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Time trend, prevalence and factors affecting place of delivery in rural area: a comparative study among two sub centers in field practice area of tertiary care center, Aurangabad, Maharashtra

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ABSTRACT

Background: 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. India being second most populous country in the world, women and pre-school children constitute about one third of total population; any neglect or delay in care can adversely affect the wanted outcome. The aim of the study was to assess factors affecting institutional and home delivery in rural areas under field practice area of tertiary care center in Aurangabad city. The objectives of the study were as follows: to estimate the prevalence of home and hospital delivery in rural area and to study and analyze the factors affecting place of delivery i.e. home or hospital

Methods: Present study was undertaken in the two sub centers under one of the primary health cares in field practice area under tertiary care hospital in Aurangabad city. A total of 659 respondent women were interviewed to collect information regarding first and last delivery.

Results: Total 58.27% women were delivered in private hospitals and only 18.66% delivered in Government institutions while prevalence of Home delivery was 23.06%.

Conclusions: Early antenatal care (ANC) registration from the first pregnancy of the women with recommended visits should be encouraged since ANC registration has greater influence in selection of place of delivery.

Keywords: Prevalence, Time trend, Home delivery, Institutional delivery

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. India being second most populous country in the world, women and pre-school children constitute about one third of total population; any neglect or delay in care can adversely affect the wanted outcome.¹

The important causes of maternal deaths are excessive bleeding (unplanned home deliveries) and obstructed labour, infection, unsafe abortions, disorders related to high blood pressure and anaemia. 47% of maternal mortality in rural India is due to excessive bleeding and anemia resulting from poor nutritional practices.²

In 1992–93, the Child Survival and Safe Motherhood Programme (CSSM), now become the part of reproductive and child health programme is initiated to achieve improvement in the health status of women and children; which includes early registration of pregnancy, minimum three antenatal visits, universal coverage with tetanus toxoid and iron and folic acid tablets, referral services of at

risk mothers, deliveries by trained health personnel, birth spacing and facilities to manage emergency obstetrical emergencies.³

In 1997, safe motherhood and child health services were incorporated into the Reproductive and Child Health Programme as RCH phase-I and in April, 2005 as RCH phase-II. The major objectives of the programme is to bring about change in mainly three indicators i.e. reducing total fertility rate, infant mortality rate and maternal mortality rate. Besides other elements, the important elements include encouragement of institutional deliveries or home deliveries assisted by trained health personnel.⁴

The National Population Policy adopted by the Government of India in 2000. Several goals pertain to safe motherhood to be achieved by the year 2010, namely to achieve 80 percent institutional deliveries and 100 percent of deliveries should be attended by trained personnel and the maternal mortality ratio should be reduced to a level below 100 per 100,000 live births. The goal to be achieved under NRHM at national level is to reduce maternal mortality ratio to 100 per 100,000 live births.⁵

Government of India has launched an ambitious reform initiative called National Rural Health Mission in 5th April, 2005 for a period of seven years (2005-2012). Under NRHM, one of the main strategies or policy shifts is Janani Suraksha Yojana (JSY), launched on 12th April 2005, a conditional cash transfer scheme to motivate pregnant women for institutional deliveries with the objective of reducing maternal and neo-natal mortality.²

The main backbone and one of the key components of NRHM is to provide trained female community health activist i.e., ASHA in every village to work as an interface between community and public health system. ASHA would act as a bridge between the ANM and the village. ASHA has been assigned the duty to identify beneficiaries and facilitate receipt of adequate antenatal, natal and postnatal care. ⁶

Despite the uniformity in program design throughout the country; there are considerable regional variations in the proportion of institutional deliveries. As per NFHS-III percentage of institutional births in rural area of Maharashtra was 50.5 percent as compared to national figures i.e. 31.1 percent. Births assisted by doctor/ nurse/ other trained health personnel was 56.5 percent in Maharashtra as compared to national figures of 39.9 percent.⁷

Studies have identified various factors associated with the pattern of deliveries and utilization of institutional health services i.e. availability of transport, distance, cost and quality of services in addition to personal health beliefs and other socio-cultural and demographic factors which vary from place to place.

Present study was carried out in the field practice area of rural health and training center to estimate prevalence and various sociodemographic factors affecting the place of delivery.

METHODS

Study design

A community based descriptive cross-sectional study.

Study settings

A comparative study was done between 14 villages in two sub centers under one of the primary health cares (PHCs) in Aurangabad district (Figure 1).

Study period

The study was conducted between July 2011 to June 2012 in selected two sub centers under one of the PHC.

Study population

Study subjects comprised of women having children less than five years of age. The study of factors affecting the preference for institutional and home delivery were assessed with the help of predesigned pretested questionnaire. Questions were asked about the personal particulars, age, religion, education, occupation, family income, socio-economic status, birth order, family type, place of delivery, other factors affecting place of delivery and reasons behind the choice of the place of delivery were noted.

Sample size and sampling technique

Out of three PHCs (Pimpalwadi, Nandar, Balanagar) under Paithan RHTC, Pimpalwadi was chosen randomly. This PHC consisting of total six sub centers of which, two sub centers were randomly selected. House to house survey was conducted in all the 8 villages and 6 villages under Changatpuri and Sonwadi sub center respectively. Total of 659 participants with 1024 births were interviewed to collect information; thus multistage random sampling was used for data collection.

Sample size

As per the District Level Household Survey-III (2007-2008) proportion of home delivery in rural area of Maharashtra was 45.2 and that of institutional delivery was 54.1. For the calculation of sample size rural proportion of home delivery was considered as it was less as compared to prevalence of institutional deliveries. Sample size was calculated by referring to the book of WHO publication of 1991 titled "sample size determination in health studies" written by Lwanga et al.⁸

Anticipated population proportion (P) - 45.2 %

Confidence level [$100(1-\alpha)$ %] - 95 %

Relative precision (ε) - 10 %

Calculation as per the following formula:

$$n = Z^2 p(1 - p) \div \epsilon^2$$

[Z is (confidence coefficient) = 1.96, q= 1-p]

The calculated sample size was 469; thus in total 659 women were interviewed to cover up all the respondents as per the calculated sample size.

Inclusion criteria

Mothers who had less than five years old child. Respondent women should be resident of particular village.

Exclusion criteria

All the mothers having children above five years of age.

Data analysis

Data was entered in Microsoft excel and the indicators were expressed in frequencies and proportions. Chi square test was used for univariate analysis to assess factors affecting place of delivery. Multiple logistic regression (MLR) was applied to see independent association of various factors affecting the place of delivery.

Ethical considerations

Institutional ethical committee approval was obtained. Cooperation and informed consent was taken from authorities and respondents of the concerned area.

RESULTS

Data included a total of 659 women having two or more children constituting a total of 1024 births in last five years. (Respondent women who had less than five year old child were included in the study).

Socio-demographic factors studied for their association with the place of delivery were age, religion, education, occupation, type of family, socioeconomic status, parity, antenatal care (ANC) registration, transport facility, time trend of place of delivery in two sub centers with reference to working ASHA and change of place from first to last delivery.

Out of total 659 respondent women, majority i.e. 507 (76.9%) were delivered in hospital of which, 384 (58.2%) delivered in private and 123 (18.6%) were delivered at

government institution while 152 (23.06%) women were delivered at home. (Note: As per the last delivery total of 659 births by 659 respondent women)

Table 1: Distribution of study subjects as per change of place from first to last delivery.

First delivery	Last deliver	Total	
	Hospital Home		
	N (%)	N (%)	N (%)
Hospital	179 (88.1)	24 (11.8)	203 (66.3)
Home	22 (21.3)	81 (78.6)	103 (33.6)
Total	201 (65.6)	105 (34.3)	306*(100)

(Figures in the parenthesis indicates percentages). Mc Nemar $\chi 2$ value=0.08, d (f) 1; p=0.7681 (Note-* Women who had delivered 2 or more children during last five years were considered for analysis of first to last delivery)*As per the last deliveries, total numbers of births were 659:- prevalence of hospital delivery 76.9% and home delivery 23.06%. **Total of 1024 births by 659 respondent women in last five years.

Table 1 shows distribution of study subjects as per the change of place from first to last delivery. Out of total 306 respondent women with more than one child, percentage of women who had their first delivery in hospital and now again chosen to deliver in hospital for the last child was 179 (88.1). Total 81 (78.6%) women, who had their previous child delivered at home, had again opted for home delivery for their last child. A small shift 22 (21.3%) was seen from home to hospital, reasons were transport facility available, good facilities at hospital, health facility was nearer.

Total 24 (11.8%) women were shifted from hospital to home for the delivery, reasons for doing so were, delivery in private hospital was not affordable, time constraint (labour precipitation, labour pain had started in night), and lack of transport facility.

There was no significant shift of place of delivery from home to hospital and from hospital to home. Proportion of previous to last delivery shift from institution to institution was higher i.e. 88.1% and from home to home it was 78.6%. Thus place of previous delivery significantly affect the place of present delivery.

Table 2 explains year wise distribution of respondent women as per place of delivery in sub center I and II. Out of total 1024 births by 659 respondent women, who had delivered in last five years, total 733 (71.5%) were hospital deliveries and remaining 291 (28.4%) were home deliveries. Total deliveries in year 2007 were 131 (12.7%) of which, 56 (42.7%) were home deliveries and remaining 57.2% were hospital deliveries as compared to year 2011 in which total deliveries were 190 (18.5%) of which, 21.05% were home deliveries and 78.9% were hospital deliveries. Total deliveries in 2012 from January to April (four months) were 74 (7.2%) of these, 83.7% delivered in hospital and 16.2% were delivered at home. For the year

2008 and 2009 percentage of home and hospital deliveries was nearly equal.

Table 2: Time trend of home and hospital deliveries in last five years in sub center-I and II.

	Place of de	Place of delivery		
Year	Home	Hospital	Total	
	N (%)	N (%)	N (%)	
2007	56 (42.7)	75 (57.2)	131 (12.7)	
2008	66 (30.8)	148 (69.1)	214 (20.8)	
2009	63 (30.2)	145 (69.7)	208 (20.3)	
2010	54 (26.08)	153 (73.9)	207 (20.2)	
2011	40 (21.05)	150 (78.9)	190 (18.5)	
2012 *	12 (16.2)	62 (83.7)	74 (7.2)*	
Total	291 (28.4)	733 (71.5)	1024 (100)**	

(Figures in the parenthesis indicates percentages). χ2 for linear trend=24.86, d(f)1; p<0.0001. [Note: *Total 74 births were noted in the year 2012 (during January to April 2012)]. (Note: **Total of 1024 births by 659 respondent women during the year 2007 to April 2012 in SC-I and II). *As per the last deliveries, total numbers of births were 659- prevalence of hospital delivery 76.9% and home delivery 23.06%. **Total of 1024 births by 659 respondent women in last five years.

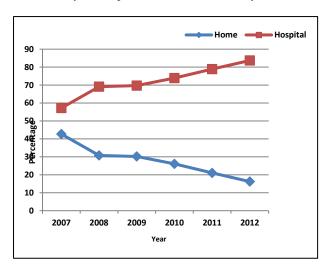


Figure 1: Time trend of home and hospital deliveries in last five years (sub centre I and II).

 $\chi 2$ test for trend reveals significant year wise difference between home and hospital deliveries. It was found that there was an increasing trend of hospital deliveries from year 2007 to 2012.

Table 3 shows year wise distribution of study subjects from ten villages before and after the appointment of ASHA in respective villages under study. Out of total 799 births in the year 2007 to 2012, 224 (28.03%) were home deliveries and 575 (71.9%) were hospital deliveries. Total 90 (11.2%) deliveries were in 2007 of these, 42.2% were home deliveries and 57.7% were hospital deliveries. Total deliveries in year 2011 were 155 (19.3%) of which

majority 78.7% were hospital deliveries and remaining 21.2% were home deliveries.

Table 3: Time trend of home and hospital deliveries in sub center with ten villages with working ASHA in last five years.

Year	Place of delivible villages having ASHA)	Total	
	Home	Hospital	
	N (%)	N (%)	N (%)
2007	38 (42.2)	52 (57.7)	90 (11.2)
2008	52 (32.09)	110 (67.9)	162 (20.2)
2009	49 (28.6)	122 (71.3)	171 (21.4)
2010	42 (25.7)	121 (74.2)	163 (20.4)
2011	33 (21.2)	122 (78.7)	155 (19.3)
2012	10 (17.2)	48 (82.7)	58 (7.2)
Total	224 (28.03)	575 (71.9)	799* (100)

(Figures in the parenthesis indicates percentages). $\chi 2=10.76$, d(f)1; p=0.0010 (For chi square test application years 2007 and 2008 versus 2009, 2010, 2011 and 2012 were clubbed). (*Total of 799 births given by the women residing in ten villages with ASHA selected for the study).

Thus, $\chi 2$ for trend revealed significant difference between home and hospital deliveries within ten villages before (2007 and 2008) and after (from 2009 to 2012) the appointment of ASHA. It was found that there was a significant increase in preference for hospital delivery from the year 2007 to 2012 with subsequent decrease in home deliveries in the same period.

Table 4: Time trend of home and hospital deliveries in sub center with four villages without working ASHA.

Year	villages with	Place of delivery (four villages with no ASHA)		
	Home N (%)	Hospital N (%)	N (%)	
2007	18 (43.9)	23 (56.09)	41 (18.2)	
2008	15 (28.3)	38 (71.6)	53 (23.5)	
2009	14 (38.8)	22 (61.1)	36 (16.0)	
2010	11 (25)	33 (75)	44 (19.5)	
2011	7 (20)	28 (80)	35 (15.5)	
2012	2 (12.5)	14 (87.5)	16 (7.1)	
Total	67 (29.7)	158 (70.2)	225* (100)	

(Figures in the parenthesis indicates percentages). $\chi 2=2.19$, d(f)1; p=0.138 (For chi square test application years 2007 and 2008 versus 2009, 2010, 2011 and 2012 were clubbed). (Note: *Total 225 births delivered by women residing in four villages with no working ASHA).

Table 4 shows year wise distribution of study subjects from four villages without ASHA. Out of total 225 births from the year 2007 to 2012, 67 (29.7%) were home deliveries and 70.2% were hospital deliveries.

Out of total 41 (18.2%) deliveries in year 2007, 43.9% were home deliveries and remaining 56.09% were hospital deliveries. Out of total 35 (15.5%) women delivered in year 2011, 20% were home and remaining 80% were hospital deliveries. It was strikingly observed that, there was a small decrease in proportion of hospital deliveries and small increase in home deliveries was seen in the year 2009.

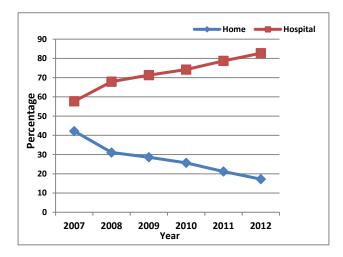


Figure 2: Time trend of home and hospital deliveries in villages with ASHA (total ten villages).

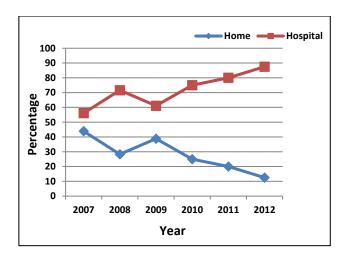


Figure 3: Time trend of home and hospital deliveries in villages without ASHA (total four villages).

It was found that, no significant year wise difference between home and hospital deliveries within four villages without working ASHA. Though we were getting increasing trend of hospital deliveries from year 2007 to 2012, there was no significant difference in home and hospital deliveries in the period before (2007-2008) and after (2009-2012) the appointment of ASHA when it was compared to the villages where ASHA had been appointed.

Table 5: Multiple logistic regression (MLR) analysis of all variables affecting place of delivery.

Waniahlaa	OR	95 % C.I. for exponential (B)		Duolus
Variables	exponential (B)	Lower	Upper	P value
Age	1.097	0.525	2.292	0.806
Religion	0.635	0.275	1.465	0.287
*Education	2.146	1.067	4.318	0.032
*Occupation	3.032	1.380	6.665	0.006
*Socioeconomic status	1.362	0.508	3.655	0.539
Type of family	1.322	0.672	2.603	0.418
*Parity	3.366	1.551	7.308	0.002
ANC registration	3.460	1.063	11.261	0.039
No transport facility	322.640	90.697	1.148E3	0.000

^{*}Education (illiterate/primary school), *occupation (agricultural/ non agricultural workers), *socioeconomic status (class III, IV, V), *parity (three and above).

Total 9 variables viz. age, religion, education, type of family, occupation, socioeconomic status, parity, ANC registration, transport facility were first subjected to univariate analysis to find significant association and then binary logistic regression analysis to study independent association of each factor with the place of delivery. Analysis was done with the help of statistical software statistical package for social sciences (SPSS) version 16.0.

Thus, Table 5 illustrates the results of binary logistic regression analysis. Out of 9 variables included in the model, 5 variables viz. education, occupation of women, parity, no ANC registration and non-availability of transport facility were found to have significant independent association with the place of delivery.

DISCUSSION

The present study was conducted between in two sub centers under one of the PHC selected under study. The PHC was adopted under Rural Health and Training Center, a field practice area of our hospital. The study was carried out to find out the factors affecting institutional and home deliveries. The associations of various socio-demographic factors with the place of delivery were studied.

Assessment was done in two parts i.e. as per the last delivery by the women irrespective of parity for assessment of factors affecting place of delivery viz. age, religion, education, occupation, socioeconomic status, type of family, parity, ANC registration, availability of

transport facility and also as per total number of births i.e., 1024, in order to assess time trend of home and hospital delivery before and after ASHA was appointed and working in particular village.

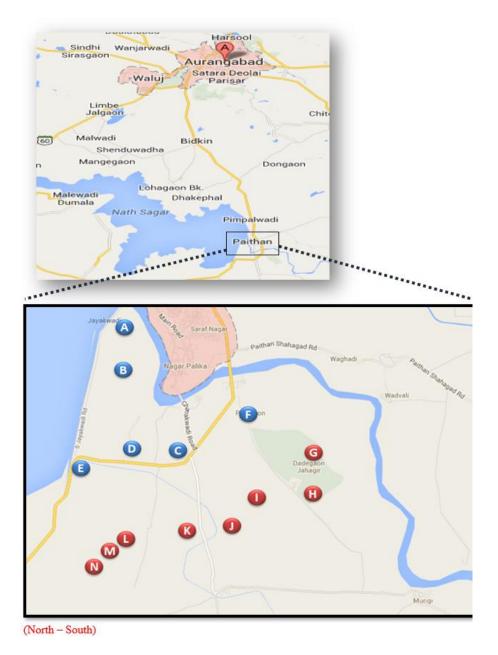


Figure 4: Spot map of Paithan.

Table 6: Village name as depicted in Paithan spot map.

Sub	Subcentre Sonwadi (Total 6 village)		Subcer	Subcentre Changatpuri (Total 8 village)		
Vill	age	Home delivery (%)	Village	e	Home delivery (%)	
A	Jayakawadi	7.8	G	Dadegaon (June)	38.5	
В	Kawsan	15.2	Н	Dadegaon (Navin)	19.04	
C	Chanakwadi	15.2	I	Saygaon	28.9	
D	Telwadi	16.6	J	Natkarwadi	34.09	
E	Sonwadi	32.8	K	Changatpuri	18.9	
F	Pategaon	57.4	L	Ghari	35.2	
			M	Mammadpur	33.3	
			N	Ismailpur	4.5	

The prevalence of Home delivery was 23.06% while 58.27% women were delivered in private hospitals and only 18.66% delivered in Government institutions. We also found prevalence of home delivery was highest at 57.4% in Pategaon under Sonwadi Sub center due to lack of awareness about importance of institutional delivery in Dombari tribe which was residing there (Figure 1). We also found prevalence of home delivery was highest at 57.4% in Pategaon village under Sonwadi Sub center. (Figure 1).

There was no significant shift of place of delivery from home to hospital and from hospital to home. Proportion of previous to last delivery shift from institution to institution was higher i.e. 88.1% and from home to home it was 78.6%. Thus place of previous delivery significantly affect the place of present delivery. Varma et al65-9 and Anita et al43-10 also indicate that the place of the previous delivery significantly influence the place of next delivery (p<0.001); thus showing similar findings with our study.

As per the National Family Health Survey (NFHS)-III (2005-2006), percentage of institutional deliveries in rural areas of Maharashtra was 50.5% as compared to national figures of 31.1%. District Level Household Survey-III (2007-2008) reported 54.1% and 45.2% of institutional and home deliveries in rural areas of Maharashtra respectively. Ansari et al a cross-sectional study in Aligarh district of Uttar Pradesh showed that percentage of home delivery was higher as compared to hospital delivery showing inconsistent findings. ¹²

On univariate analysis age, religion, illiteracy, nuclear family, agricultural workers, lower socioeconomic status, higher parity, non-registration for ANC and nonavailability of transport facility were found to be significantly associated with the place of delivery.

The mean age of mothers who were home delivered was 25.15±3.17 years and that of hospital delivered was 23.06±2.52. Rajesh et al a study in Amritsar district, Punjab observed that the majority of women with higher age group were delivered at home thus showing similar increasing trend of home deliveries in higher age group as found in our study.¹³

Buddhist religion was seen to have a significantly higher proportion of home delivery as compared to other religions (p<0.001). Sanjay et al a study in Nainital district, Uttaranchal, had found that out of total women who had delivered at home, majority of two third women were belonging to scheduled caste and scheduled tribes which was in consistent with our study.¹⁴

It was observed that illiterates were more home delivered as compared to literates. A study conducted by Kotnis et al in Solapur, Maharashtra and Rajesh et al13 in Punjab also observed that, majority of illiterates were delivered at home.¹⁵

Agricultural workers were less likely to prefer for institutional delivery and preferred to deliver at home. Datta et al had found, proprotion of housewives and working women who had delivered in hospital was higher which was in consistency with our study. ¹⁶

Joint family type is more likely to support better ANC care and institutional delivery. Also mothers in nuclear family had mostly preferred home delivery. Mumbare et al had observed that higher proportion of women belonging to joint family and three generation family were delivered at home thus showing inconsistency with our study.¹⁷

It is observed that socioeconomic status did not emerge as a significant risk factor associated with place of delivery in multivariate analysis. The reason could be that, many of the women had chosen private trust hospital for the delivery in their nearby area which was affordable to them by all means since the charges levied for the available facilities were less as compared to other private facility. Srijana a cross-sectional study in Nepal had found similar trend of increasing proportion of home deliveries in women having higher income.¹⁸

As the parity of women increases, preference to deliver at home also increases. Sushmita et al a prospective study in Mumbai slums, Maharashtra observed that, out of total women delivered at home, proportion of multipara and grand multi para was higher as compared to primi para.¹⁹

Majority of 55.9% women had delivered in home were not registered for ANC while out of total women who were registered for ANC, 19.8% were delivered at home. A study conducted by Nazli et al in Wardha district, Maharashtra observed dissimilar findings with that of our study regarding ANC status and place of delivery.²⁰

The availability of transport facility is important as it facilitates the women to deliver in hospital as compared to its counterpart i.e., home delivery which is most of the time due to the non availability of transport facility on time. Anita et al a cross-sectional study in Haryana had similarly found that availability of transport facility increases the chances of hospital delivery. ¹⁰

It was found that there was a significant increase in preference for hospital delivery from the year 2007 to 2012 with decrease in home deliveries in the same period. Pardeshi et al had found overall increasing trend of hospital deliveries with significant finding of higher proportion of hospital deliveries in NRHM period as compared to pre-NRHM period.²¹

The various reasons given by mothers who were home delivered were non-affordability (55.2%), not needed (as no complications in previous delivery) (55.2%), no transport facility (46.7%), time constraint (40.1%), negligence from hospital staff in previous delivery (1.9%). Tuladhar in Nepal studied 114 respondent women, reasons behind home delivery were, 32.5% financial problems,

37.1% Ignorance, 16.7% lack of transportation, 8.8% lack of attendant, 5.3% short labour, 3.5% long distance, 1.7% better option, 0.8% had unexpected preterm labour.²²

On logistic regression, mothers who were home delivered had a significantly lower education level (OR 2.15; CI 1.07 -4.32), were non-agricultural laborers by occupation (OR 3.03; CI 1.38 -6.67) with higher parity (OR 3.37; CI 1.55 -7.31), not ANC registered (OR 3.46; CI 1.06 -11.26), non-availability of transport facility (OR 322.6; CI 90.6 -1148.0).

Limitations

The study is conducted in rural area which is a field practice area of our college. This area may not be representative of the rural area of Maharashtra. The role of Accredited Social Health Activist (ASHA) in promoting institutional delivery and use of maternal health services is assessed by their knowledge about ANC, PNC work done by record keeping; their skills were not observed.

CONCLUSION

Out of total 9 socio-demographic factors studied, 5 have emerged as a significant independent risk factors for the home delivery in multivariate analysis viz. Education (illiterate and upto primary school), occupation (agricultural and non-agricultural workers), parity (three and above), no ANC registration, no transport facility. Present study leads us to conclusion that, it is the place of previous delivery which will decide the place of present delivery. Hence it is more important to identify women with previous home delivery in order to screen out those at high risk and to motivate them to deliver in hospital. Study reveals proportion of home delivery as 23.06%. Home deliveries were more prevalent in women belonging to lower castes and in those educated up to primary level or illiterate. Thus, educational status is decisive factor in place of delivery.

It was observed that housewives and women with owner cultivator occupational status had most preferably delivered in hospitals; working women particularly in the field are at more risk to deliver at home due to time constraint and loss of daily wages as compared to housewives. Study did not find socioeconomic status as an independent risk factor for the home delivery as it is obvious that many of the women who were belonging to lower socioeconomic status had trust on private or trust hospitals which seems to be affordable to them. Early ANC registration from the first pregnancy with recommended visits should be encouraged as it creates awareness regarding their early health concerns and ultimately motivate them to deliver in hospital. It is found that the proportion of home delivery was higher in multipara; limiting the number of children will increase the proportion of hospital delivery.

The most important independent risk factor associated with the selection of place of delivery is nonavailability of transport facility. Availability of transport facility makes accessibility to health facility easier and thus facilitates the women to deliver in hospital. Thus it is the transport facility rather than the distance of village from the health facility which is more important in deciding place of delivery. It was observed that the ASHAs are effective link in promoting maternal health services thus in turn promoting women to deliver at hospital. It was found that there was a increasing trend in preference for hospital delivery during pre-NRHM and NRHM period in villages where ASHA was appointed.

Recommendations

In rural area efforts should be taken to increase awareness regarding early ANC registration and safe delivery practices. Non-availability of the transport facility is another important factor; immediate plan is needed to deal with this situation; it is obvious that proportion of institutional deliveries will increase only when there is availability of roads and transport facilities making easy accessibility to reach the health facility in time. Health care workers should take initiative to recognize the important sociodemographic factors associated with home delivery viz. poor educational status, occupation (i.e. agricultural/ nonagricultural workers), parity of the women (three and above) and previous delivery status of the women and accordingly promote them to deliver in hospital; thus to get the desired level of success long term measures are of utmost need to catch hold these factors. Importance of institutional delivery and disadvantages of home delivery should be stressed in mother and decision makers in the family (husband, father in law or mother in law) through better and intense information, education and communication (IEC) and behavior, change and communication (BCC) activities.

ASHA should get monetary benefits after promoting all the women for hospital delivery irrespective of the socioeconomic status of the women who has been promoted. Extra efforts are needed to increase the knowledge and awareness of ASHA regarding importance of antenatal and postnatal care. Thus, they need to sensitize on these aspects by regular training and orientation programs.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

REFERENCES

- World Health Organization. The World Health Day 2005 - Make every mother and child count. Geneva: WHO; 2005. Available at: https://www.who.int/whr/ 2005/whr2005_en.pdf. Accessed on 3 October 2020.
- 2. Satish Kumar. Reducing maternal mortality in India: Policy, equity, and quality issues. Indian Journal of Public Health, 2010;54(2):57-64.
- 3. Varma GR, Kusuma YS, Babu BV. Antenatal care service utilization in tribal and rural areas in a South Indian district: an evaluation through mixed methods approach. J Egyptian Public Health Association. 2011;86(1-2):11-5.
- 4. Reproductive and Child Health II Ministry of Health and Family Welfare; Available at: http://www.mohfw.nic.in/showlink.php?id=1. Accessed on 11 October 2020.
- Government of India. National Population Policy 2000, Ministry of Health and Family Welfare, New Delhi 2000. Available at: http://www.nhp.gov.in/ national-population-policy-2000_pg. Accessed on 3 October 2020.
- Government of India. National Rural Health Mission. Accredited Social Health Activist (ASHA) Guidelines, Ministry of Health and Family Welfare, New Delhi. Available at: https://nhm.gov.in/index1. php?lang=1&level=1&sublinkid=150&lid=226. Accessed on 3 October 2020.
- IIPS and Macro international, National Family Health Survey 2005-2006 (NFHS-3). Mumbai: Ministry of Health and Family Welfare, Government of India and International Institutes for Population Sciences; 2006. Available at: http://rchiips.org/nfhs/ nfhs3.shtml. Accessed on 3 October 2020.
- 8. Lwanga SK, Lemshaw S. Sample size determination in health studies: A practical manual. World Health Organization, Geneva, 1992. Available at: https://apps.who.int/iris/handle/10665/40062. Accessed on 3 October 2020.
- 9. Deepthi S Varma, M E Khan, Hazra Avishek. Increasing institutional delivery and access to emergency obstetrics care services in rural Uttar Pradesh. The J Family Welfare. 2010;56:23-30.
- 10. Punia Anita, J RB, P MS, R Vidya, Kalhan M. Pattern of Deliveries in Rural Areas of a District in Haryana, India. Internet J Epidemiol. 2010;9(1):1-8.

- IIPS and Macro international, National Family Health Survey 2005-2006 (NFHS-3). Mumbai: Ministry of Health and Family Welfare, Government of India and International Institutes for Population Sciences; 2006. Available at: http://rchiips.org/nfhs/ nfhs3.shtml. Accessed on 3 October 2020.
- 12. Ansari MA, Z Khan. Antenatal care services in rural areas of Aligarh, India: A cross-sectional study. J Public Health Epidemiol. 2011;3(5):210-6.
- 13. Rajesh G, Deepti S, Tejbir S, Avtar SP. Study on delivery practices among women in rural Punjab. Health and Population: Perspectives and issues. 2010;33(1):23-33.
- 14. Sanjay P, Ravi S, Rawat CMS, Gupta VM. Socioeconomic factors and delivery practices in an urban slum of district Nainital, Uttaranchal. 2007;32(3):210-1.
- 15. Kotnis SD, Gokhale RM, Rayate MV. Why still home deliveries in urban slum dwellers? National Journal of Community Medicine 2012;3(1):85-8.
- 16. Datta M, Manna N. A study on socio-demographic correlates of maternal health care utilization in a rural area of West Bengal, India. Global Journal of Medicine and Public Health. 2012;1(4):7-12.
- 17. Mumbare SS, Rege R. Ante natal care services utilization, delivery practices and factors affecting them in tribal area of north Maharashtra. Indian J Community Med. 2011;36(4):287-90.
- 18. Srijana P. Domicile or Hospice? Choices for the site of delivery. Journal of Community Medicine and Health Education. 2012;2(4):1-5.
- 19. Das S, Bapat U, More NS, Chordhekar L, Joshi W, Osrin D et al. Prospective study of determinants and cost of home births in Mumbai slums. BMC Pregnancy Childbirth. 2010;10:38.
- Khatib N, Zahiruddin QS, Gaidhane AM, Waghmare L, Srivatsava T, Goyal RC et al. Predictors of antenatal care services and pregnancy outcome in a rural area: A prospective study in Wardha district, India. Indian J Med Sci. 2009;63(10):436-44.
- 21. Pardeshi GS, Dalvi SS, Pergulwar CR, Gite RN, Wanje SD. Trends in choosing place of delivery and assistance during delivery in Nanded district, Maharashtra, India. J Health Popul Nutr. 2011;29(1):71-6.
- 22. Tuladhar H. Determinants of home delivery in a semi urban settings of Nepal. Nepal J Obstetr Gynaecol. 2009;4(1):30-7.

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