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A STUDY OF SOCIO-DEMOGRAPHIC FACTOR ASSOCIATED WITH PLACE OF DELIVERY AMONG WOMEN OF CHILDBEARING AGE IN RURAL MAHARASHTRA

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HOW TO CITE THIS ARTICLE:

Lohakpure V. R, Nagaonkar A. S, Vedpathak V. L, Deo D. S, Dahire P.L, Kawalkar U. G, Jogdand M. S. "A Study of Socio-Demographic Factor Associated with Place of Delivery among Women of Childbearing age in Rural Maharashtra". Journal of Evolution of Medical and Dental Sciences 2014; Vol. 3, Issue 43, September 11; Page: 10743-10749, DOI: 10.14260/jemds/2014/3399

ABSTRACT: BACKGROUND: Skilled attendance at delivery is an important indicator in monitoring progress towards Millennium Development Goal 5 to reduce the maternal mortality ratio by three quarters between 1990 and 2015. In addition to professional attention, it is important that mothers deliver their babies in an appropriate setting, where lifesaving equipment and hygienic conditions can also help reduce the risk of complications that may cause death or illness to mother and child. **OBJECTIVE:** To study socio-demographic factors associated with place of delivery. **MATERIALS AND METHODS:** A cross-sectional study was conducted during Jan 2013-April 2013 in a field practice area of medical college. The study included 400 married women under the age of 45 years, who had at least one child delivered in last one year. **RESULTS:** Of total 400 women, 320 (80%) women delivered in hospital. Muslim religion 22 (6.87%) and economic status (Upper & middle class) 315(98.44%) were attributed to higher delivery in hospital. literate mother 318(99.37%) delivered more in hospital compared to their counterpart while Knowledge about JSY 318(99.37%) also one of the determining factor in hospital delivery. **CONCLUSIONS:** The educational level, economic status and religion of mother are significant predictors of place of delivery. **INTERPRETATIONS:** The educational level among women with awareness regarding Janani surkasha Yojana should be increased to reduce number of home deliveries.

KEYWORDS: Socio-demographic factors, maternal mortality Ratio, Janani surkasha Yojana.

INTRODUCTION: Much progress has been made on maternal child health services as the MMR (Maternal mortality Ratio) declined globally by nearly 50%. However, this global decline in maternal mortality masks the unequal progress across countries. The incidence of maternal deaths remains strikingly high in many countries in Africa and South Asia, including India, which faces one of the greatest burdens of maternal and neonatal deaths.¹

Access to quality care during pregnancy and especially at delivery seems to be the crucial factor in explaining the disparity in maternal mortality and morbidity between the developing and the industrialized world. An estimated 90% of maternal deaths could be avoided, if adequate care was provided.²

Skilled attendance at delivery is an important indicator in monitoring progress towards Millennium Development Goal 5 to reduce the maternal mortality ratio by three quarters between 1990 and 2015. In addition to professional attention, it is important that mothers deliver their babies in an appropriate setting, where lifesaving equipment and hygienic conditions can also help reduce the risk of complications that may cause death or illness to mother and child.³

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Previous literature has identified three main types of barriers to health care services utilization: (1) delay in deciding to seek care; (2) delay in reaching an adequate health care facility; and (3) delay in receiving adequate care at that facility. This is cited as the "three delays" model in the literature (Thaddeus and Maine, 1994). Delay 1 relates to lack of health related knowledge; delay 2 is caused by physical inaccessibility (distance) of facilities, lack of transportation, difficult terrain and high travel costs; and delay 3 occurs due to inadequate availability of equipment, drugs, and medical staff.¹

Hence the present study was conducted mainly to find out deciding factor related to socio-demographic condition of mother associated with place of delivery.

MATERIALS AND METHODS: A community based cross-sectional study was carried out during Jan-April 2013 in a Rural Community Health Centre (CHC), which comes under a field practice area of Tertiary medical college. The study included 400 married women under the age of 45 years, who had at least one child delivered in last one year. Sample size for study calculated by taking prevalence of Institutional Delivery as 47% with 90% statistical power and 5% level of significance using formula it came out 385. (lemeshow_samplesize.pdf).⁴

All the selected mothers were interviewed as per predesigned, pre-tested and semi-structured questionnaire by house-to-house visits after getting informed consent. Ethical clearance/approval to the study was obtained. The data so collected were compiled, tabulated, analyzed and interpreted using Microsoft office Excel 2007. Percentages and proportions were calculated and Chi square test & Fisher exact test were applied as test of significance.

The socio-demographic factors which influence place of delivery like birth order, mother's age, education of mother, family income, mother's religion, working condition of mother, antenatal care (ANC) registration and knowledge about Janani surkasha Yojana were studied. For calculating socio-economic status (SES), modified BG Prasad's classification was used.

RESULTS: Of total 400 women, 320 (80%) women delivered in hospital. In these 288 (90%) women delivered in Govt, hospital while 32 (10%) delivered in Private set up. [Fig: 1] In 80 (20%) home delivered mother 70% delivery conducted by trained dai while 30% conducted by untrained dai. [Fig: 2] the proportions of normal vaginal and caesarean section were 367 (91.7%), and 33 (8.2%) respectively.

Among the total mothers, mother who Registered for ANC 310(93.93%) delivered more in hospital than non-registered mother 10(16.66%) $p < 0.05$. For nearly half the pregnant women (i.e.54.54%), the main purpose of first consultation was a routine check-up; an another 45.45 % wished to confirm their pregnancy. Parity of mother as primigravida (95.4%) and mother from joint family more delivered in hospital, the Knowledge about Janani surkasha Yojana (83.2%)also one of the determining factor for hospital delivery ($p < 0.05$)

All Muslim mother 22(100%) delivered in hospital compared to Hindu 238(76.77%) and Buddha mother 60 (88.23%).Younger (age below 30 year) and literate mother delivered more in hospital compared to their counterpart i.e.290 (85.29%) and 318 (83.68%) respectively. Socioeconomic status more influence the place of delivery as (upper and middle class) mother 315 (82.89%) more delivered in hospital as compared to lower class mother 5 (20%).

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The easy availability of vehicle for transport was found to be significantly associated with home or hospital deliveries. [Table-1].

Hospital delivery 80% in present study compared to NFHS-3⁵ (38.7%) this may because near availability of Govt. hospital and private health set up.

Table 1: Factor associate with hospital deliveries among Mother

Variable	Hospital n=320	Home n=80	Total N=400	OR 95% C.I.	p-value
Age of mother					
<30 years	290(85.3%)	50(14.7%)	340	7.326	<0.05
>30 year	30(50%)	30(50%)	60	(2.8-18.6)	
Religion					
Hindu	238(76.7%)	72(23.2%)	310		<0.05
Muslim	22(100%)	0	22		
Buddha	60(88.2%)	8(11.8%)	68		
Education					
Literate	318(83.6%)	62(16.3%)	380	46.16	<0.05*
Illiterate	2(10%)	18(90%)	20	(10.4-204)	
SES					
Upper	123(100%)	0	123		<0.05
Middle	192(74.7%)	65(25.3%)	257		
Lower	5(25%)	15(75%)	20		
Family Type					
Joint	305(95.3%)	15(4.7%)	320	88.11	<0.05
Nuclear	15(18.75%)	65(81.2%)	80	(41.0-189.2)	
Parity					
Primi	105(95.4%)	5(4.5%)	110	7.326	<0.05
Multi	215(74.1%)	75(25.8%)	290	(2.8-18.6)	
ANC Registration					
Yes	310(93.93%)	20(6.1%)	330	93	<0.05
No	10(14.2%)	60(85.7%)	70	(41.4-208.6)	
Availability of Transport/vehicle					
Yes	320(81%)	75(18.9%)	395		<0.05*
No	0	5(100%)	5		
Knowledge about JSY					
Yes	318(83.2%)	64(16.7%)	382	39.75	<0.05*
No	2(11.1%)	16(88.8%)	18	(8.9-177.7)	
Working mother					
Yes	275(85.9%)	45(14%)	320	4.753	<0.05
No	45(56.2%)	35(43.7%)	80	(2.7-8.1)	

OR—Odds ratio, CI—Confidence interval, SES—Socio-economic status, ANC—Ante-natal care, JSY—Janani surksha yojana, *—By Fisher exact test.

Table 1

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Fig. 1

Fig. 2

As in our study for the choice of home delivery versus hospital delivery, mother with higher birth order (i.e. Mutigravidae) and nuclear family and non-availability of transport had greater odds of delivering at home while lower maternal age, ANC registered mother, knowledge about JSY and working mother were associate with greater odds of delivery in hospital set up. These finding were similar to finding of Amardeep thind et al.⁶

In present study institutional delivery were (80%) more than the finding of study Rajesh garg et al in Punjab (33.9%),⁷ Gupta et al in east Delhi (55%)⁸ and Pandey et al in Uttarnchal (48.54%)⁹

In a present study 10% of hospital delivery conducted in private hospital which is much less in comparison to figure NFHS 3¹⁰ (27.4%) for Maharashtra and study by Pandey et al (62%)⁹ in Uttaranchal. More institutional delivery were found among literate and younger (age <30 years) mother which is similar to finding of NFHS- 3¹⁰ in Maharashtra, Pandey et al in Uttaranchal⁹ and lyenger et al in rural Rajasthan.¹¹

District level household survey (DLHS) -RCH reported only 30% institutional delivery in rural area in India and the difference could be due to the increasing emphasis on institutional delivery. Among home delivery 30% delivery conducted by untrained dais were similar to range reported by various other study e.g.

Das gupta et al¹² reported 20.6% home deliveries by untrained dai and 3.4% by other relatives etc. Pant B et al¹³ reported 74.6% of deliveries by untrained dais/persons and 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.

Lower socio-economic status, elderly mother, high parity, and illiterate mother, mother who do not ANC registered and lack of Knowledge of JSY were found to be very important determinant of high probability of having home deliveries. Many other studies had also shown almost similar types of associations.¹¹⁻¹⁶ 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.

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CONCLUSION: For most of the home delivered mother, pregnancies are routine affairs and don't require much medical attention. Not availing skilled care for delivery is the traditional attitude of getting the delivery done by a trained/untrained dai in the village. Health education aspect on the promotion of safe and institutional deliveries is often neglected by the health care delivery system.

The introduction of Janani Suraksha Yojana (JSY) under the National Rural Health Mission (NRHM) was launched for increasing institutional deliveries by provision of cash assistance to mothers but mother do not know much about this scheme. The future health behaviour and practice of young boys and girls would depend on the education and information we are providing them now.

Hence, the higher secondary school syllabus should include reproductive life cycle curriculum with proper consideration of local sensitivity and cultural practices. The role of celebrities; particularly women from various walks of life such as sports, movies, corporate, politics, art, science, etc. could be explored for spreading the message of safe and institutional deliveries through print and electronic media as in the case of Polio Eradication Programme and other national health programmes.

Unless institutional delivery by skilled providers is made available for the majority of the pregnant women, it will not be possible to achieve the set national targets and the Millennium Development Goals. Various steps like health education, female literacy and women empowerment, etc. could possibly offer a solution towards the problem; otherwise it will take a long time to achieve universalization of safe deliveries in India.

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Date of Submission: 31/08/2014.
Date of Peer Review: 01/09/2014.
Date of Acceptance: 06/09/2014.
Date of Publishing: 11/09/2014.