

Factors Determining Place of Delivery in Rural Area of Punjab: A Cross-Sectional Study

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How to cite this article: Sanyogita, Tejbir Singh, S S Deepti. Factors Determining Place of Delivery in Rural Area of Punjab: A Cross-Sectional Study. Indian Journal of Public Health Research and Development/Volume 15 No. 1, January-March 2024.

Abstract

Context/Background: Institutional delivery has been found to be one of the key predictors of neonatal mortality prevention and is a recognized intervention to reduce maternal mortality. Despite this known fact, mothers still prefer to deliver at home.

Methodology: 359 mothers of 2 months to 24 months old children were selected from Verka block of district Amritsar using stratified random sampling technique. Data was collected using a semi structured and pretested questionnaire. Analysis was done using frequency distribution, simple percentages and inferential statistics of chi-square was used to test hypothesis at 5% level of significance.

Results: The overall prevalence of institutional delivery was 64.9%. Study revealed that parity, proximity to public health facility, high education, socioeconomic status and utilization of full antenatal package had significantly increased the institutional delivery.

Conclusions: Therefore there is a need to enhance education, expand public health institutions and create awareness about antenatal care and institutional delivery by utilizing existing platform of village level workers to increase the rate of institutional delivery.

Key words: maternal, institutional delivery, determining factors, rural Punjab

Introduction

Worldwide burden of maternal deaths is 295,000, out of which 35,000 maternal deaths occur in India responsible for 12% of global deaths.¹ The current maternal mortality ratio in India is 97/100,000 live births which is more than the target of Sustainable Development Goal.²

Multiple factors are responsible for such a huge number of maternal deaths. Home delivery has been recognized as one of the important factor specially in developing countries as majority of deaths occur during and within one week after delivery. In fact, it has been documented that skilled care before, during and after the birth of child can save the lives of women and newborns by preventing complications

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which are quite unpredictable and may become life-threatening.³

World Bank estimated that providing skilled care during delivery and particularly access to emergency obstetric care would reduce maternal deaths by about 74 per cent.⁴ It has been documented that Sri Lanka, Malaysia, Thailand and Egypt were able to bring down their maternal mortality by providing skilled attendance at birth and improving access to emergency obstetric care.⁵

The World Health Organization (WHO) defines a skilled attendant 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 (uncomplicated) pregnancies, childbirth and the immediate postnatal period and in the identification, management and referral of complications in women and newborns”.⁶ In this study institutional delivery was used as a measure of skilled attendance at birth because of inability to decide whether a home delivery is a skilled delivery.

There are various factors that influence the utilization of health care facilities for institutional delivery. Not only the personal and socioeconomic conditions but geographical access particularly in rural areas with limited health facilities also has great impact on utilization.⁷⁻⁹

Yoseph et al in a study in Southwest Ethiopia found high wealth index, education level of husband, woman age below 40 years, and number of ANC visits showing positive association with institutional delivery.¹⁰ Whereas education level of women, early registration of antenatal case, previous delivery in institution, complications in previous pregnancy, urban residence and health facility related factor such as quality of care were the few factors showing positive association with institutional delivery in different studies conducted in Eritrea and Zambia.¹¹⁻¹³

Despite the efforts made by government, the Institutional delivery rate still remains low at national as well as at regional level. So far only a few studies have been conducted in Punjab regarding institutional delivery and none in our study area. Therefore, this study was conducted to assess the prevalence of institutional delivery and identify

associated factors among rural women who gave birth in the past 24 months in Verka block of District Amritsar, Punjab.

Methodology

A cross sectional study was carried out in Verka block of district Amritsar from January 2011 to December 2011. Three villages i.e. Mudhal (with subsidiary health centre), Sanghana (with sub centre) and Dhaukalan (with no public health centre) were selected by stratified random sampling. All the houses of chosen area were visited, numbered and inquired about 2 months to 2 years old children. Total children of required age group were 359, out of which 171 belonged to Mudhal, 78 belonged to Sanghana and 110 were from Dhaukalan. Mothers of 2 months to 24 months old children were personally interviewed by the author. Purpose of study was explained, confidentiality was assured and informed consent was taken. Information obtained was recorded by the author on a semi structured, pretested questionnaire in their local language. Modified Kuppaswamy socioeconomic status scale 2010 was used to assess the socioeconomic status of the family. Approval of college ethical committee was sought and granted at the time of submission of the plan of the study. All the information so collected was compiled, analysed statistically with the help of Epi info version 3.5.3. Chi-square test was used to evaluate different variables and valid conclusions were drawn.

Results and Discussion

Out of total sample of 359 mothers 171 (47.6%) mothers were from Mudhal, 78 (21.7%) from Sanghana and 110 (30.7%) from Dhaukalan. Table 1 also shows almost three fourth 264 (73.5%) belonged to joint family. Majority 352 (98.1%) were Sikhs. According to Census 2011 in Punjab 57.7% were Sikhs, 38.5% were Hindus whereas in rural Amritsar 91.2% were Sikhs and 5.01% were Hindus.¹⁴ In our study proportion of Sikhs was more as study was conducted in rural area where majority of Sikhs reside. Nearly two third 230 (64.1%) belonged to schedule caste and 99 (27.6%) were of general category. According to Census 2011, in Punjab 31.9% and in Verka block 46.7% population belonged to scheduled caste.¹⁵ In our study area proportion of schedule caste is higher as study was conducted in Verka block where proportion of

population belonging to schedule caste is more as compared to Punjab (46.7% versus 31.9%). Almost two third respondents 216 (60.2%) belonged to upper lower socioeconomic status. Around one third 114 (31%) mothers were illiterate. According to census 2011, female literacy rate in India is 65.46% and in Punjab is 71.34%, as was found in our study.¹⁶ Table reveals that 163 (45.4%) mothers were with parity 1, 131 (36.5%) with parity 2 and 65 (18.1%) with parity ≥ 3 .

Table 1: Table showing sociodemographic profile of respondents

Characteristics	N=359		
		Frequency	%
Place of Residence	Mudhal	171	47.6
	Sanghana	78	21.7
	Dhaulkalan	110	30.7
Religion	Sikh	352	98.1
	Hindu	7	1.9
Caste	General	99	27.6
	OBC	30	8.3
	SC	230	64.1
Type of family	Joint	264	73.5
	Nuclear	95	26.5
Socioeconomic status of family	Upper middle	87	24.2
	Lower middle	48	13.4
	Upper lower	216	60.2
	Lower	8	2.2
Education of Respondent	Matric and above	126	35.1
	Below Matric	119	33.1
	Illiterate	114	31.8
Parity	Parity 1	163	45.4
	Parity 2	131	36.5
	Parity ≥ 3	65	18.1

Table 2 shows that out of 359 deliveries, 126(35.1%) took place at home and 233 (64.9%) in institution. In Punjab according to Coverage evaluation survey (2009) 40% delivered at home.¹⁷ Thind et al (2008) in Maharashtra observed 37% home and 63% institutional deliveries similar to our study.¹⁸ Punia et al (2010) observed, 43.3% home and 56.7% institutional deliveries in rural Haryana.¹⁹

Whereas Garg et al (2010) reported 66.1% home and 33.9% institutional deliveries in Verka block of Amritsar Punjab.²⁰ The probability of delivering in institution was higher among those who belonged to General category as 86.9% mothers belonging to General category had institutional delivery as compared to 70% and 54.8% belonging to other backward class and scheduled caste respectively. Punia et al (2010) reported that 69.6% mothers belonging to general category, 31% and 36% belonging to other backward class and scheduled caste respectively had institutional delivery.¹⁹ Over the past decade research consistently shows that high cost is an important constraint to service utilization particularly for the poor. Recent analysis of the third National Family Health Survey (2005/6) shows 13% of women in the lowest wealth quintile accessing institutional delivery care compared with 84% in the highest.²¹ Similar findings were observed in our study where only 12.5% belonging to lower socioeconomic status opted for institutional delivery as compared to 89.7% belonging to upper middle class. ($p < 0.001$, significant). Study showed that 66.7% mothers from joint and 60% from nuclear family had institutional delivery and difference was found to be insignificant ($p > 0.05$). Among the maternal attributes, increasing the educational level of women can increase the use of maternal health care services. This is because education promotes new values and attitudes that are favourable to modern health care services.²² In our study mothers with higher education preferred institutional delivery as 45 (39.5%) illiterate mothers opted for institutional delivery in comparison to 113 (89.7%) with matric or above ($p < 0.001$, significant). Similar results were reported by Garg et al (2010) where 20.0% illiterate women opted for institutional delivery as compared to 58.0% women with higher secondary education and 80.9% women with graduation or above.²⁰ In our study, mothers with higher parity preferred home delivery, as 50.7% mothers with parity three or more delivered at home as compared to 27.6% with parity one. Thind et al observed that 30% women with parity less than two had home delivery as compared to 48.2% with parity two or more.¹⁸

Our study showed that 81.4% mothers who availed full antenatal package opted for institutional delivery as compared to 47.7% who did not avail

full antenatal package. Association was statistically significant. Similar results were shown by Thind et al who observed that 39.5% mothers with less <3 antenatal visits had institutional delivery as compared to 85.9% mother with >3 antenatal visits.¹⁸ Some studies (including in India) have found that geographical access has a greater effect on utilisation than socioeconomic factors, particularly in rural areas with limited service provision.²³ In our study mothers

belonging to village with subsidiary health centre showed preference for institutional delivery as 68.4% from Mudhal and 60% from Sanghana delivered in institution as compared to 57.3% from Dhaukalan (with no health facility). The difference could be due to more motivation by ASHA workers may be due to presence of Subsidiary Health Centre or could be due to proximity to PHC Verka and Amritsar city.

Table 2: Table showing association of sociodemographic factors, parity and full antenatal package with place of delivery

Factors		Home Delivery n=126 (35.1%)	Institution Delivery N=233 (64.9%)	Total N=359	Chi Square	P value
Place of Residence	Mudhal	54(31.6%)	117(68.4%)	171	42.02	<0.05
	Sanghana	25(32.0%)	53(68.0%)	78		
	Dhaukalan	47(42.7%)	63(57.3%)	110		
Caste	General	13 (13.1%)	86 (86.9%)	99	31.65	<0.001
	OBC	09 (30%)	21(70%)	30		
	SC	104(45.2%)	126(54.8%)	230		
Socio-economic status	Upper middle	9(10.3%)	78(89.7%)	87	54.14	<0.001
	Lower middle	9(18.7%)	39(81.3%)	48		
	Upper lower	104(48.1%)	112(51.9%)	216		
	Lower lower	7(87.5%)	1(12.5%)	8		
Type of Family	Joint	88(33.3%)	176(66.7%)	264	1.36	0.24
	Nuclear	38(40.0%)	57(60.0%)	95		
Education Status	Illiterate	69(60.5%)	45(39.5%)	114	77.73	<0.001
	Primary	32(50.8%)	31(49.2%)	63		
	Middle	12(21.4%)	44 (78.6%)	56		
	Matric and above	13(10.3%)	113(89.7%)	126		
Parity	Parity 1	45(27.6%)	118(72.4%)	163	14.89	<0.05
	Parity 2	48(36.6%)	83(63.4%)	131		
	Parity \geq 3	33(50.7%)	32(49.3%)	65		
Availed full Antenatal Package	Yes	34(18.6%)	149(81.4%)	183	44.71	<0.05
	No	92(52.3%)	84(47.7%)	176		

When enquired about reasons for home delivery as depicted in Table 3, 47 (37.3%) were advised by elderly, 45 (35.7%) said not necessary, 30 (23.8%) had fear of hospital (fear of caesarean section or likelihood of getting referred from one place to other) whereas 22 (17.5%) faced financial constrains, 15 (11.9%) said none to accompany and 46 (36.5%) gave other reasons like no one to take care of children, lack of transport, no time to go, delivered at parent's house

etc. According to Coverage evaluation survey (2009) reasons for not delivering at institution were, no time to go (40.6%), not necessary (24.6%), better care at home(20.1%), too much cost(17.9%), too far/no transport (10.4%), family did not allow (10.3%), any other (5.3%), lack of knowledge (3.8%), poor quality service (3%) and not customary (2.3%).¹⁷ Ansari and Khan (2011) observed various reasons for not delivering at institution as not necessary (38.6%),

not customary (3.0%), too far (10.9%), no time to go (16.8%), no money (15.8%), not aware (12.9%) and others (2.5%) in rural area of Aligarh.²⁴

Table 3: Distribution of mothers according to reasons for home delivery

Reasons of home delivery	Number	Percentage
As told by elderly	47	37.3%
Not necessary	45	35.7%
Fear of hospital	30	23.8%
Financial constraints	22	17.5%
None to accompany	15	11.9%
Any other	46	36.5%

*Multiple Answers

Conclusion

More attention should be given towards education of women so that they are in a better position to take decision regarding institutional delivery. Efforts should be made to improve financial condition of families, ensure 100 percent antenatal registration and improve antenatal care in public health facilities. Expansion and strengthening of public health infrastructure will also increase the rate of institutional delivery and will contribute towards achieving the SDG of reducing maternal mortality ratio.

Declaration

Funding: No funding source

Conflict of interest: None declared

Ethical Approval: The study was approved by college ethical committee

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