

Place of Birth: Why Urban Women Still Prefer Home Deliveries?

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ABSTRACT In spite advances in medical care and services urban women prefer home deliveries followed by public facility compared to private facility. The NFHS-1 and 2 data are utilized for this analysis. The reasons are many. Multinomial regression it revealed that a good proportion of short-term migrants, respondents with low levels of education, lack of media exposure (radio, News paper reading, and T.V), low standard of living, SC/ST, are more log odds of using home and public facility than private facility. Further, a good proportion of Hindus preferred home and public facility in comparison to private facility during 1991 (NFHS-1) whereas it is quite opposite during 1999 (NFHS-2) with reference to other religious populations. The log odds are more prominent for home deliveries with reference to private facility. The log odds are somewhat less prominent for public facility with reference to private facility. It shows that some public facilities are functioning well. Though private facility is expensive women with good standards of living, media exposed, and higher levels of education have favoured private facility.

INTRODUCTION

Place of delivery is an important aspect reproductive health care. The place of delivery often determines the quality of care received by the mother and infant and is an important factor in differential risks of perinatal mortality. Women in rural areas and urban slums in developing countries have less access to reproductive health services than do middle and upper income urban women. In urban areas the access to health services varies between short and long term migrants. However, very few studies have been conducted on the utilization of health services between these two groups.

Studies show most significant factor that influences home delivery was a habit (Nuwaha and Amooti-Kaguna, 1999). A study in Delhi revealed that non-institutional deliveries (home deliveries) were found in 42.6%, maximum being in resettlement and unauthorized colonies. Economic status was identified as one of the determining factors of preference for non-institutional deliveries (Gupta 1999). A study in slums of Lucknow revealed that over 50% of deliveries were performed by untrained persons, and 80% were home deliveries, despite the availability of medical facilities (Kapoor, Srivastava, Misra, Sharma, Thakur, Srivastava and Singh 1996). In a study in urban Brazil it revealed that the officially recorded proportion of home deliveries was 0.5%; however, subsequent research indicated that it ranged from

0.13% to 0.3% of all registered births, since only 36.8% of live births actually took place at home. The reasons for home deliveries included lack of transportation to the hospital and insufficient time to reach the hospital (Jorge, Gotlieb, and de Andrade 1997). Further, use of antenatal care services has a significant and positive effect on their place of delivery (Kavitha and Audinarayana, 1997). Children who were not born in a hospital had an increased risk of neonatal death (odds ratio, 1.93; 95% confidence interval: 1.02, 3.63; X squared = 4.88; $p > 0.03$). In addition, it is noted that a significant higher proportion of mothers of children not born in a hospital were teenagers (<20 years old) and had not completed their primary education. Overall, it seems that the risk of neonatal mortality for home deliveries is complex (de Almeida; Rodrigues; Alencar; and Novaes, 2000). The determinants of place of delivery seem to be social, cultural, economic and psychological. In spite large inputs by Government of India on health infrastructure the people are not satisfied with availability of health services both in rural and urban areas.

In this study an attempt has been made to see the differential utilization of health facilities by short and long term migrants particularly for delivery services in urban India.

METHODOLOGY

National Family Health Survey (NFHS, 1990

and 1999) data on urban India has been utilized for this study. The sample consists of 27534 respondents (NFHS-1) and 14913 (NFHS-2) conducted in the years 1990 and 1999 respectively. The place of birth data for the last birth consists of a sample of 10163 for NFHS-1 and 4048 for NFHS-2. The urban data pertaining to NFHS-1 25 states of India while the urban data pertaining to NFHS-2 consists of fifteen states such as Bihar, Andhra Pradesh, Uttar Pradesh, Karnataka, Madhya Pradesh, Gujarat, Rajasthan, West Bengal, Sikkim, Punjab, Tamil Nadu, Karnataka, Kerala, Orissa and Haryana. Place of delivery for the last child has been taken as a dependent variable to study the differential use of health services by the short and long-term migrant, usual resident or locals of urban areas. This variable manifests the utilization of health facilities. This is a cultural and social variable too as lot of social and cultural implications have been attached to place of delivery. Several independent variables such as educational status, religion, radio listening, living status of child, and sex of the child born have been considered. Initially chi-square tests were conducted to see the differences between variables. Place of delivery of the last child was differentially coded as respondent's home, other home, parent's home, government hospital, government health center, sub center, private hospital/clinic and others. The place of delivery was finally recoded in three-way format as homes (respondents home, other home, and parents home), public sector (government hospital, government health center, and sub center), and private sector (private hospital/clinic and others).

RESULTS AND DISCUSSION

Reasons for not Receiving Antenatal Care:

Several reasons have been put forth. A good proportion (58.5 per cent: 1991 and 59.5 per cent: 1999) of respondents have not utilized any antenatal, as it is not necessary. Lack of knowledge of services (12.8 per cent: 1991) and financial cost (14.7 per cent: 1999) were next prominent reason for not obtaining antenatal care. Other reasons are presented in table 1.

Multinomial Regression Analysis: Multinomial Logistic Regression is useful for situations in which one wants to be able to classify subjects based on values of a set of predictor variables. This type of regression is similar to logistic regression, but it is more general because the

Table 1: Reasons for not receiving antenatal care

<i>Reasons for not receiving antenatal care</i>	<i>NFHS-1</i>	<i>NFHS-2</i>
Lack of knowledge of services	12.8	1.5
Not necessary	58.5	59.5
Not customary	5.5	4.3
Financial cost	6.9	14.7
Inconvenient	2.5	
Poor quality of service	1.3	0.8
No time to go	5.3	1.8
Not permitted to go	5.2	8.5
Other	1.7	1.2
Don't know, missing	0.2	
Too far/ no transport		3.7
No health worker visited		1.5
Total (per cent)	100	100
Number	18168	11018

dependent variable is not restricted to two categories.

Multinomial Logistic Regression Data Considerations

Data. The dependent variable should be categorical. Independent variables can be factors or covariates. In general, factors should be categorical variables and covariates should be continuous variables.

It is assumed that the odds ratios of any two categories are independent of all other response categories. For example, if a new product is introduced to a market, this assumption states that the market shares of all other products are affected proportionally equally. Also, given a covariate pattern, the responses are assumed to be independent multinomial variables.

In this analysis, the dependent variable place of delivery has been recoded for the sake of multinomial logistic analysis. In this analysis place of delivery has been considered as dependent variable/response variable.

p1: Homes

p2: Public sector

p3: Private Sector (Reference category)

In this analysis private sector has been considered as reference category. In each variable last category is treated as reference. The categories of response variable, is mutually exclusive and exhaustive. A sample member must fall in one and only one of the categories. Suppose the reference category is "Private sector". The choice is arbitrary.

Predictor variables such as years of living in place of residence, religion, ethnicity, highest education level completed by the respondent, sex

of the child, living status of child, and listens to radio every week were considered as explanatory variables for the NFHS-1 data. Variables such as Watching Television every day, newspaper reading and standard of living index have been considered as additional variables in the NFHS-2 data.

Deliveries at Home: In both analysis years of stay emerged as an important variable for the utilization of home deliveries. Short-term (< 10 years) respondents were at 1.176 (NFHS1) and 1.583 (NFHS-2) times of risk (log odds) of utilizing home deliveries than long-term residents with private health facility as reference. This shows that long-term residents have better access to private health facility than short-term residents.

Education emerged as an important variable. Respondents with no education were found to have 37.812 and 12.228 log odds of preferring home deliveries than private facility with reference category of higher education respectively during 1991 (NFHS-1) and 1999 (NFHS-2). It was 12.936, and 6.513 log odds for primary level of education respectively during 1991 and 1999. Similarly it was 4.756 and 3.566 log odds for respondents with secondary level of education respectively during 1991 and 1999. It shows that highly educated women prefer private facility for delivery.

Mass media has a greater influence on the change in behaviour. Radio listening promotes awareness about health facilities. Respondents who have not listened to radio were at 1.704 log odds of accepting home deliveries during 1991 (NFHS-1). Radio listening is not prominent in promoting health awareness during 1999 (NFHS-2).

With efflux of time television has almost replaced radio as a better medium than radio. Consequently watching television during 1999 promoted health awareness. Women who were not watching Television were at 1.421 times log odds of having home deliveries compared to those respondents who were watching television regularly.

Religion is another important variable. In general Hindus of 1991 (NFHS- 1) sample were at 1.321 times log odds of utilizing home deliveries than other religious population. During 1999, lesser proportion of Hindu respondents significantly had home deliveries where as during 1999 (NFHS-2) it is other way (.706 log odds). It shows Hindus as a whole showed improvement in the utilization of health services over a period of time.

Ethnicity is another important variable. Hindus consists of several castes such as Scheduled castes and tribes and several other backward castes (OBC) besides forward caste population. However, a few SC and ST respondents were Christians and Muslims. Their proportion is very small in these castes. Other caste population includes respondents of forward caste Hindu population and other religions. SC/ ST and other backward caste population were at 2.154 log odds and 3.112 log odds of utilizing home deliveries than other caste and religious population during 1991 (NFHS-1). It reduced to 1.622 and 1.225 log odds respectively for SC/ ST and other backward caste population (OBC) during 1999 (NFHS-2). It shows that utilization of home deliveries has declined over a period of time. The decline has been more prominent in OBC than SC/ST.

The outcome pregnancy has an influence on seeking home delivery. Infants who have not survived found to have been delivered in homes in NFHS-1 survey (1.413 log odds). Usually mothers and elders have a perception about the survival chances of babies in the womb. If the progress of the baby during pregnancy is normal they do not show much interest in place of delivery for such children. This variable is not significant during 1999.

Standard of living considered in NFHS-2 showed influence on home deliveries. Respondents with low and moderate standard of living were at 2.811 and 1.860 log odds of utilizing home deliveries than respondents with high standard of living with private facility as reference to home deliveries.

Deliveries at Public Sector Hospitals: The log odds of utilization of public health facility with reference to private facility are considered here. Migrant status though influenced utilization of public sector hospitals in preference to private facility in both NFHS surveys, the findings of NFHS-1 are not significant (1.011 log odds). Nevertheless, the findings are significant during 1999 (NFHS-2). It means that more proportion of short-term migrants are utilizing public health facility than long-term migrants during 1999 (1.464 times log odds).

Education has emerged as an important determinant of utilization of public sector hospitals in reference to private sector hospitals. Public sector hospitals have emerged as preferred places of place of delivery next to home deliveries

at all levels of education of respondents in both the surveys. It may be due to less cost of services. The log odds of utilizing public facility with reference to private facility were 5.401 during 1991 and 1.464 times during 1999 for respondents with no education keeping higher education as control in both the surveys. The log odds were 3.523 during 1991 and 2.534 times during 1999 for respondents for the utilization of public facility with primary education in both the surveys. At secondary level also the risk was 2.121 and 2.037 times for both the surveys. There is a small decrease between 1991 and 1999.

Among mass media radio seems to have better influence on place of delivery. Respondents who have not listened to radio were 1.302 times of more odds of utilizing public sector hospitals in reference to private sector hospitals than other wise.

Reading newspaper (1.472 log odds) and watching television (1.421 log odds) have emerged as important determinants in the utilization of public facility in 1999. As a result radio listening has not emerged as an important variable in 1999.

SC/ST (1.304 times) and other backward castes (3.380 times) were at risk of utilizing public facility with reference to other caste population and private health facility in 1991 where as these differentials were not significant for SC/ST. Other backward caste population has significantly and negatively preferred public facility in reference other caste population and to private facility.

Several demographic variables have been found to be determinants of place of birth. Children ever born have significant positive association with home delivery in comparison to use of private facility by 1.27 times. Further

respondents whose child was not alive were 1.455 times (sig. at .00) more at risk of utilizing services of public sector hospitals than private sector than whose child survived. Sex of the child born and migrant status have not emerged as significant. It seems migrants have preferred both private and public sector hospitals as better places for delivery than home.

Full Factorial Method of Logistic Regression:

Full factorial method with interaction between years of residence and ethnicity revealed that short-term (<10 years migrants) migrants and SC/ST have utilized public sector health facility by 1.484 times (significant at .002 level) (Table not given). However short-term migrants and those who have not listened to radio have not utilized home facility for delivery (significant at .001) with reference to private facility.

CONCLUSIONS

In this analysis private health facility as place of birth is taken as reference category. The log odds of utilization home and public health facility were measured using several causal variables such as social, economic and cultural factors. Education is found to be a prominent determinant of health seeking irrespective of migrant status. Illiterate, Primary and secondary levels were at more risk of utilizing home and public facility than women with higher educational attainment. It shows that women with higher education have favoured private facility as place of birth due to better attention.

Religion is another variable influencing utilization of health services. Most of the sample belongs

Table 2: Multinomial logistic regression of NFHS-1 and NFHS-2 data

Place of delivery	NFHS-1 Significance	Odds ratio	NFHS-2 Significance	Odds ratio
<i>Homes</i>				
Intercept				
<i>Years of residence</i>				
<10 years	.010	1.176	.000	1.583
>10 years (R)				
<i>Highest level of education of the respondent</i>				
No education	.000	48.291	.000	12.228
Primary	.000	12.936	.000	6.513
Secondary	.000	4.756	.000	3.566
Higher (R)		0		
<i>Listens to radio every week</i>				
No	.000	1.704	.534	.943
Yes (R)				

Table 2: Contd

<i>Place of delivery Homes</i>	<i>NFHS-1 Significance</i>	<i>Odds ratio</i>	<i>NFHS-2 Significance</i>	<i>Odds ratio</i>
<i>Watches TV every week</i>				
No			.004	1.421
Yes (R)				
<i>Reads News paper every week</i>				
No			.001	1.472
Yes (R)				
<i>Ethnicity</i>				
SC/ST	.000	2.154	.000	1.622
OBC	.000	3.112	.053	1.225
Others (R)				
<i>Child alive</i>				
No	.051	1.413	.335	.795
Yes (R)				
<i>Sex of the child</i>				
Male	.509	.963		
Female (R)				
<i>Religion</i>				
Hindus	.000	1.321	.001	.706
Others (R)				
<i>Standard of Living</i>				
Low			.000	2.811
Medium			.000	1.860
High				
<i>Public Sector</i>				
Intercept				
<i>Years of residence</i>				
<10 years	.855	1.011	.000	1.464
>10 years (R)				
<i>Listens to radio every week</i>				
No	.000	1.293	.362	.919
Yes (R)			.362	.919
<i>Watches TV every week</i>				
No			.412	.897
Yes (R)				
<i>Reads News paper every week</i>				
No			.021	1.304
Yes (R)				
<i>Highest level of education of the respondent</i>				
No education	.000	5.401		
Primary	.000	3.523		
Secondary	.000	2.121		
Higher (R)				
<i>Ethnicity</i>				
SC/ST	.029	1.304	.569	1.078
OBC	.000	3.380	.050	.810
Others (R)				
<i>Child alive</i>				
No	.133	1.310	.335	.795
Yes (R)				
<i>Sex of the child</i>				
Male	.571	1.032		
Female (R)				
<i>Religion</i>				
Hindus	.000	1.665	.724	1.040
Others (R)				
<i>Standard of Living</i>				
Low			.000	3.098
Medium			.000	2.317
High (R)				

R = Reference Category

to Hindus; hence this variable is categorized Hindus and others. Hindus in general preferred homes and public facility as place of delivery compared to other castes during 1991 (NFHS-1). However, there is perceptible change among Hindus during 1999 (NFHS-2) that favoured private facility compared to other castes.

Radio listening uniformly influenced utilization of private facility for delivery. However, during 1999 survey TV and newspaper have emerged as important media influencing place of delivery. As respondents belong to urban areas more exposure to mass media may promote utilization of better health facilities.

However, migrant status has an influence on place of delivery. Short-term migrants have preferred home during 1991 and 1999 significantly with reference to private facility. A log odd of choosing public facility for delivery care during 1999 is significant whereas the value is not significant for 1991 data.

Short-term migrants who are SC/ST have preferred home and public sector hospital as place of birth with private facility as reference variable. Short-term respondents who have not listened to radio (1991) were also found to be utilizing home deliveries. Thus migrant status seems to play an important role in seeking medical assistance.

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