

Pattern of Deliveries in Rural Areas of a District in Haryana, India.

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Citation

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Abstract

Introduction: Home deliveries contribute considerably to unacceptably high maternal and perinatal mortality especially in Rural India. Several socio-cultural and economic factors interplay in the decision for place of delivery. **Objective:** To know the pattern of deliveries and related factors for appropriate advocacy and interventions. **Material and Methods:** Community based cross-sectional study was conducted in 2007-08 in a Rural Block of District Jhajjar, Haryana. Assuming 50% institutional deliveries, at 95% confidence level with 10% allowable error; the calculated sample size was 400 deliveries. Sampling frames of all eligible women, who delivered within last 12 months, were prepared separately for all five sectors in the study block. 80 mothers were selected randomly from each sector. Absentees after three visits were replaced by next mothers in the frame. Required data were collected on pretested semi-structured schedules from study mothers by house-to-house visits and analyzed using SPSS (version 10.0). **Results:** 227(56.7%) mothers had institutional deliveries. Among home deliveries 173(43.3%), attending personnel were: 30(17%) untrained dais, 103(59%) trained dais; 19% health personnel and 5% others. Illiteracy, poverty, no accompanying person, lower castes, inadequate antenatal check-ups, previous home delivery etc. were significantly associated with home deliveries. 50% mothers considered that institutional deliveries were not necessary. **Discussion:** Addressing socio-economic constraints, creating awareness regarding importance of institutional deliveries, identifying and motivating mothers, who are likely to have home deliveries, for institutional deliveries through quality antenatal services appeared vital for ensuring deliveries in institutions.

INTRODUCTION

In the developing world, even today, perhaps delivery is the commonest event where life and death stand side by side for both, the expectant mother and her forthcoming newborn. Any neglect or delay in care can adversely affect the wanted outcome. India alone accounts for nearly 20% of the global burden of both maternal and child deaths against about 16% of its share in world population. The maternal mortality ratio in India was estimated to be around 400-450 maternal deaths per 100,000 live births, while the figure was as high as 619 per 100,000 live births in rural areas.¹ The link between maternal and infant mortality and the place of delivery is well established as the place of delivery primarily determines the quality of care received by mother and her new born child.² Despite the uniformity in program design throughout the country, there is considerable regional variation in the proportion of institutional deliveries ranging from 11% to 95% in different states of India with an average of 41%.³ The explanations and answers to these variations are complex. Studies have identified various factors

associated with the pattern of deliveries and utilization of institutional health services i.e. availability, distance, cost and quality of services in addition to personal health beliefs and other socio-cultural and economic factors which vary from place to place.^{4,5} National Rural Health Mission (NRHM) has envisaged to ensure all deliveries in institutions - a major challenge as multiple factors interplay in making the choice of place of delivery. Therefore, keeping in view the strong emphasis of national health programs, policies and missions on promotion of institutional deliveries to reduce maternal mortality and enhance newborn survival; the present study was pursued.

OBJECTIVES

1. To study the pattern of deliveries in rural areas of Haryana
2. To observe the association of delivery pattern with socio-cultural and economic factors.

MATERIAL AND METHODS

A community based cross-sectional study was carried out during 2007-08 in a Rural Community Health Center (CHC) having 146915 populations, covering 33 villages within about 750 Square Kilometer area. The whole block was divided into five sectors. Assuming 50% prevalence of institutional deliveries, at 95% confidence level with 10% allowable error, the calculated sample size was 400 deliveries. The study subjects selected were the mothers who delivered within a year preceding the date of data collection. A general survey of the population under study was conducted to enlist all the eligible mothers. Sampling frames were prepared for all the eligible mothers for each sector. Eighty mothers were selected randomly from each sector frame, making a total of 400 study mothers. All the selected mothers were interviewed as per predesigned, pre-tested and semi-structured schedule by house-to-house visits after getting informed consent. Absentees after three visits or who refused to participate in study were replaced by the next mothers in the frame. Ethical clearance/approval to the study was given by Institutional PG Board of Studies. The data so collected were compiled, tabulated, analyzed and interpreted using SPSS (version 10.0). Percentages and proportions were calculated and Chi square test was applied as test of significance.

RESULTS

Out of total 400 deliveries, the proportions of normal, assisted vaginal and caesarean section were 367(91.7%), 13(3.3%) and 20(5.0%) respectively. 227 (56.7%) were institutional and 173(43.3%) home deliveries as shown in Figure I. No delivery took place at health sub-centers in spite of program emphasis and establishment of Delivery Huts. Home deliveries were mainly attended by trained dais, followed by untrained dais as revealed in Figure II.

Association of institutional deliveries was directly proportional to high income and no financial constraints at the time of delivery and vice versa. The easy availability of vehicle for transport was not found to be significantly associated with home or hospital deliveries (Table-1). Age of mother showed just significant association with place of delivery and extreme aged mothers had more home deliveries possibly due to the fact that most of the extreme age deliveries take place in lower socio-economic strata of society having more home deliveries. Similarly, total number of live children also showed significant association with place of delivery as mothers with three or more children had more home deliveries. Mothers, who had no person to

accompany them at the time of labor pains to accompany them for institutional deliveries, also had significantly more home deliveries (Table-2).

Caste was significantly association with place of delivery. The proportion of institutional deliveries in other castes (69.6%) was about twice as in Scheduled Castes (36%) and Backward Classes (31%). Literacy level and number of antenatal checkups also showed significant association with place of deliveries. 10+2 or higher literate mothers had 73.6% institutional deliveries. Mothers, who had no or inadequate antenatal checkups, had more home deliveries as compared to mothers who had three or more ANC checkups (Table-3).

Mother's preference for place of delivery or advice by health personnel was also significantly associated with place of delivery. Place of previous delivery also showed highly significant association with place of present delivery as out of 104 mothers, who had previous home delivery, 84(80.8%) of them had home deliveries again (Table-4).

DISCUSSION AND RECOMMENDATIONS

Institutional deliveries (56.7%) in the present study area were more than the national and the state averages of 41% and 39% respectively, but far less than the program target of 100%. Umamani KS et al⁶ in rural district of Bangalore observed 49% institutional deliveries either in government or private hospitals. The observed marginal difference could be due to enhanced emphasis of programs on institutional deliveries in addition to other socio-economic variables. Dabral Sweta et al⁷ in Gujjars of Delhi (rural) observed that 36.6% mothers had institutional deliveries and out of those only 3.6% were in govt. institutions and 33% in private sector. The low percentage of institutional deliveries in Delhi (rural) could be due to under developed public sector obstetrical services in peripheral areas. Lal S et al⁸ reported 14.2 institutional deliveries in a rural block of Rohtak District. District Level Household Survey (DLHS)-RCH⁹ reported only 30% institutional deliveries in rural areas in India and the difference could be due to increasing emphasis on institutional deliveries. Among the home deliveries, 17% deliveries conducted by untrained Dais and 5% by other relatives etc. in the present study also were well within the wide range of deliveries conducted by untrained persons as reported in the various other studies e.g. Das Gupta et al¹⁰ reported 20.6% home deliveries by untrained Dais and 3.4% by other relatives etc., Pant B et al¹¹ reported 74.6% of home deliveries by untrained Dais/persons and Sengupta B et al¹²

reported 95.1% home deliveries and only 4.9% institutional deliveries in Reverine Block of Paraganas District of West Bengal and Among home deliveries, 16.0%, 19.3% and 58.4% deliveries were conducted by relatives, neighbors and Dais respectively and among Dais, only 18.4% were trained. These variations in deliveries conducted by untrained personnel could be because of variations in Dais training activities, status of public and private health services, in addition to effect of socio-cultural and economic factors and other variables related to safe delivery practices in the area.

Low income and financial constraints at the time of delivery, extreme ages of mothers and high parity, low literacy level, Castes (SCs and BCs), previous home delivery, preference for home delivery, poor quality of antenatal services, lack of awareness for importance of institutional deliveries etc. were found to be very important determinants of high probability of having home deliveries. Many other studies had also shown almost similar types of associations.^{3,5,9,13,14} Basically, there is a synergy of such adverse factors practically compelling for home deliveries. Therefore, one can utilize these determinants in assessing the probability of home delivery in each case and can intervene accordingly through quality antenatal services to motivate for institutional delivery. This approach can go a long way in achieving the NRHM target of 100% institutional deliveries to decrease the unacceptably high maternal mortality and to ensure new born survival.

Figure 1

Figure I: Place of deliveries in the study area

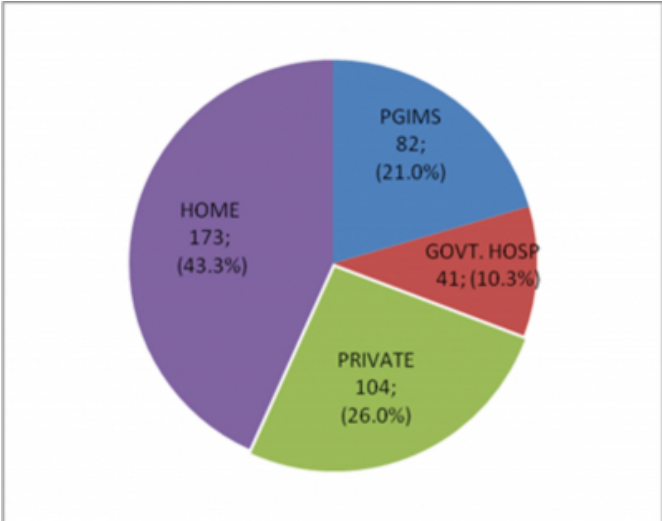
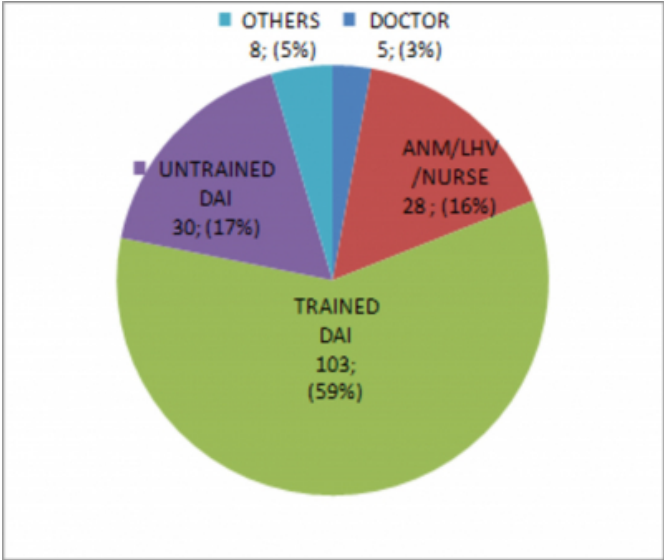


Figure 2

Figure II: Attending personnel in home deliveries



(ANM=Auxiliary Nurse Midwife; LHV=Lady Health Visitor)

Figure 3

Table 1: Association of Place of Delivery with Economic Variables

Variables	Home	PGIMS	G.H.	private	Total
Income:					
Up to 2500	79(55.3)	28(18.2)	10(7.0)	24(19.4)	141
2501-5000	60(45.5)	32(24.2)	13(9.8)	27(20.5)	132
5001-7500	18(43.9)	3(7.3)	6(14.6)	14(34.1)	41
7501-10,000	11(19.6)	11(19.6)	9(16.1)	25(44.6)	56
>10,000	5(16.7)	8(26.7)	3(10.0)	14(46.7)	30
Chi square value = 48.87; df = 12; P value = 0.00 (Highly significant)					
Financial constraints:					
Yes	110(56.4)	30(15.4)	16(8.2)	39(20.0)	195
No	63(30.7)	52(25.4)	25(12.2)	65(31.7)	205
Chi square value = 27.22; df = 4; P value = 0.00 (Highly significant)					
Easy availability of transport:					
Yes	123(40.9)	66(21.9)	32(10.6)	80(26.6)	301
No	50(50.5)	16(16.2)	9(9.1)	24(24.2)	99
Total	173(43)	82(20.5)	41(10.3)	104(26)	400
Chi square value = 3.16; df = 4; P value = 0.37 (Not significant)					
(GH=General Hospital; PGIMS=Post Graduate Institute of Medical Sciences)					

Figure 4

Table 2: Association of Place of Delivery with Demographic Variables

Variables	Home	PGIMS	G.H.	private	Total
Age of mothers:					
<20	19(54.3)	11(31.4)	0	5(14.3)	35
20-24	103(41.9)	50(20.3)	26(10.6)	67(27.2)	246
25-29	38(41.3)	19(20.7)	12(13.0)	23(25.0)	92
30-34	8(40.8)	1(5.0)	3(15.0)	8(40.0)	20
35/>35	5(71.4)	1(5.0)	0	1(14.3)	7
Chi square value = 16.40; df=12; P value = 0.05 (Just significant)					
No. of Live children:					
0	2(40.0)	2(40.0)	0	1(20.0)	5
One	61(36.3)	52(30.9)	11(6.5)	44(26.2)	168
Two	56(37.6)	24(16.1)	22(14.7)	47(31.5)	149
Three	25(71.4)	3(8.6)	3(8.6)	4(11.5)	35
Four/more	29(67.4)	1(2.3)	5(11.6)	8(18.7)	43
Chi square value = 143.64; df=12; P value = 0.00 (Highly significant)					
Availability of any accompanying person at the time of labor pain:					
Yes	146(40.1)	79(21.7)	38(10.4)	101(27.7)	364
No	27(75.0)	3(8.3)	3(8.3)	3(8.3)	36
Total	173(43)	82(20.5)	41(10.3)	104(26)	400
Chi square value = 17.79; df = 4; P value = 0.00 (Highly significant)					

Figure 5

Table 3: Association of Place of Delivery with Social Variables

Variables	Home	PGIMS	G.H.	private	Total
Caste:					
SCs	73(64.0)	22(19.3)	4(3.5)	15(13.2)	114
BCs	23(69.7)	6(18.2)	1(3.0)	3(9.1)	33
Others	77(30.4)	54(21.3)	36(14.2)	86(34.0)	253
Chi square value = 54.30; df = 6; P value = 0.00 (Highly significant)					
Literacy:					
Illiterate	28(49.1)	10(17.5)	8(14.0)	11(19.3)	57
Primary	25(55.6)	7(15.6)	1(2.2)	12(26.7)	45
Middle	55(52.4)	16(15.2)	12(11.4)	22(21.0)	105
Matric	42(39.3)	14(24.3)	26(13.1)	25(23.4)	107
10+2 or >	23(27.4)	23(27.4)	6(7.8)	34(37.4)	86
Chi square value = 30.16; df=12; P value = 0.01 (Significant)					
Number of antenatal checkups:					
Nil	5(100)	0	0	0	5
One	17(63.0)	5(18.5)	2(7.4)	3(11.3)	27
Two	100(52.4)	24(12.6)	24(12.6)	43(22.5)	191
Three/more	51(28.8)	53(29.9)	15(8.5)	58(32.8)	177
Total	173(43)	82(20.5)	41(10.3)	104(26)	400
Chi square value = 59.35; df = 9; P value = 0.00 (Highly significant)					

(SC=Scheduled Caste; BC=Backward Classes)

Figure 6

Table 4: Association of Place of Delivery with Socio-cultural Variables

Variables	Home	PGIMS	G.H.	private	Total
Preference for place of delivery:					
Home	130(67.7)	19(9.9)	13(6.8)	30(15.6)	192
Hospital	43(20.7)	63(30.3)	28(13.5)	74(35.6)	208
Chi square value = 94.90; df = 4; P value = 0.00 (Highly significant)					
Advice for institution delivery during pregnancy:					
None	131(54.4)	27(11.2)	24(10)	59(24.5)	241
Doctor	14(20.3)	30(43.5)	7(10.1)	18(26.1)	69
Family Mem.	17(27.9)	16(26.2)	7(11.5)	21(34.4)	61
ANMLHV/ AWW/Nurse	11(37.9)	9(31)	3(10.3)	6(20.7)	29
Total	173(43)	82(20.5)	41(10.3)	104(26)	400
Chi square value = 44.90; df = 12; P value = 0.00 (Highly significant)					
Place of previous delivery (n=241; 159 primi. excluded):					
Home	84(80.8)	6(5.8)	4(3.8)	10(9.6)	104
PGIMS	6(27.3)	13(54.5)	2(9.1)	2(9.1)	23
G. H.	5(13.9)	4(11.1)	23(63.9)	4(11.1)	36
Private	21(26.9)	6(8.0)	3(4.0)	48(54.0)	75
Total	113(47)	29(12.3)	32(13.2)	64(26.6)	241
Chi square value = 198.91; df = 9; P value = 0.00 (Highly significant)					

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