Skilled Birth Attendant (SBA) and Home Delivery in India: A Geographical Study

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Abstract:

Objective: *Objectives of this paper is to identify the regional gap in receiving services from SBA for delivery being conducted at home in India as well as to explore the determinant of safe delivery at home.*

Data and methods: *We have used cross-sectional data from all three rounds of National Family Health Survey (NFHS) conducted during 1992-93, 1998-99 and 2005-06. We have used bivariate, chi square test and logistic regression for the present study.*

Results: *Thirty Seven percent of total delivery was conducted in health facility whereas 13% of home deliveries were assisted by SBA in India. India is still behind in receiving SBA services compared to MDG goal among currently married women which is 100 percent with respect to the goal defined by the United Nations. Results show that safe home delivery is significantly associated with education of mother, religion, wealth quintile, birth order and ANC visit. Further the variables like higher educated mother, Muslim women, women from higher wealth quintile in receiving ANC services during pregnancy were the beneficiary in receiving services from SBA as well during home delivery. Thus, in all three rounds of NFHS the progress in this regard is still lagging behind after numerous efforts being made by government. Women from Uttar Pradesh, Bihar and Arunachal Pradesh were receiving less SBA service at home delivery.*

Conclusion: *Main predictor of safe home delivery is education of mother, religion, wealth quintile, birth order and ANC visits. It is very unfortunate that a delivery is taking place at home if it is so then at least it should be conducted by skilled birth attendant (SBA). Government have got to convince the populace for institutional delivery so that the untimely deaths of women can be averted with proper treatment and safe delivery. Women should schedule in advance for delivery during pregnancy so that safe delivery can take place and also the number of maternal deaths can be reduced. Besides this government should focus on poor uneducated and younger rural women as well as it should ensure at least four ANC visits for every pregnant woman as well. So that maternal mortality can be combated on time.*

I.   Introduction

At global level, each year 350,000 maternal deaths happen and 2 million newborns die within first 24 hours of life. Majority of these deaths occur in low-income countries and most of the death can be averted through modern health care [3]. Delivery conducted by SBAs is the fifth Millennium Development Goal (MDG) and an indicator of progress towards reducing maternal mortality worldwide [21].

Many studies have 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 [2, 4, and 5]. Maternal Mortality Ratio (MMR) has a direct impact on infant mortality and those children whose mothers die during first 6 weeks of delivery are more likely to die in the first two years of life than those babies whose mothers survive [12, 14, and 13]. World Health Organization (WHO) defines skilled birth attendant (SBA) as "an accredited health professional such as a midwife, doctor or nurse who has been educated and trained to proficiency in the skills needed to manage normal pregnancies, childbirth and immediate postnatal period, and in the identification, management and referral of complications in women and newborns''[1].

Seventy percent of India's population still live in rural area and most of these populations are yet far away to access basic health facility. NFHS-3 report shows that only 38% women are going for institutional delivery in India and remaining deliveries being conducted at home [9]. These deliveries still depend on traditional health provider or skill birth attendant. In this study, we have identified the gap of skill birth attendant for home delivery through trend and regional variation of home delivery conducted by SBA. Through this study we have identified the determinant of home delivery conducted by SBA and determinant of safe delivery. Because almost all complications which arises can be attended by SBA and if the condition of women get worse then it is referred to higher level.

II. Data and method

We have used cross-sectional data from all three rounds of National Family Health Survey (NFHS) conducted during 1992-93, 1998-99 and 2005-06 [6, 7, and 8]. NFHS is a nationally representative, large scale, multi-round survey in a representative sample of households throughout India.

To make the estimates representative and to account for the multi-stage sampling design has been adopted, we have used appropriate weights in the analysis. The details of the sampling weights are given in NFHS reports of various rounds [7. 8]. The present analysis is restricted to 28,316 children below five years of age.

Exposure variable and Outcome variable
This study utilized several exposure variables that are age of respondent, place of residence, educational status, media exposure, marital status, employment status, religion, wealth quintile, birth order, women autonomy, ANC visits and caste of the respondents. Skill birth attendant (SBA) at home delivery is the outcome variable of this study.

Analytical Approach
Bivariate, Chi-square test and logistic regression analysis have been used to full fill the objective of the present study.STATA-12.0, ArcMap-10 and Origin-8 software is used for data analysis, preparing map and figure, respectively.

III. Results

Only, 38 % of deliveries were conducted in health facility and rest of the delivery at home. Thus, result show that only 13 % of home delivery were conducted by Skilled Birth Attendant (SBA) in India.
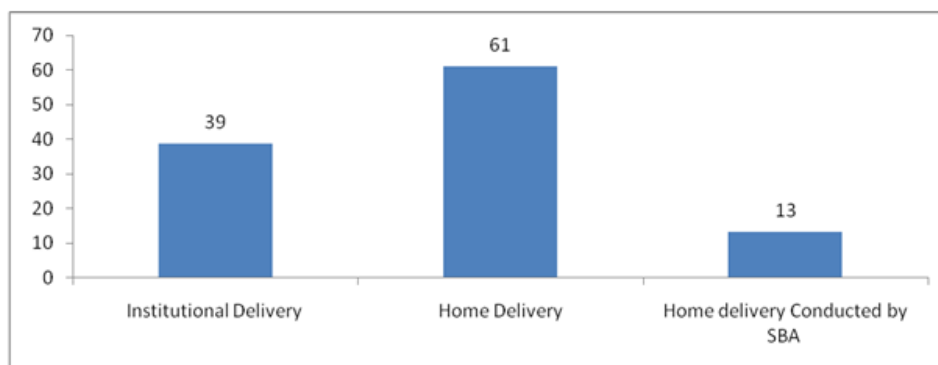

Figure 1: Safe Delivery Status in India, 2005-06

Table 1 is showing the trend in Home delivery conducted by Skill Birth attendant. It is apparent from the table that the southern part of the country is having the highest percentage of the skilled birth attendant 20.5 percent and it is showing an increase in the successive rounds of the survey. We can see that it is the lowest in the region of east India only 5.5 percent and in round three it is 11.7 percent which is below the national average which is 10.5 percent and 13.4 percent respectively.

Table 1: Trend in Home delivery conducted by Skill Birth attendant(SBA)

Years	North	East	Northeast	Central	West	South	India
1992-93(NFHS-1)	15.7	5.5	8.9	7.5	15.6	20.5	10.5
1998-99(NFHS-2)	21.9	10.2	7.6	9.7	14.1	24.6	13.4
2005-06(NFHS-3)	18.8	11.7	10.7	10.4	17.1	25.1	13.4

Figure 2 Shows that Uttar Pradesh, Uttarakhand and Arunachal Pradesh are worse performing states in India.
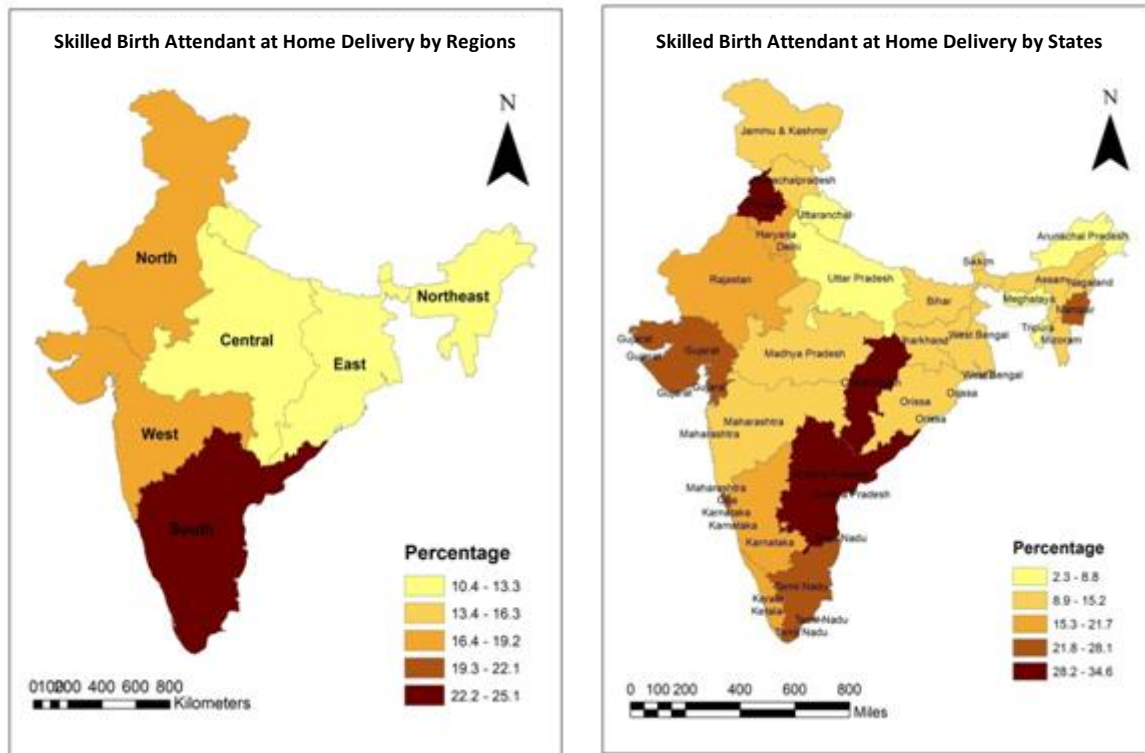

Figure 1

(A) **(B)**
Figure 2: Skilled Birth Attendant (SBA) at home delivery by region and states (India)

Table 2 represents the percentage of live birth delivered by any health professionals at home in different regions of India according to selected background characteristics. Delivery attended by any health professional was found to be highest in the southern region 24.3 percent in the age group 15-19 years whereas it was lowest in the North East region which is 9.1 percent in 15-19 years which is below the national average which shows that it is demographically less developed and needs further more attention towards more people going for delivery attended by health professional at home which will ward off the maternal deaths occurring due to negligence. Those people who belong to other religion are having delivery conducted by health professional at home 43.3 percent followed by Hindu religion 17.8 percent in the northern region. It is lowest in the Northeast region 7.6 percent in the Muslim religion category followed by the other religion category which is 7.6 percent. People belonging to the poorest wealth quintile in the northeast region are having the lowest percentage for delivery of live birth by health professional which is only 4.1 percent

Table 2: Percentage of home delivery assisted by any health professional at home by Region, according to background characteristics, India, 2005-06

Background Characteristics	North (%)	N	North east(%)	N	South (%)	N	West (%)	N	East (%)	N	Central(%)	N	India (%)	N
Age group of mother														
15-19	19.7	563	9.9	1,023	29.2	386	16.1	286	12.1	994	13.8	1,280	15.4	4,653
20-24	21.9	1,797	13.8	1,968	25.6	622	18.3	748	14.4	1,788	11.8	3,324	15.6	10,447
25-34	16.1	1,654	10.0	2,343	21.3	368	16.0	515	9.7	1,766	9.1	3,350	11.3	9,774
35-49	12.2	261	6.9	445	23.0	45	13.3	33	9.6	304	6.2	575	8.94	1,574
	chi2(3) = 15.7 Pr = 0.001		chi2(3) = 15.6 Pr = 0.01		chi2(3) = 6.89 Pr = 0.08		chi2(3) = 0.63 Pr = 0.89		chi2(3) = 18.7 Pr = 0.000		chi2(3) = 32.2 Pr = 0.000		chi2(3) = 67.19 Pr = 0.000	

Religion

	%1	N1	%2	N2	%3	N3	%4	N4	%5	N5	%6	N6	%7	N7
Hindu	17.8	3,338	15.2	1,619	24.6	1,331	17.7	1,401	13.2	3,666	11.7	7,630	14.2	18,985
Muslim	13.1	856	7.1	935	24.7	134	11.8	198	8.2	1,263	2.24	1,576	8.9	4,962
Other	43.3	339	7.6	3,569	41.4	34	17.3	78	7.9	269	24.8	47	19.1	4,336
	chi2(2) = 145.2579 Pr = 0.000		chi2(2) = 60.6694 Pr = 0.000		chi2(2) = 3.3970 Pr = 0.183		chi2(2) = 0.7479 Pr = 0.688		chi2(2) = 14.5537 Pr = 0.001		chi2(2) = 47.47 Pr = 0.000		chi2(2) = 102.8402 Pr = 0.000	

Wealth Index

	%1	N1	%2	N2	%3	N3	%4	N4	%5	N5	%6	N6	%7	N7
Poorest	9.0	621	4.1	1,056	21.3	344	7.7	349	7.4	2,536	7.8	3,140	7.8	8,046
Poorer	13.1	831	9.5	1,927	19.6	429	12.6	392	12.3	1,363	11.4	2,432	11.2	7,374
Middle	20.3	1,294	12.9	1,828	28.1	462	17.3	454	17.8	747	17.3	1,745	16.7	6,530
Richer	24.6	1,186	27.7	1,043	33.6	228	27.6	364	22.8	474	33.5	1,360	22.9	4,655
Richest	36.0	603	34.1	278	43.3	37	39.7	120	21.5	90	33.1	584	34.1	1,712
	chi2(4) = 127.71 Pr = 0.00		chi2(4) = 615.09 Pr = 0.000		chi2(4) = 29.6227 Pr = 0.000		chi2(4) = 72.49		chi2(4) = 137.1182 Pr = 0.000		chi2(4) = 192.9541 Pr = 0.000		chi2(4) = 1050.7057 Pr = 0.000	

Media Exposure

	%1	N1	%2	N2	%3	N3	%4	N4	%5	N5	%6	N6	%7	N7
No	13.1	1,706	4.4	1,566	23.4	508	9.5	620	9.4	2,549	6.3	3,508	9.3	10,457
Yes	24.4	2,829	13.8	4,566	25.9	992	22.3	1,059	14	2,661	13.3	5,753	16.6	17,860
	chi2(1) = 50.0394 Pr = 0.000		chi2(1) = 205.3932 Pr = 0.000		chi2(1) = 7.4563 Pr = 0.006		chi2(1) = 43.3342 Pr = 0.000		chi2(1) = 43.8734 Pr = 0.000		chi2(1) = 143.6510 Pr = 0.000		chi2(1) = 452.1636 Pr = 0.000	

Caste groups

	%1	N1	%2	N2	%3	N3	%4	N4	%5	N5	%6	N6	%7	N7
SC/ST	17.7	1,729	9.3	3,702	23.3	564	14	583	7.5	1,902	8.3	3,343	11	11,823
OBC	18.6	1,149	18	834	25.9	750	21.6	573	14.8	1,903	10.9	4,216	14.8	9,425
Other	21.2	1,460	12.4	1,139	27.6	145	16.8	490	13.3	1,138	13.5	1,697	15.3	6,069
	chi2(2) = 1.2985 Pr = 0.522		chi2(2) = 22.86 Pr = 0.000		chi2(2) = 8.0070 Pr = 0.018		chi2(2) = 6.8822 Pr = 0.032		chi2(2) = 48.7376 Pr = 0.000		chi2(2) = 16.0845 Pr = 0.000		chi2(2) = 63.6854 Pr = 0.000	

Place of residence

	%1	N1	%2	N2	%3	N3	%4	N4	%5	N5	%6	N6	%7	N7
Urban	23.9	1,139	16.7	1,275	26.8	355	21.7	495	15.4	932	17.7	2,093	19.6	6,289
Rural	17.7	3,396	10.2	4,857	24.6	1,145	15.9	1,184	11.4	4,278	9.2	7,168	12.4	22,028
	chi2(1) = 1.6575 Pr = 0.198		chi2(1) = 246.7859 Pr = 0.000		chi2(1) = 0.9205 Pr = 0.337		chi2(1) = 2.1441 Pr = 0.143		chi2(1) = 7.6150 Pr = 0.006		chi2(1) = 41.6661 Pr = 0.000		chi2(1) = 180.7577 Pr = 0.000	

Husband's education

	%1	N1	%2	N2	%3	N3	%4	N4	%5	N5	%6	N6	%7	N7
No education	12.4	1,448	5.9	1,690	24.3	661	9.2	465	8	2,321	6.4	3,212	9.2	9,797
<5 years complete	14.4	196	6.6	938	23.5	136	19.3	182	8.7	606	10.1	553	11.4	2,611
5-7 years complete	18.7	801	8.4	1,092	25.7	268	16.8	347	13.1	780	9.5	1,459	13.7	4,747
8-9 years complete	20.1	819	15.6	1,250	19.6	148	25	324	16	609	12	1,798	15.7	4,948
10-11 years complete	23.8	738	19.4	528	27.7	154	14.7	194	18.2	424	13.1	1,020	17.3	3,058
12 or more years complete	34.1	515	40.7	527	35.9	114	27	155	24.3	338	19.8	1,114	24.5	2,763
	chi2(6) = 86.56 Pr = 0.00		chi2(6) = 489.8089 Pr = 0.000		chi2(6) = 11.8190 Pr = 0.066		chi2(6) = 36.9249 Pr = 0.000		chi2(6) = 146.8989 Pr = 0.000		chi2(6) = 167.9617 Pr = 0.000		chi2(6) = 738.4894 Pr = 0.000	

Women autonomy

	%1	N1	%2	N2	%3	N3	%4	N4	%5	N5	%6	N6	%7	N7
Low Autonomous	16.1	623	5.6	398	19.3	302	13.7	169	13.1	745	12.1	1,364	13.5	3,601

Medium High	18.9	1,958	12	1,119	26.1	615	16.4	722	12.5	2,201	10.3	3,970	13.7	10,585
Autonomous	19.9	1,954	11	4,615	26.9	583	18.5	788	10.4	2,264	9.9	3,927	13	14,131
	chi2(2) = 4.0630 Pr = 0.131		chi2(2) = 19.0588 Pr = 0.000		chi2(2) = 5.2121 Pr = 0.074		chi2(2) = 1.2525 Pr = 0.535		chi2(2) = 5.2132 Pr = 0.074		chi2(2) = 1.6145 Pr = 0.446		chi2(2) = 3.0036 Pr = 0.223
Mother's education													
No education	14.5	2,773	5.7	2,460	21.8	899	11.6	836	8.7	3,577	7.2	6,169	9.7	16,714
<5 years complete	19	194	6.4	990	27.6	129	13.3	174	13.1	516	13	471	13.9	2,474
5-7 years complete	25.3	633	10.1	1,112	29.2	231	21	343	15.9	565	14.5	1,167	18	4,051
8-9 years complete	25.7	430	21.7	1,019	25.7	126	27.1	206	24.4	331	19.8	902	22.7	3,014
10-11 years complete	39.6	332	31.1	309	38.5	90	20.3	76	32.5	176	26.2	288	30.9	1,271
12 or more years complete	43.6	173	46.2	241	47.3	25	57.8	44	41.4	45	27.5	264	37.1	792
	chi2(5) = 64.41 Pr = 0.000		chi2(5) = 504.6189 Pr = 0.000		chi2(5) = 30.0991 Pr = 0.000		chi2(5) = 66.6817 Pr = 0.000		chi2(5) = 214.2104 Pr = 0.000		chi2(5) = 286.15 Pr = 0.0		chi2(5) = 1122.6241 Pr = 0.000
Birth Order													
1	26.4	984	18.9	1,492	30.7	196	24.1	415	48.60	1,146	17.7	1,736	20.0	5,998
2-3	20.3	2,029	10.2	2,589	25.2	339	16.2	845	11.8	2,141	11.0	3,653	14.2	12,110
4-5	13.3	950	6.7	1,300	18.2	516	14.1	845	9.2	2,141	7.9	2,256	9.8	6,277
6+	9.1	570	2.6	748	13.8	516	4.8	104	8.1	746	4.8	1,613	6.4	3,929
	chi2(2) = 105.3565 Pr = 0.000		chi2(2) = 109.10 Pr = 0.000		chi2(2) = 20.08 Pr = 0.000		chi2(2) = 23.67 Pr = 0.000		chi2(2) = 46.6109 Pr = 0.000		chi2(2) = 151.64 Pr = 0.00		chi2(2) = 447.3 Pr = 0.000
Any Visit During The Pregnancy													
No Visit	8.4	763	4.5	1,594	9.5	196	10.3	240	9.5	1,495	5.2	1,966	7.6	6,254
3 or less than 3	21.9	1,452	14.1	1,771	25.1	339	17.2	526	14	1,613	13.1	3,384	15.4	9,085
4+	34.7	809	22.8	786	32.1	516	28.9	341	21.1	490	26.1	734	28	3,676
	chi2(2) = 105.3565 Pr = 0.000		chi2(2) = 260.5545 Pr = 0.000		chi2(2) = 36.3441 Pr = 0.000		chi2(2) = 33.1522 Pr = 0.000		chi2(2) = 46.6109 Pr = 0.000		chi2(2) = 192.26 Pr = 0.00		chi2(2) = 735.8595 Pr = 0.000
Total	18.8	4,535	10.7	6,131	25.1	1,500	17.1	1,679	11.7	5,210	10.4	9,261	13.4	28,316

respectively and it is the highest for the richest wealth quintile 34.1 percent whereas the southern region is outperforming rest of the region in terms of delivery attended by skilled health professional 21.3 percent in the poorest wealth quintile, however the richest quintile shows 43.3 percent people going for delivery skilled health professional. Exposure to media was also playing an important role in determining the place of delivery and delivery by skilled health professional.SC/ST population in the central region is showing the least number of deliveries attended by the skilled health professional 8.3 percent which is below the national average of 11 percent. Number of household whose place of residence is urban are having more number of delivery attended by skilled health professional then the rural counter parts ,whereas in southern India the difference is not very much significant urban is 26.8 percent and rural is 24.6 percent. Eastern region is showing the lowest percentage of delivery attended by skilled health personnel which is only 15.4 percent also it is below the national average of 19.6 percent. Four or more number of visits during pregnancy is lowest in the northeast region 22.8 percent followed by 3 or less than 3 i.e., 14.1 percent.

Determinants of delivery conducted by any health professional at Home:

The table 3 shows the logistic regression showing the influence of health professional conducting delivery at home in India. Main predictor of safe home delivery is mother's education, religion, wealth quintile, birth order and ANC visit. Interesting point is that age of mother was inversely related to safe delivery at home after including birth order. Those women belonging to age group 35-49 are 31 percent more likely to have health professional at home for delivery than below 19 years. Women belonging to Muslim religion are 33 percent less likely to have health professional at home. Likelihood of receiving safe delivery at home increases with increase in wealth index and it is least for the women belonging to poorest wealth quintile in India. These results are consistent with the finding of bi-variate analysis. Those women who belong to OBC (OR=1.28, CI= 1.15 - 1.43) or general category (OR= 1.12, CI= 0.99 - 1.27) are more likely to have health professional at home for delivery than SC/ST women. As the number of years of education is positively associated with delivery conducted by health professional at home and women who received 12 or more years of education, are 80 % more likely to receive safe delivery at home. For those women whose place of residence is rural they are 11 percent less likely to have a health professional at the time of delivery than their counterpart in India. Increasing number of ANC visits is increasing positively for safe delivery at home and those women who had 4+ visits are 2.8 times more likely to have health professional at home for delivery. Result also verify that women from southern region (OR=1.33, CI= 1.10 - 1.62) are more likely to receive services of SBA as compared to northern region. Women from northeast and central region are less likely to receive safe delivery services compared to northern region.

Table 3: Logistic regression showing variables influencing the health professional at home delivery in India, 2005–2006

Predictors	Odds Ratio	[95% Conf. Interval]
Age of mother at birth		
15-19®	1	
20-24	1.04	0.90 - 1.20
25-34	1.17**	1.00 - 1.38
35-49	1.31**	1.02 - 1.70
Religion		
Hindu®	1	
Muslim	0.67***	0.58 - 0.78
Other	1.07	0.91 - 1.26
Wealth index		
Poorest®	1	
Poorer	1.04	0.91 - 1.20
Middle	1.27***	1.09 - 1.47
Richer	1.70***	1.45 - 2.01
Richest	1.91***	1.55 - 2.36
Media Exposure		
No®	1	
Yes	1.22***	1.09 - 1.37
Caste groups		
SC/ST®	1	
OBC	1.28***	1.15 - 1.43
Other	1.12*	0.99 - 1.27
Work status		
No®	1	
Yes	1.10**	1.00 - 1.20
Type of place of residence		
Urban®	1	
Rural	0.89**	0.80 - 0.99
Husband's education		
No education®	1	
<5 years complete	1.04	0.87 - 1.24
5-7 years complete	1.09	0.95 - 1.25
8-9 years complete	1.18**	1.02 - 1.36
10-11 years complete	1.13	0.97 - 1.33
12 or more years complete	1.38***	1.17 - 1.64
Respondent's education		
No education®	1	
<5 years complete	1.14	0.96 - 1.34
5-7 years complete	1.23***	1.08 - 1.4
8-9 years complete	1.33***	1.15 - 1.54
10-11 years complete	1.57***	1.31 - 1.9
12 or more years complete	1.82***	1.46 - 2.28
Birth Order		
1®	1	
2-3	0.72***	0.64 - 0.81
4-5	0.56***	0.47 - 0.66

6+	0.44***	0.35 - 0.55
Women autonomy		
Low Autonomous®	1	
Medium Autonomous	1.08	0.93 - 1.25
High Autonomous	1.12	0.96 - 1.30
ANC Visit During The Pregnancy		
No Visit®	1	
3 or less than 3	2.07***	1.83 - 2.33
4+	2.82***	2.46 - 3.24
Region		
North®	1	
East	1.05	0.90 - 1.22
Northeast	0.86*	0.73 - 1.01
Central	0.85**	0.75 - 0.97
West	0.97	0.80 - 1.17
South	1.33***	1.10 - 1.62

.P values- *** Significant at 1 percent; ** Significant at 5 percent; * Significant at 10 percent.
®- Reference category.

IV. Discussion

The main causes of maternal deaths have been recognized as haemorrhage, sepsis, obstructed labour, toxaemia, and unsafe abortion. The majority of these can be averted if complications during pregnancy and childbirth can be recognized and managed early. This can be achieved only if deliveries at a health facility or in community are conducted by a skilled birth attendant (SBA). Several studies from many countries show that presence of skilled birth attendant (SBA) at birth can effectively decrease maternal mortality [10] .Government of India has a dedicated programme under NRHM/RCH to ensure widespread coverage of all births with skilled attendance both in the institution and at community level and to provide access to emergency obstetric care services and neonatal care services for women and the new born. For full filling this purpose, skilled birth attendant training for ANMs/LHVs/SNs has been carried out in all the State of India to equip ANMs and Staff Nurses for controlling normal deliveries, identify complications, basic management and then refer at the earliest to higher health facilities thereby empowering them to save the life of both the mother and new born [9].

This study has identified several determinants that have significant influence on the skill birth attendant conducted deliveries at home such as women's education, age of mother, birth order, caste, and religion, economic status of household and place of residence. Main dominant predicator of SBA attendant home delivery in India is four or more ANC visits, education of mother and wealth index.

Finding shows that very less percentage of women is receiving health facility in India. Many studies also showed that Traditional Birth Attendant (TBA) are seen as feasible and accessible at any time in the village compared to Community health facility [15, 16, 22]. In India, low utilization of SBA services occur due to poor quality services, unavailability and inaccessibility of services, minimum staff support, shortage of medicine and equipment as well as deficient referral systems [23].

Furthermore education is positively associated in utilization of safe delivery and those mothers who are more educated are more likely to receive safe delivery compared to those mothers who are illiterate. Educated women are more aware and know the need for SBA during delivery. In addition, educated women also have superior decision making power on seeking health services and have the capability to move outside home [17, 18, and 20].

The safe delivery was found to be significantly lower among Muslim women than Hindu Lower utilization of safe delivery services among Muslim women could be linked to their lower socio-economic status. Women from Scheduled Castes, /Scheduled Tribes and Other Backward Caste were less likely to utilize safe delivery facility compared to Upper caste women. Lower castes like SC/ST are considered as a socially disadvantaged group and are outcasted by the society this. The disparity in the use of safe delivery facility across economic group is a more concern issue among policy makers.

Wealth quintile status of household was found to be significant factor affecting the utilization of safe delivery in India [11]. Women from the wealthier groups were more likely to utilize safe delivery services at home than poor women in addition people spend more on health care than the poor counterpart.

Finding shows that ANC visits is one of the main predictor of receiving safe delivery [24] at home. Women, who visit for any antenatal services, can interact with the health professional at the health facility and know possible risks of pregnancy as well as be aware of the importance of SBA during delivery [19, 20].

Result from this study clearly shows the importance of place of residence in determining safe delivery. Further it shows that children belonging to other region are less likely to receive safe delivery compared to southern region's women. Most of the southern states are more economically and demographically developed than northern and eastern states of India.

Northeast, East and Central region is poor performing regions. Uttar Pradesh in central region, Rajasthan in Northern region and Arunachal Pradesh in north-eastern region is poor performing state. Government should focus on socio-economically poor family of these states for better utilization of institutional facility during delivery as well as to ensure for a woman to receive at least four ANC visit during pregnancy.

V. Conclusion

Main predictor of safe home delivery is mother's education, religion, wealth quintile, birth order and ANC visits. It is very unfortunate if delivery takes place at home, 100 % should be conducted by SBA as it is one of the goal set by the United Nation for MDG. Government should also encourage for institutional delivery and where it is not possible at least the home delivery should be carried out by SBA. In addition, government should focus on poor, uneducated and younger rural women as well as ensure at least four ANC visit for every pregnant woman.

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