

## ORIGINAL ARTICLE

## Preferences and Practices regarding Delivery Place: A community-based cross-sectional study in Agra city, Uttar Pradesh

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### Abstract

**Background:** Understanding preferences and practices for delivery place among women would assist in better resource utilization for skilled attendants. **Objectives:** To study factors influencing women's preference and practice regarding their place of delivery. **Methods:** A community based cross-sectional study was conducted in Agra from 1st October 2018 to 31st October 2020. Multi-stage random sampling was used. Data was collected using semi-structured interview schedule. Both bivariate and multivariate analysis was done. **Result:** Majority (72.67%) of women had preference for delivery at government hospital while 19.67% for private hospital and only 7.67% for home. In actual practice, 58.33% had delivered at government hospital and 32.33% delivered at private hospital while 9.33% at home. On multiple-logistic regression analysis, parity found to have significant association with preference of delivery at government hospital. Preference for delivery in private hospital was found to be significant with OBC caste and in women whose husband has skilled/highly-skilled occupation. In actual practice, Government hospital as delivery place found to have significant association with parity and presence of ASHA. Private hospital as a delivery place found significant with literate mothers and parity. **Conclusion:** Majority had preferred and practiced institutional delivery, preferring government hospital over private hospital. In actual practice, delivery at private hospital as well as home delivery out-numbered the preferred proportion.

### Keywords

Delivery preferences, Delivery practices, Multi-stage sampling, Institutional delivery, Multivariate Analysis, Pregnancy

### Introduction

Child delivery is a multidimensional process with physical, emotional, social, cultural, and psychological dimensions.(1) Delivery in health institutions is one of the main strategy in India for decreasing the maternal mortality ratio. According to the Coverage Evaluation Survey (CES) conducted in year 2009, 47% of the women had delivered in public health institutions whereas 26%

women delivered in private institutions, although wide variation exists in institutional delivery rate between and within the states of India.(2)Skilled birth assistance during deliveries in India have increased substantially; the proportion of births assisted by a skilled provider increased from 47% in 2005–06 (NFHS-3) to 81% in 2015–16 (NFHS-4). After NFHS-1 (1992–93) in India, there were many programs and policies taken by the government for the improvement of maternal health as well as child

health. Disparity in the access or utilization of maternal and child health care services is seen because in India there are many controlling factors which create constrain to institutional delivery(3).

Place of delivery is an important factor often related to the quality of care received by the mother and infant for influencing maternal and child healthcare outcomes.(4) Various previous studies(5,6) had shown that interaction of various determinants like bio-social, demographic, obstetric, antenatal, socio-economic factors and previous maternal care practices influence the preferences and practices regarding place of delivery.

Proportion of institutional deliveries in India increased from 38.7% in 2005-06 (NFHS-3) to 78.9% (NFHS-4) which is a remarkable progress. Uttar Pradesh has institutional delivery of 67.8% which is below the national average however Agra district of Uttar Pradesh has institutional deliveries proportion (78.7%) near to national average.

### Aims & Objectives

1. To understand the women's preferred delivery place as well as actual practiced delivery place
2. To assess the determinants influencing their preference and practice regarding delivery place.

### Material & Methods

This descriptive observational, community based cross-sectional study was conducted among married women residing in Agra city of Uttar Pradesh, India.

**Study design:** This is community-based cross-sectional study

**Study duration:** Conducted between 1st October 2018 to 31st October 2020

**Place of work:** Department of Community Medicine, S.N.Medical College, Agra

**Research question:** What are the delivery preferences and practices among women in Agra district and which socio-demographic factors are associated with preferences and actual practices in regard to place of delivery?

**Study Population:** All mothers who delivered within past one year (January 2019-2020) were our study population. Inclusion criteria in this study includes a)All mothers who had live child within one year of age. and b) Those mothers who had given informed consent.

**Exclusion criteria:** a)Mothers who were sick and not able to given consent and b)Those mothers who delivered still births/intra-uterine deaths.

**Sample size calculation:** For calculation of sample size, taken the prevalence of institutional delivery in India which is 78.9 % (NFHS-IV)(7) using the formula  $4pq/d(2)$  and considering prevalence of institutional delivery (78.9%) for calculating the sample size and margin/allowable error as 5% Thus the sample size derived was 266 also considering wrongly and unfilled questionnaire we round off the sample size to 300. All 300 participants, were interviewed with pre tested,

predesigned and structured questionnaire that solicited information about their socio-demographic characteristics, antenatal visits, their abortion history, mode of delivery of last child, delivery history and their preferred and practiced place of last delivery.

**Sampling Technique:** Participants were recruited through multi-stage random sampling technique. List of Community development blocks and wards, Agra were obtained and Separate list of Peri-urban and Urban wards was prepared. In 1st stage, one Community development block was randomly selected. In the 2nd stage one PHC was randomly selected from the selected community development block and one ward each from periurban and urban wards was randomly selected. In 3rd stage one village was randomly selected in the selected PHC and one mohalla was randomly selected from each of the selected peri-urban and urban ward and in the fourth stage, all the eligible women of the selected village and the peri-urban and urban mohalla were included in the study.

**Methodology:** Participants were recruited through multi-stage random sampling technique. Data collection After locating the selected area, a random direction was chosen taking health centre as centre point and households were visited in that randomly specified direction. In instances where the eligible subject was not found, the immediate next house was considered till the required sample size was obtained. Each eligible woman was visited at her house hold. First of all, informed consent was obtained from the participants. Objectives of the study were explained to each eligible woman in the selected household. was done from 1<sup>st</sup> January 2019 to 1st January 2020. Before start of the interview, the participants were explained about purpose of study and content of questionnaire in their own language hindi. Verbal informed consent was taken and confidentiality was assured. The information collected on the study scheduled was entered in Microsoft Excel spreadsheet. Frequencies were obtained using descriptive statistics using appropriate statistical tool for analysis. Chi-square test and Fisher's exact test has been used for testing significance of association between categorical variables in bivariate analysis. Ethical clearance for the study was taken from the Institutional Ethical clearance committee, SN Medical College and Hospital, Agra.

### Results

**Bio-social characteristics:** The present study was conducted among 300 women in Agra city. Majority of them (54.33%) belong to 20-24 years of age group with a mean age of 24.25  $\pm$  2.87 years. Almost all study participants were Hindu religion and the majority (59.33%) belonged to either Other Backward Class (43.33%) or Scheduled Caste (16.00%). More than half (55.67%) families were joint families. Their husband was more literate (85.33%) than the study subjects (68.40%). Most of the participant's husband's occupations

were of unskilled (43.33%) and they were belonging to lower/lower middle socioeconomic class according to Modified B.G Prasad Majority of the participant had 2 children. Most of the study subjects received  $\geq 4$  ANC visit (60.34%) and wanted their delivery by normal vaginal (98.33%) in government hospital (58.33%).(Table 1)

**Preference and practice for place of delivery:** In present study, we found, preference for place of delivery at home was 7.67%, 19.67% preferred delivery in private hospital and 72.67% in public hospital while in actual practice, delivery at home undergone/practiced by 9.33%, 32.33% in private hospital and 58.33% in public hospital.(Figure 1a&1b)

**Determinants influencing preference regarding place of delivery:** Independent association of various bio-social, socio-economic, antenatal, maternal and obstetrics determinants (14 variables) with preference for the place of delivery was analyzed in the present study, and after analyzing these variable, we found that out of 13 variables, 9 variables viz. family caste ( $p=0.0001$ ), education of mother ( $p=0.000192$ ) and their husband education ( $p=0.000187$ ), husband occupation ( $p=0.021$ ), socio-economic status ( $p=0.00021$ ), parity ( $P=0.00066$ ), delivery of last child ( $p=0.0017$ ), presence/absence of ASHA ( $p=0.000024$ ) and mode of delivery of present child ( $0.001$ ) were found to be significantly associated with preference for the place of delivery.( Table 2)

**Determinants influencing practices regarding place of delivery:** In present study, we analyzed association of various bio-social, socio-economic, antenatal, maternal and obstetrics determinants with practiced place of delivery, we found 7 variables viz. caste ( $p=0.00011$ ), husband education ( $0.0001016$ ), mother education ( $p=0.0007$ ), parity ( $p=0.00006$ ), delivery of last child ( $p=0.02$ ), presence and absence of ASHA ( $p=0.00001$ ), and mode of delivery their present child (fisher  $0.0001$ ) were found to be significantly associated with place of delivery.(Table 3)

**Logistic regression analysis for preference in regard to place of delivery:** On logistic regression analysis, parity was found to be the only socio-demographic factor which has a significant association with preference of a woman in regard to place of government hospital delivery with RR of 0.24 (0.08-0.72) and p value of 0.01. On the other hand, preference for delivery in private hospital was found to have statistically significant association with OBC caste RR of 8.27(1.91-35.88), p value .01 and in those women whose husband have skilled /highly skilled occupation RR 4.32(1.12-16.65), p value 0.03 preference of a woman for a particular place of delivery on logistic regression analysis.(Table 4)

**Logistic regression analysis for practice in regard to place of delivery:** On logistic regression analysis, government hospital as delivery place was found to have a significant association with parity of a woman with RR of 0.30(0.11-

0.79), p value of 0.016 and ASHA at the time of delivery RR of 0.18(.05-.057), p value of 0.004. Private hospital as place of delivery was found to be significantly associated with literate mother RR 3.02(1.00-9.11), p value of .04 and parity of mother RR 0.24( 0.08-0.71), p value of all other factors which were found to have significant association on univariate analysis ( i.e. mother's education, education of her husband, number of children and presence of ASHA at the time of delivery) were found to have no statistically significant association with actual place of delivery on multiple logistic regression analysis.(Table 5)

## Discussion

This study made an attempt to understand some of the determinants that influence the choice of place of delivery among the recently delivered women (within last 12 month) in Agra city. The present study has found that large proportion of deliveries in Agra were conducted in government hospital (58.33%) in comparison to private (32.33%) and only 9.33% deliveries conducted at home. However previous studies and data had shown varied results(8,9,10). A much higher proportion of mothers had opted institutional delivery in our study which corresponds with the raising trend of institution deliveries in the past decade and might also be due to difference in setting area of study. In our study, we observed that 18.01% were caesarean section (C-section) while 81.99% were normal vaginal deliveries (NVD) however, another study found, lesser (11.20%) caesarean section comparison to our study might be due to the rural background in their study(11).

In this study 8.57% C- section were in government health facility while four times 35.05% higher C- section in private hospital similar constraints were found in NFHS-IV (2015-2016) in Agra and Singh P et al(12) analyzing DLHS-IV data. 60.34% of mothers had four or more antenatal visits while NFHS-IV (2015-2016)(7) data revealed that only 37.20% of mothers in Agra had at least four antenatal visits this might be due to this NFHS-IV data was collected 7-8 years back. In this study, ASHA was present at 80.33% of the deliveries, in contrast Joseph S et al(10), Garg PK et al(13) and Kumar S et al(14) found that 97.10%, 98.00% and 98.52% mothers in Meghalaya, rural Haryana and Varanasi respectively were escorted by ASHA for delivery at hospital which was probably due to the fact that unlike our study (mother- key respondent) ASHA was key respondent in their study. With increasing age group ie participants less than 30 to above 30 age group, proportion of deliveries at private hospital rose from 19.37% to 25.00% for preference and 32.04% to 37.50% for practice. Thind A. et al(8) also observed, proportion of deliveries at private hospitals rose sharply from 30.72% to 44.80%. In present study, we found that most of SC/ST category women (93.75%) had institutional delivery while only 6.25% were delivered at home. On the contrary, Thind A. et al(8), Aggarwal R. et al(9), Analysis of data

NFHS-3 and one more study(15) conducted in rural Delhi found the place for delivery among SC/ST category was home more than other categories. This shows that women of general caste in Agra is not at the peak of the societal hierarchy while women of SC/ST caste are not most under privileged or ill-informed now and more often, utilizing institutional services especially governmental facilities for their delivery. Study also shows that highest proportion of delivery at home among Other Backward Caste is indicative of their socio-cultural practices.

Differences observed in preference as well as practice for place of delivery on the basis of type of family were found to be statistically insignificant. Studies(11,16) conducted at Uttar Pradesh and in Telangana also found similar pattern of result with delivery place and type of family. Statistically significant relationship was found between preference and delivered place of delivery and mother's education, their husband education and husband occupation. Another Study(17) performed in rural area of Aurangabad showed similar result for delivery place.

The present study found that none of the women who had a history of abortion wanted to deliver at home while majority of them wanted to deliver at a government hospital and only 11.53% preferred to deliver at a private hospital( $p=0.11$ ). Actual delivery practices, on the other hand were almost similar in both, irrespective of abortion, the groups who either have or don't have a history of abortion. One of the main reasons for their preference is that they perceive better availability of medicines and supplies, and improved health outcomes of both mother and newborn at facilities. Majority of the women in our study with previous C-section had an institutional delivery which means that they were advised for institutional delivery in the present pregnancy.

Proportion of delivery at private hospital rose while proportion of home delivery dropped in our study with increase in number of antenatal visits but the observed differences in the quantity of reduction/increment in the proportion of home/hospital delivery may be due to different time zone and geographical location of study as number of home deliveries has decreased drastically in Agra city during recent times. A study conducted by THIND A. et al(8) too had reported similar findings. Our study found significant association between place of delivery and their place of ANC visit, similar results were seen in a study conducted by Khumukcham. T et al(2). Effect of presence or absence of ASHA on preference ( $p=0.000024$ ) and practice ( $p=0.00001$ ) for place of delivery was found statistically significant, presence of ASHA at the time of labor is very vital for delivery at government hospital.

Difference in preferred and practiced delivery place is probably is due to the fact that at the time of delivery, when a woman is undergoing labor, family/spouse is under pressure and most of them choose to shift to private hospital without caring for money just to get best medical/surgical care for mother and newborn which they

think, or are made to think, is not possible at government hospital. On the other hand, if everything is happening normally, family/spouse and woman herself want to deliver at government hospital as they think that government hospital will handle it adequately and they will be discharged at the earliest as unlike private hospital they will not keep them long to make money from them. With implementation of Ayushman Bharat Yojana, more women will probably opt for a delivery at private hospitals even in the cases of normal vaginal delivery as it will not cost to them.

### Conclusion

Most of women had preferred and practiced institutional delivery with majority preferring government hospital over private hospital and less than one-tenth had preference for delivery at home. In actual practice, though mainly institutional delivery was practiced however, delivery at private hospital and home out-numbered the preferred proportion while actual delivery practiced at government hospital showed a decline from the preferred proportion. Decline in delivery conducted at government hospitals over those preferring it at government hospitals highlights failure of public health facility somewhere may be in quality of care or acceptability or accessibility.

### Recommendation

The government in collaboration with community leadership should develop, implement and scale up women educational levels and enhance their access and use of relevant information on maternal delivery services to support informed delivery decision. The physical infrastructure should be improved in public sector health institutions. Training of the public health care providers especially the lower grade staff on interpersonal communication skills and handling the clients gently should be undertaken. Obstetricians should abide by ethics in clinical practice and carefully evaluate the indication in every cesarean and take an unbiased decision before performing cesarean. Proper implementation of Ayushman Bharat Yojana will help more women to opt for institutional deliveries even at private hospitals as it will not cost to them.

### Limitation of the study

A limitation of this study was conducted in one city only which might affect generalizability and representativeness of the findings. Cross-sectional study design was used which might affect cause-effect relationship.

### Relevance of the study

The study findings have important policy implications as it indicates needs of focused approach to scale up women educational levels regarding delivery decision and enhance their access and use of relevant information on maternal delivery services. Policy makers should take

appropriate steps to improve coverage of institutional deliveries at government health facilities.

### Authors Contribution

All authors have contributed equally.

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### Tables

TABLE 1 BIO-SOCIAL PROFILE OF THE WOMEN

Parameter	Number (n=300)	Percentage (%)
<b>1.Age</b>		
<24	167	55.67%
25-29	117	39.00%
>30	16	5.33%
<b>2.Caste</b>		
General	122	40.67 %
OBC	130	43.33 %
SC/ST	48	16.00 %
<b>3.Family Type</b>		
Joint	167	55.67 %
Nuclear	133	44.33 %
<b>4.Mother’s education</b>		
Illiterate	102	34.00 %
I-V	49	16.33 %
VI- VIII	46	15.33 %
IX-XII	79	26.34 %
Graduate/postgraduate	24	8.00 %
<b>5.Father’s education</b>		
Illiterate	44	14.67 %
I-V	36	12.00 %
VI-VIII	32	10.67 %
IX-XII	150	50.00 %
Graduate/postgraduate	38	12.67 %

6.Socioeconomic status		
Upper class	7	2.33 %
Upper middle	8	2.67 %
Middle	45	15.00 %
Lower middle	144	48.00 %
Lower	96	32.00 %
7.Husband's Occupation		
Highly- Skilled	10	3.33%
Skilled	78	26.00%
Semi-Skilled	82	27.33%
Un- Skilled	130	43.33%
8.Parity		
1	93	31.00%
2	133	44.33%
3	57	19.00%
>3	17	5.67%
9.Antenatal Visit		
1	10	3.33%
2	44	14.67%
3	65	21.67%
4	71	23.67%
>4	110	36.67%
10.Mode of delivery		
Normal	295	98.33%
Caesarean	5	1.67%
11.Presence of ASHA at the time of delivery		
Presence of ASHA	241	(80.33%)
Absence of ASHA	59	(19.67%)
12.Abortion History		
Yes	26	8.67%
No	274	91.33%
13.Delivery of Last Child		
Normal	189	89.85%
Cesarean	21	10.15%

**TABLE 2 DETERMINANTS AFFECTING THE PREFERENCE FOR DELIVERY PLACE**

Variable	Delivery at Home n(%)	Government Hospital n(%)	Private Hospital n(%)	Total n(%)	
<b>1. Age</b>					
<30 Years	22 (7.75%)	207 (72.89)	55 (19.37%)	284 (94.67%)	<b>P= .850 df=2</b>
>30 Years	1 (6.25%)	11(68.75%)	4(25.00%)	16(5.33%)	
<b>Total</b>	<b>23(7.67%)</b>	<b>218(72.67%)</b>	<b>59(19.67%)</b>	<b>300(100%)</b>	
<b>2.Caste</b>					
General	12 (9.84%)	101(82.79%)	9(7.38%)	122 (40.67%)	<b>P=0.0001, x<sup>2</sup>=23.31 df= 4</b>
OBC	8(6.15%)	81(62.31%)	41(31.54%)	130 (43.33%)	
SC/ST	3 (6.25%)	36(75.00%)	9(18.75%)	48 (16.00%)	
<b>Total</b>	<b>23(7.67%)</b>	<b>218(72.67%)</b>	<b>59(19.67%)</b>	<b>300(100%)</b>	
<b>3. Family type</b>					
Joint	14 (8.38%)	116(69.46%)	37(22.16%)	167 (55.67%)	<b>P= .37314, x<sup>2</sup>=1.971, df=2</b>
Nuclear family	9 (6.77%)	102(76.69%)	22(16.54%)	133 (43.33%)	
<b>Total</b>	<b>23(7.67%)</b>	<b>218(72.67%)</b>	<b>59(19.67%)</b>	<b>300(100%)</b>	
<b>4. Husband's Education</b>					
Illiterate	4(9.09%)	38 (86.36%)	2 (4.55%)	44 (14.67%)	<b>P=.0001857 X<sup>2</sup>=22.165 df=4</b>
I-XII	16 (7.34%)	162 (74.31%)	40 (18.35%)	218 (72.67%)	
Graduate/Postgraduate	3(7.89%)	18 (47.37%)	17 (44.74%)	38(12.67%)	
<b>Total</b>	<b>23(7.67%)</b>	<b>218(72.67%)</b>	<b>59(19.67%)</b>	<b>300(100%)</b>	
<b>5. Mother's Education</b>					
Illiterate	13(12.75%)	77(75.50%)	12(11.76%)	102 (34.00%)	<b>P= .000192 x<sup>2</sup>= 22.08</b>
I-XII	8 (4.62%)	130 (75.14%)	35 (20.23%)	173 (57.67%)	

<b>Graduate/ Postgraduate</b>	2(8.00%)	11(44.00%)	12(48.00%)	25(8.00%)	<b>df=4</b>
<b>Total</b>	<b>23(7.67%)</b>	<b>218(72.67%)</b>	<b>59(19.67%)</b>	<b>300 (100%)</b>	
<b>6. Socio-economic status</b>					
<b>Upper class</b>	1 (6.67%)	10 (66.67%)	4 (26.67%)	15 (5.00%)	<b>P=0.00021</b> <b>x<sup>2</sup>=21.93</b> <b>df=4</b>
<b>Middle class</b>	2 (4.44%)	23 (51.11%)	20 (44.44%)	45 (15.00%)	
<b>Lower class</b>	20 (8.33%)	185 (77.08%)	35 (14.58%)	240 (80.00%)	
<b>Total</b>	<b>23(7.67%)</b>	<b>218 (72.67%)</b>	<b>59 (19.67%)</b>	<b>300 (100%)</b>	
<b>7. Husband's Occupation</b>					
<b>Highly-Skilled/ Skilled</b>	6 (6.82%)	56 (63.64%)	26 (29.55%)	88 (29.33%)	<b>P=0.021</b> <b>x<sup>2</sup>7.693 df=2</b>
<b>Semi skilled/Un- skilled</b>	17 (8.02%)	162 (76.42%)	33 (15.57%)	212 (70.67%)	
<b>Total</b>	<b>23(7.67%)</b>	<b>218(72.67%)</b>	<b>59(19.67%)</b>	<b>300(100%)</b>	
<b>8. Parity</b>					
<b>UP TO 2 CHILDREN</b>	10 (4.42%)	167 (73.89%)	49 (21.68%)	226 (75.33%)	<b>P=.00066</b> <b>X<sup>2</sup>=14.64</b> <b>df=2</b>
<b>MORE THEN 2 Children</b>	<b>13 (17.56%)</b>	51 (68.92%)	10 (13.51%)	74 (24.67%)	
<b>Total</b>	<b>23 (7.67%)</b>	<b>218 (72.67%)</b>	<b>59 (19.67%)</b>	<b>300 (100%)</b>	
<b>9. Abortion History</b>					
<b>Yes</b>	0 (0.00%)	23(88.80%)	3(11.53%)	26(8.67%)	<b>P = .1277</b> <b>X<sup>2</sup>=4.11612 df=2</b>
<b>No</b>	23(8.40%)	195(71.16%)	56 (20.43%)	274(91.33%)	
<b>Total</b>	<b>23(7.67%)</b>	<b>218(72.67%)</b>	<b>59(19.67%)</b>	<b>300 (100%)</b>	
<b>10. Delivery of Last Child</b>					
<b>Normal</b>	18(9.68%)	141(75.81%)	27(14.51%)	186(89.85%)	<b>P= 0.0017</b> <b>X<sup>2</sup>=14.3956 df=2</b>
<b>Cesarean</b>	2(9.5%)	9(42.86%)	10(47.61%)	21(10.15%)	
<b>Total</b>	<b>20(9.66%)</b>	<b>150(72.46%)</b>	<b>37(17.87%)</b>	<b>207(100%)</b>	
<b>11. Antenatal Visit</b>					
<b>≥ 3</b>	10 (8.47%)	83 (70.34%)	25 (21.19%)	<b>118 (8.18%)</b>	<b>P=0.7637</b> <b>x<sup>2</sup> =.5390df=2</b>
<b>MORE THEN 3</b>	13 (7.14%)	135 (74.18%)	34(18.68%)	<b>182(60.67%)</b>	
<b>Total</b>	<b>23 (7.67%)</b>	<b>218 (72.67%)</b>	<b>59(19.67%)</b>	<b>300(100%)</b>	
<b>12. Presence/Absence of ASHA</b>					
<b>Present</b>	16 (6.64%)	189 (78.42%)	36(14.94%)	<b>241 (80.33%)</b>	<b>P=0</b> <b>.000024 x2</b> <b>=21.2103</b> <b>df=2</b>
<b>Absent</b>	7 (11.86%)	29 (49.16%)	23 (38.98%)	<b>59 (19.67%)</b>	
<b>Total</b>	<b>23(7.67%)</b>	<b>218(72.67%)</b>	<b>59(19.67%)</b>	<b>300 (100%)</b>	
<b>13. MODE OF DELIVERY</b>					
<b>Normal</b>	21 (8.37%)	190 (75.70%)	40 (15.94%)	<b>251 (83.67%)</b>	<b>P=0.001008</b> <b>x2 =13.7978</b> <b>df=2</b>
<b>Caesarean Delivery</b>	2 (4.08%)	28 (57.14%)	19 (38.78%)	<b>49 (16.33%)</b>	
<b>TOTAL</b>	<b>23(7.67%)</b>	<b>218(72.67%)</b>	<b>59(19.67%)</b>	<b>300 (100%)</b>	

**TABLE 3 DETERMINANTS AFFECTING THE PRACTICE FOR DELIVERY PLACE**

<b>1.Age</b>	<b>Delivery at Home n(%)</b>	<b>Government Hospital n(%)</b>	<b>Private Hospital n(%)</b>	<b>Total n(%)</b>	
<b>&lt;30</b>	26(9.14%)	167(58.80%)	91(32.04%)	284 (94.67%)	<b>P=.770</b> <b>X<sup>2</sup>=.5223</b> <b>df=2</b>
<b>&gt;30</b>	2(12.50%)	8(50.00%)	6(37.50%)	16 (5.33%)	
<b>2.Family Caste</b>					
<b>General</b>	11 (9.02%)	88 (72.13%)	23 (18.85%)	<b>122 (40.67%)</b>	<b>P=0.00011,x<sup>2</sup>= 23.314</b> <b>df= 4</b>
<b>OBC</b>	14 (10.77%)	57 (43.85%)	59 (45.38%)	<b>130 (43.33%)</b>	
<b>SC/ST</b>	3 (6.25%)	30 (62.50%)	15(31.25%)	<b>48 (16.00%)</b>	
<b>Total</b>	<b>28 (9.33%)</b>	<b>175 (58.33%)</b>	<b>97 (32.33)</b>	<b>300 (100%)</b>	
<b>3. Family type</b>					
<b>Joint</b>	14 (8.38%)	97(58.08%)	56(33.53%)	<b>167 (55.67%)</b>	<b>P=.764909, x<sup>2</sup> =0.536 ,</b> <b>df= 2</b>
<b>Nuclear family</b>	14(10.53%)	78(58.65%)	41(30.83%)	<b>133 (43.33%)</b>	
<b>Total</b>	<b>28(8.38%)</b>	<b>175(58.33%)</b>	<b>97(32.33%)</b>	<b>300 (100%)</b>	
<b>4. Husband's Education</b>					
<b>Illiterate</b>	5 (11.36%)	32 (72.73%)	7 (15.91%)	44 (14.67%)	<b>P= 0.0001016</b> <b>x<sup>2</sup>=28.4780</b> <b>df=4</b>
<b>I-XII</b>	21(9.63%)	130(59.63%)	67(30.67%)	218(72.67%)	
<b>Graduate/Postgraduate</b>	2 (5.26%)	13 (34.21%)	23 (60.53%)	38(12.67%)	
<b>5. Mother's Education</b>					
<b>Illiterate</b>	15(14.70%)	66(64.70%)	21(20.58%)	102 (34%)	<b>P=.0007</b> <b>x<sup>2</sup>=19.25</b>
<b>I-XII</b>	11(6.36%)	101(58.38%)	61(35.26%)	173(57.67%)	

<b>Graduate/Postgraduate</b>	2(8.00%)	8(32.00%)	15(60.00%)	25(8.00%)	<b>df=4</b>
<b>Total</b>	<b>28(9.33%)</b>	<b>175(58.33%)</b>	<b>97(32.33%)</b>	<b>300</b>	
<b>6. Socio-Economic Status</b>					
<b>UPPER</b>	1(6.67%)	8(53.33%)	6(40.00%)	15(5.00%)	<b>P =0.357, x2=4.377, df=4</b>
<b>Middle</b>	3 (6.67%)	22 (48.89%)	20 (44.44%)	<b>45 (15.00%)</b>	
<b>LOWER</b>	24(10.00%)	145(60.42%)	71(29.58%)	240(80.00%)	
<b>7.Husband's Occupation</b>					
<b>Highly -Skilled /skilled</b>	10(11.36%)	42(47.73%)	36(40.91%)	88(29.33%)	<b>P =0.055, x2=5.78, df=2</b>
<b>semi/unskilled</b>	18(8.49%)	133(62.74%)	61(28.77%)	212(70.67%)	
<b>8. Parity</b>					
<b>UP TO 2 CHILDREN</b>	12(5.31%)	133(58.85%)	81(35.84%)	226(75.33%)	<b>P =0.00006, x2=19.42, df=2</b>
<b>MORE THEN 2 Children</b>	16(21.62%)	42(56.76%)	16(21.62%)	<b>74 (24.67%)</b>	
<b>Variable</b>					
<b>9.Abortion History</b>					
<b>Yes</b>	3(11.53%)	15(57.70%)	8(30.76%)	26(8.67%)	<b>P= .91766 X<sup>2</sup>=0.1718 df=2</b>
<b>No</b>	25(9.47%)	160(60.60%)	89(33.71%)	274(91.33%)	
<b>Total</b>	<b>28 (9.33%)</b>	<b>175 (58.33%)</b>	<b>97(32.33%)</b>	<b>300(100%)</b>	
<b>10.Delivery of Last Child</b>					
<b>Normal</b>	25(13.44%)	109(58.60%)	52(27.96%)	186(89.85%)	<b>P= 0.0240 X<sup>2</sup>=7.734 df=2</b>
<b>Cesarean</b>	1(4.76%)	8(38.09)	12(57.14%)	21(10.15%)	
<b>Total</b>	<b>26(12.56%)</b>	<b>117(56.52%)</b>	<b>64(30.92%)</b>	<b>207(100%)</b>	
<b>11.AntenatalVisit</b>					
<b>≥ 3</b>	14(11.86%)	68(57.63%)	36(30.51%)	118(39.33%)	<b>P=0.460 x<sup>2</sup>=1.55 df=2</b>
<b>MORE THEN 3</b>	14(8.33%)	107 (58.33%)	61 (33.33%)	182(60.67%)	
<b>12.Presence/Absence of ASHA</b>					
<b>Present</b>	14 (5.81%)	163 (67.64%)	64 (26.55%)	<b>241 (80.33%)</b>	<b>P=0.00001, x2 =47.132, df=2</b>
<b>Absent</b>	14 (23.72%)	12 (20.34%)	33 (55.93%)	<b>59 (19.67%)</b>	
<b>Total</b>	<b>28(9.33%)</b>	<b>175(58.33%)</b>	<b>97(32.33%)</b>	<b>300 (100%)</b>	
<b>13. Mode Of Delivery</b>					
<b>Normal</b>	28(11.16%)	160 (63.75%)	63 (25.10%)	<b>251 (55.67%)</b>	<b>Fisher P=0.00000001, df= 2</b>
<b>Caesarean delivery</b>	0(0.00%)	15 (30.61%)	34 (69.39%)	<b>49 (43.33%)</b>	
<b>TOTAL</b>	<b>28(8.38%)</b>	<b>175(58.33%)</b>	<b>97(32.33%)</b>	<b>300 (100%)</b>	

**TABLE 4 LOGISTIC REGRESSION ANALYSIS FOR PREFERENCE IN REGARD TO PLACE OF DELIVERY**

Background characteristics	Preference of delivery							
	Home is base category							
	Public				Private			
	RR	p-value	[95% Conf. Interval]		RR	p-value	[95% Conf. Interval]	
		Lower	Upper			Lower	Upper	
<b>Caste</b>								
<b>General</b>								
<b>OBC</b>	1.10	0.86	0.38	3.23	8.27	0.01	1.91	35.88
<b>SC/ST</b>	2.55	0.28	0.47	13.87	8.22	0.06	0.90	74.84
<b>Maternal education</b>								
<b>Illiterate</b>								
<b>Literate</b>	1.95	0.23	0.66	5.82	2.55	0.19	0.63	10.27
<b>Husband's education</b>								
<b>Illiterate</b>								
<b>Literate</b>	0.26	0.09	0.06	1.21	2.14	0.57	0.16	29.28
<b>SES Class</b>								
<b>Upper</b>								
<b>Middle</b>	1.20	0.90	0.07	21.85	11.11	0.23	0.22	560.17
<b>Lower</b>	2.41	0.48	0.22	27.02	4.50	0.40	0.13	150.12
<b>Occupation of husband</b>								
<b>Unskilled/ Semi-skilled</b>								
<b>Skilled/Highly skilled</b>	1.40	0.53	0.48	4.10	4.32	0.03	1.12	16.65
<b>Parity</b>								
<b>1-2.</b>								
<b>&gt;2</b>	0.24	<b>0.01</b>	0.08	0.72	0.43	0.23	0.11	1.71



<b>Delivery of previous child</b>								
<b>Normal</b>	Reference				Reference			
<b>C-section</b>	0.44	0.41	0.06	3.18	1.83	0.60	0.19	18.07
<b>ASHA at delivery</b>								
<b>Present</b>	Reference				Reference			
<b>Absent</b>	0.66	0.56	0.16	2.67	1.56	0.58	0.33	7.48
<b>Type of facility</b>								
<b>Government</b>	Reference				Reference			
<b>Private</b>	2.39	0.47	0.22	26.01	5.04	0.23	0.37	68.69
<b>Intercept</b>	11.6639				0.009098			

**TABLE 5 LOGISTIC REGRESSION ANALYSIS FOR PRACTICE IN REGARD TO PLACE OF DELIVERY**

Background characteristics	Actual delivery							
	Home is base category							
	Public				Private			
	RR	p-value	[95% Conf. Interval]		RR	p-value	[95% Conf. Interval]	
		Lower	Upper	Lower	Upper			
<b>Caste</b>								
<b>General</b>	Reference				Reference			
<b>OBC</b>	0.62	0.332	0.23	1.64	1.77	0.298	0.60	5.18
<b>SC/ST</b>	1.33	0.699	0.31	5.62	2.36	0.294	0.47	11.81
<b>Maternal education</b>								
<b>Illiterate</b>	Reference				Reference			
<b>Literate</b>	1.54	0.399	0.56	4.23	3.02	0.04	1.00	9.11
<b>Husband's education</b>								
<b>Illiterate</b>	Reference				Reference			
<b>Literate</b>	0.73	0.622	0.21	2.56	0.99	0.993	0.22	4.40
<b>Parity</b>								
<b>1-2.</b>	Reference				Reference			
<b>&gt;2</b>	0.30	0.016	0.11	0.79	0.24	0.010	0.08	0.71
<b>Delivery of previous child</b>								
<b>Normal</b>	Reference				Reference			
<b>C-section</b>	3.09	0.329	0.32	29.71	7.54	0.079	0.79	71.80
<b>ASHA at delivery</b>								
<b>Present</b>	Reference				Reference			
<b>Absent</b>	0.18	0.004	0.05	0.57	0.61	0.398	0.20	1.92
<b>Intercept</b>	12.74				1.48			

**Figures**

**FIGURE 1 PRACTICE FOR PLACE OF DELIVERY AND PREFERENCE FOR PLACE OF DELIVERY**

