential place for delivery and Contribution of skilled birth attendant in home deliveries.

Methods: The present study was a cross sectional study conducted in the rural area of Amroha district for a period of one year from July 2015 to June 2016. Recently delivered women (RDW) were selected as study subject. A multi-stage stratified sampling design with random approaches had been used. Total 360 respondents participated in the study.

Results: Respondents age, education, occupation, socio economic status, family type and family size were the factors that influenced the place of delivery. The institution was the preferred place for delivery. Out of total 360 respondents, deliveries conducted in the institution and home were 286(79.4%) & 74(20.6%) respectively. SBA attendance at the time of delivery was impressively low. Just 1 (1.3%) delivery was conducted by SBA.

Conclusion: Institutional births are on rise in rural parts of Amroha, Uttar Pradesh. Still Significant proportions of births are taking place at home despite the government led cash incentive and the other support provided by the healthcare providers.

Keywords: Recently Delivered Woman, Skilled Birth Attendant.

Abbreviations:

SBA: Skilled Birth Attendant;
RDW: Recently Delivered Woman.

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INTRODUCTION

Pregnancy related complications are the leading causes of maternal death and disability for women aged between 15-49 years in developing countries.[1]

It was estimated that in 2015, roughly 303 000 women died during and following pregnancy and childbirth.[2] In addition to the number of deaths each year, 57.8 – 80.2% of women suffer from one or another form pregnancy related complication adding to the burden of maternal morbidity.[3] Research has claimed significantly higher proportion of maternal death occurred in cases of Home deliveries, which lacks SBA at the time of delivery.[4]

A large body of empirical evidence has shown that delivery conducted by SBA reduces probability of maternal and child death during delivery because almost all obstetric complications happen around the time of delivery.[5] According to the World Health Organization (WHO) skilled birth attendants (SBAs) are accredited health professionals (such as midwives, doctors, or nurses) who have been educated and trained to proficiently manage normal (i.e., uncomplicated) pregnancies, childbirths and the immediate postnatal period, as well as handle the identification, management and referral of complications in women and newborns.[6]

Global policies also prioritize the shifting the place of delivery from home to hospital as one of the strategies to improve maternal and neonatal survival.[7] Some evidence based research stresses on association of institutional deliveries with a decline in perinatal mortality and still births in India.[8]

India is one of the countries to have launched a national conditional cash transfer scheme with aim to encourage Institutional deliveries, being implemented since 2005. Institutional deliveries in India have since expanded from 40.7 % in 2005–06 to 72.9 % in 2009–10.[9]

India has made groundbreaking progress in recent years in reducing the maternal mortality ratio (MMR) by 77%, from 556 per 100 000 live births in 1990 to 130 per 100 000 live births in 2016.[10] Concerted push to increase access to quality maternal health services, state-subsidized demand-side financing like the JSY, Janani Shishu Suraksha Karyakram, significant emphasis on mitigating the social determinants of maternal health, and substantive efforts to facilitate positive engagement between public and private health care providers were the pivotal elements responsible for this remarkable achievement.[11]

However, India is still short of achieving the fifth MDG target of reducing maternal mortality to 100. Fall in maternal mortality witnessed in India was uneven throughout the country with wide gap in rich and poor states.[11]

Huge disparity in the availability of healthcare resources continues to exist in India. The rural urban divide is considerable when it comes to healthcare access.[12]

Uptake of skilled birth attendance and planned health-facility delivery, Emergency transport and health-facility admission were lower in the rural areas of poorer states.[4]

Therefore our study was conducted in rural areas of District Amroha, Uttar Pradesh with aims of 1) assessing the factors that influence women's decisions regarding their place of delivery in rural areas 2) Exploring the preferential place for delivery 3) Contribution of skilled birth attendant in home deliveries.

METHODOLOGY

The present study was a cross sectional study conducted in the rural area of Amroha district for a period of one year from July 2015 to June 2016 to know the factors influencing the women's decisions regarding their place of delivery. Recently delivered women (RDW) were selected as study subject. 'Recently delivered women' refers only to Women of reproductive age (15 to 49 years) who have delivered a live baby within the past 12 months prior to the conduct of this study.

Sample Size

The required sample size for the study among the RDW was calculated based on the standard formula for one point sample estimation:

$N=4PQ/d^2$

To ensure coverage of minimum required sample size for estimating various outcome indicators the value of 'P' (maternal health care service utilization) is taken as 21%.[13] With the above assumption the required sample size at 95 percent level of confidence with 5 percent of permissible error in the estimates, is worked out as:

$n = 1.96^2 \times 0.21 \times 0.79 / 0.05^2 = 254$

The survey was conducted to find out at least 254 recently delivered women from each selected rural area but for the analysis purpose bigger sample size of 360 RDW included in the study.

A multi-stage stratified sampling design with random approaches had been used. Selection of Primary Sampling Units (PSUs): PSUs, which were villages in the field practice area of rural health training center, with probability proportional to population size (PPS) at the first stage 18 PSU were selected randomly (Lottery Method).

In the Second stage: The number of households selected per village were fixed at 20. In process to maintain the homogeneity of the data each selected village was divided into 4 quadrants and from each quadrant, 5 RDWs were selected randomly for the in depth interviews. Total 360 women who gave their informed consent to participate in the study were included in the final analysis. Selected women were approached for interviews at their homes. Community health workers of the respective villages helped trace the selected women.

Ethical Approval

The study received the ethical clearance from the institutional ethical review committee.

Data Analysis

Primary data was collected by face-to-face interviews from Recently Delivered Women (RDW).Visits was made to all selected 18 villages with the help of Medico Social Worker (MSW). Data was compiled on excel sheet & presented in tabular form. Data analysis was done with the help of statistical software SPSS (version 23.0). Chi square test & other appropriate statistical test were applied. The differences were considered to be statistically significant at $p<0.05$ level.

RESULTS

Socio demographic profile of study population: Majority of the RDW were in the age group of 21-25 years (52.8%). Mean age was 25.35±3.51 years. In the present study 298 (82.7%) RDWs were housewives and rest 62(17.2.6%) were doing other works like farming and teaching. Maximum RDWs were illiterate (55%). Majority 59.7% of respondents mentioned their husband's education below 10th standard. Maximum RDWs (57.2%) belonged to nuclear family. According to modified B.G. Prasad's classification, maximum recently delivered women's (50.0%) were in class IV (lower middle) followed by 13.6% in class V (lower class). More than half of the families 188 (52.2%) had 4 – 6 family members. [Table 1]

Out of total deliveries, 286(79.4%) deliveries were carried out in the institution while 74(20.6%) deliveries took place at home. Deliveries which took place at home majority 61(82.5%) of it were conducted by untrained dai, followed by traditional birth attendant 10(13.5%). Normal vaginal deliveries were reported in 254 (88.8%) cases while caesarean was needed in 32(11.2%) of pregnancies.

Respondent's education, occupation and their husband's occupation, socio economic status and family has shown statistically significant association with place of delivery. Although association of place of delivery with that of family type, age category was found to be statistically insignificant.

Table 1: Socio demographic profile of study population

Socio-demographic variable		Frequency	Percentage
Age category	≤25 year	204	56.6
	25-30 year	139	38.6
	>30 year	17	04.7
Respondent's occupation	Working	62	17.2
	Non-working	298	82.7
Respondent's education	Illiterate	198	55.0
	≤10th	128	35.5
	>10th	34	09.4
Husband's education	Illiterate	84	23.3
	≤10th	215	59.7
	>10th	61	16.9
Socio-economic status	I	10	2.8
	II	38	10.6
	III	83	23.1
	IV	180	50.0
	V	49	13.6
Type of family	Nuclear	206	57.2
	Joint	154	42.8
Family size	≤3	46	12.7
	4-6	188	52.2
	≥7	126	35.0

Table 2: Distribution of RDW according to the Place of delivery

Variable		Frequency	Percentage
If Home delivery, delivery assisted by:(N=74)	Mother in law	0	0
	Relative	1	1.3
	TBA	10	13.5
	Untrained Dai	61	82.5
	ANM	1	1.3
	Quack	1	1.3
If Institutional delivery then (N=286)	Normal	254	88.8
	caesarean	32	11.2

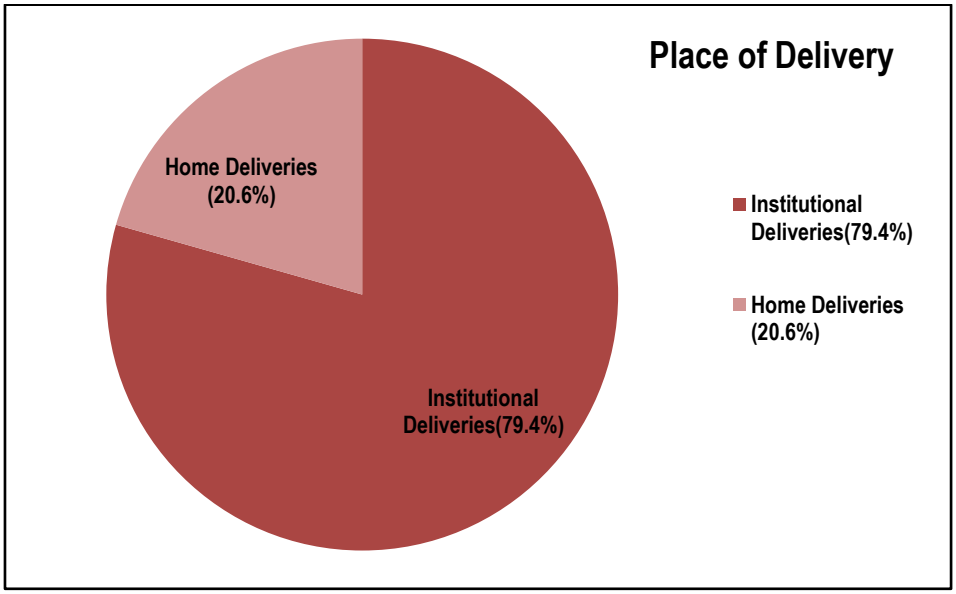

Fig 1: Place of Delivery

Table 3: Association between socio-demographic variable and place of delivery (N=360)

Socio-demographic variables	Home Deliveries (n=74)	Institutional Deliveries (n=286)	2	*p* value
Age category			5.247	0.073
≤25 year (204)	37(18.1%)	167(81.9%)		
25-30 year (139)	30(21.6%)	109(78.4%)		
>30 year (17)	7(41.2%)	10(58.8%)		
Respondent's occupation				
Working (62)	5(8.1%)	57(91.9%)	7.156	0.007
Non-working (298)	69(23.2%)	229(76.8%)		
Respondent's education			8.809	0.012
Illiterate(198)	52(26.3%)	146(73.7%)		
≤10th (128)	17(13.3%)	111(86.7%)		
>10th (34)	5(14.7%)	29(85.3%)		
Husband's education			10.48	0.005
Illiterate(84)	27(32.1%)	57(67.9%)		
≤10th (215)	40(18.6%)	175(81.4%)		
>10th (61)	7(11.5%)	54(88.5%)		
Socio-economic status			3.879	0.049
Upper(48)	15(31.2%)	33(68.8%)		
Lower (312)	59(18.9%)	253(81.1%)		
Type of family			0.490	0.484
Nuclear(206)	45(21.8%)	161(78.2%)		
Joint(154)	29(18.8%)	125(81.2%)		
Family size			6.166	0.046
≤3 (46)	8(17.4%)	38(82.6%)		
4-6(188)	48(25.5%)	140(74.5%)		
≥7(126)	18(14.3%)	108(85.7%)		

DISCUSSION

This study explored the various factors influencing the choice of place of delivery among the recently delivered women in rural areas of District Amroha.

The study explored illiterate women or women with lower educational backgrounds 52(26.3%) and 17(13.3%) respectively preferred to deliver at home while respondents with higher level of education 29(85.3%) opted for an institutional delivery. The consistent findings were observed in a study by Ravi RP et al. The Higher level of education among females reflects the better awareness of the need for healthcare during birth of the child and utilization of healthcare delivery services.[14]

Working respondents had higher preference for the institution as a place of delivery. Working status adds to household income and measure of socioeconomic status of the family. It is indirect reflection of wealth index.

Out of total, 286 (79.4%) respondents had delivered at institution while rest 74(20.6%) preferred home as a delivery place. Our study findings were consistent with the NFHS-4 report; claimed 79% deliveries were institutional.(13)Similar findings were mentioned in the study by Gupta RK et al.[15] where 79.1% of the deliveries conducted were institutional and only 20.9% were domiciliary.

In cases of institutional delivery 254 (88.8%) & 32(11.2%) were normal vaginal deliveries and caesarean sections respectively. These findings were in accordance with District level household survey 3 (DLHS) which stated Caesarean section rate is 28.1% in private sector and 12% in public sector health facilities.[16]

For the deliveries conducted at home; 82.5% deliveries assisted by untrained dais followed by 13.5% deliveries conducted by TBA while rest 0.9% deliveries assisted by others like relative, ANM, Quack. Relatively lower values were observed in a study done by Gupta RK et al.[17] which stated 73.1% deliveries were conducted by Other Person/ Dai (TBA), 11.5% by ANM/Nurse/Mid Wife/LHV, & 13.4% by Friends/Relatives.

Factors such as age, educational status of respondent and her husband, occupation, type of family and family size and socio economic status had influence on the choice of place of delivery among the study participants.

This study revealed respondent's education, occupation, their husband's occupation, socio economic status and family type had statistically significant association with place of delivery. The findings were consistent with the study by Mukhtar M et al.[18] which has obtained similar results showing age, educational status, occupation, parity significantly affected the place of delivery.

This study revealed socioeconomic status also had significant association with the respondents' choice of the place of delivery. This finding was in line with the WHO report which mentioned wealth status influence the use of medical facilities. There is positive relationship between the use of the facilities and wealth index.[19]

CONCLUSION

This study was a community-based survey to assess the predictors of facility deliveries in rural Uttar Pradesh India. Institutional births are on rise in rural parts of Amroha, Uttar Pradesh. Still Significant proportions of births are taking place at home despite the government led cash incentive and the other support provided by the healthcare providers. Although, the prevalence of institutional delivery is high when compared to national reports from Uttar Pradesh, still institutional delivery is low in the study area. Home deliveries conducted by SBA are impressively low.

These findings demand intensification of efforts to close the gaps and improve health service utilization. The healthcare authorities should emphasize on increasing the awareness about the importance of institutional delivery through health education, health promotion and effective communication.

LIMITATIONS AND STRENGTHS

The sample size was quite large for a qualitative study. It was not a representative sample and therefore the findings cannot be generalized to the whole population. Another limitation of this study is that we only analyzed the data of women who survived. The data was cross sectional and collected retrospectively.

Our study has few strengths. We enlisted a large sample of women from various social backgrounds and conducted interviews in their familiar language. The topic was noted relevant and important in concern with local population. Local women, decision-makers and health care providers participated in the analysis and interpretation of the findings.

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