



Patterns of deliveries in rural area of Nandyal district, Andhra Pradesh, India

P. Sasikala² Vijaya Vishnu² M.K. Sasikala K.³ Sowmya Sudha^{4} Nagoor Khadervali⁵ S. Govindu⁶*

ABSTRACT

Introduction

This study was conducted to study the pattern of deliveries in rural areas of Nandyala & to observe the association of delivery pattern with socio-cultural and economic factors.

Methodology

A community based cross-sectional retrospective study was carried out during 2016 for a period of one year, in a Rural area Nandivargam of Nandyala district having 5400 populations of which Sample size of 455 were taken. The study subjects selected were the mothers who delivered within last 6 years. The data was analysed and interpreted using SPSS.

Results

Majority of the women belonged to 23 years, 70% were Hindus, and 11% women delivered babies at their residence. 60% of home delivery respondents belonged to lower middle class. There was an equal proportion of respondents from the category of home delivery were from nuclear joint and extended families, 52% of the women were illiterates which is statistically significant. Majority of home deliveries were conducted by 40% of their relatives. 81% of the home delivery respondents were initiated breast feeding within 0-1 hour after birth, 42% from all respondents were initiated weaning after 6 months which was a correct method. 89% of population that used health facility for delivery was attended by skilled birth attendants which was still low when compared to the national target of 100%, though there was some improvement when compared to the past national average.

Conclusion

For delivery in health facility increased with increase in education level, being from high income group. Majority were initiated breast feeding within one hour.

Keywords: Home delivery, Pattern of Delivery, Feeding practices

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4*Corresponding author: K. Sowmya Sudha- (corresponding author) Associate professor, department of community medicine, ACSR government medical college, Nellore, Andhra Pradesh. Phone number: 9703500914. Email id: drksowmyasudha@gmail.com; 1.P.Sasikala- assistant professor, department of community medicine, ACSR government medical college, Nellore, Andhra Pradesh. Phone number: 9291448456. Email id: sasilaxman7@gmail.com; 2. G.Vijaya Vishnu- Assistant professor, department of community medicine, ACSR government medical college, Nellore, Andhra Pradesh; 3.M.K. Sasikala, Assistant professor, dept. of community medicine, SVMC, Tirupathi, Andhra Pradesh 5.Nagoor Khadervali, - Assistant professor, department of community medicine, ACSR government medical college, Nellore, Andhra Pradesh; 6.S. Govindu. Professor & Head of department of community medicine, ACSR government medical college, Nellore, Andhra Pradesh.

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INTRODUCTION

In the developing world, even today delivery is the commonest event where life and death stand side by side for both the expectant mother and her forthcoming new born. The maternal mortality ratio in India was estimated to be around 400-450/ 100000 live births while in rural areas is 619/100000 live births.¹ In 2015, India contributed to about 15% of the global mortality rate². Access to antenatal care during pregnancy and skilled care during delivery were important towards preventing complications to mother. India had taken significant steps to reduce maternal mortality ratio and to increase the number of births attended by skilled health workers. In addition to professional attendance during delivery, mothers who delivered in institutions had access to life saving equipment in case of a birth complication and to hygienic conditions for both the mother and child. However, despite various incentive schemes organized by the Indian government to encourage institutional deliveries, studies had shown that not all women had opted for institutional delivery, especially rural women of low socioeconomic status³. Likelihood of a woman who want to delivery in an institution is affected by her economic status and by her social status⁴. Thus, the issue of home deliveries could not be addressed only through government schemes that alleviate financial burden of institutional delivery. In order to increase utilization of maternal healthcare services, specifically institutional delivery, social, environmental and cultural reasons behind delivery care-seeking must be examined for marginalized communities. World Health Organization (WHO) recommends initiation of breast feeding within 1 hour of birth, exclusive breast feeding for first 6 months of life and continued breast feeding for 2 years or more⁵. Inappropriate feeding practices had impact on growth, development, and survival of infants and children. The objectives of this study is to study the patterns of deliveries in rural areas of Nandyala and to observe an association of delivery pattern with socio-cultural and economic factors.

METHODOLOGY

A community based cross-sectional retrospective study

was carried out during 2022 for a period of one year, in a rural area Nandivargam of Nandyala district having 5400 populations. Majority of people prefer home delivery in this place. As they believe homes were very hygienic and hospitals were unhygienic and also it is their custom/line of inheritance to deliver a baby were their ancestors delivered. By assuming 43.3% prevalence of home deliveries⁶ at 95% confidence level with 11% allowable error, the calculated sample size was 434 plus a non-response rate of 5% were added to the above sample. Thus, we got a total of 455. The study subjects selected were the mothers who delivered within last 6 years preceding the date of data collection. A general survey of the population under study was conducted to enlist all the eligible mothers by using a simple random method. 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 line. The questionnaire consists of information of demographic details and place of delivery, personnel of delivery conducted, breast feeding and weaning practices. Ethical clearance/approval to the study was given by Institutional ethics committee. The data so collected were compiled, tabulated, analysed and interpreted using SPSS (version 22) percentages and proportions were calculated and chi square test was applied as test of significance.

Results-

Majority of the women belonged to the age group 17-28 years and their mean age was 23 years. The study participants were women who delivered a baby prior to 6 years of the conduct of the study. In our study 70% were belonged to Hindus, 15% were belonged to Christians and 15% were belonged to Muslims. In a total of the study respondents, 11% of the women delivered babies at their residence, 28% of them delivered at government hospitals and rest 61% delivered at private hospital (table-1). Chi- 40.3., $p < 0.000$.

Table 1: Religion with relation to place of delivery

Serial number	Religion	Home	Government hospital	Private hospital	Total
1	Hindu	31 (60%)	86 (68%)	201 (73%)	318 (70%)
2	Muslim	1 (2%)	15 (12%)	53 (19%)	69 (15%)
3	Christian	20 (38%)	25 (20%)	23 (8%)	68 (15%)
	Total	52 (11%)	126 (28%)	277 (61%)	455 (100%)

As per their socio-economic status 60% of the home delivery respondents belonged to lower middle class as

per B.G.Prasad's socio-economic classification (table-2).

Table 2. Socio-economic status of study respondents

Serial number	Socio economic status	Home	Government	Private	Total
1	Lower	10 (19%)	17 (13%)	34 (12%)	61 (13%)
2	Lower middle	31 (60%)	50 (40%)	18 (7%)	99 (22%)
3	Middle	10 (19%)	52 (41%)	36 (13%)	98 (22%)
4	Upper middle	1 (2%)	5 (4%)	53 (19%)	59 (13%)
5	Upper	0 (0%)	2 (1%)	136 (49%)	138 (30%)
	Total	52(11%)	126(28%)	277(61%)	455

40% of the women who delivered at government hospitals belonged to the same group and 19% were belonged to upper middle class of those delivered at private hospitals. There is an equal proportion of respondents from the category of home delivery were

from nuclear joint and extended families. We also reported 56% of government hospital deliver women were from nuclear families and 64% of women who delivered at private hospital belonged to nuclear family (table-3).

Table 3. Type of family in relation to place of delivery

Serial number	Family type	Home	Government	Private	Total
1	Nuclear	18 (35%)	71 (56%)	117 (42%)	206 (45%)
2	Joint	18 (35%)	38 (30%)	128 (46%)	184 (41%)
3	Extended family	16 (30%)	17 (14%)	32 (12%)	65 (14%)
	Total	52(11%)	126(28%)	277(61%)	455

Education of the mother plays a major part in women health and decision-making capacity towards her delivery and feeding practices of the baby. This is also a key part in reduction of MMR and IMR. In our study as

per education is concerned 35% were illiterates, 67% were literates. But in category of home deliveries 52% of the women were illiterates, 48% were literates (table-4).

Table 4. Education of the mother in relation to place of delivery

Serial number	Educational status	Home	Government	Private	Total
1	Illiterate	27 (52%)	41 (32%)	93 (33%)	161 (35%)
2	Primary	18 (35%)	21 (17%)	46 (17%)	85 (19%)
3	Middle school	5 (9)	37 (29%)	39 (14%)	81 (18%)
4	High school	1 (2%)	25 (20%)	31 (11%)	57 (13%)
5	Intermediate	1 (2%)	2 (2%)	30 (9%)	33 (7%)
6	Degree	0	0	24 (9%)	24 (5%)
7	Post graduate	0	0	14 (5%)	14 (3%)
	Total	52(11%)	126(28%)	277(61%)	455

In women who delivered at government hospitals 32% were illiterates & 68% were literates. The women who delivered at private hospitals 33% were illiterates & 65% were literates. We reported 50% of the respondent's

partner from the category of home deliveries were illiterates, 18% and 9% were also illiterate from the category of government hospital and private hospitals (table-5). Chi- 126, P< 0.000

Table 5. Education of Women husband with relation to place of delivery

Serial number	Educational status	Home	Government	Private	Total
1	Illiterate	26 (50%)	21 (17%)	25 (9%)	72 (16%)
2	Primary	4 (8%)	8 (6%)	21 (8%)	33 (7%)
3	Middle school	0	8 (6%)	51 (18%)	59 (13%)
4	High school	0	23 (18%)	54 (20%)	77 (17%)
5	Intermediate	20 (38%)	44 (35%)	31 (11%)	95 (21%)
6	Degree	2 (4%)	12 (10%)	53 (19%)	67 (15%)
7	Post graduate	0	10 (8%)	42 (15%)	52 (11%)
	Total	52(11%)	126(25%)	277(61%)	455

There is a gradual rise of consanguineous marriages of the study respondents from 1st degree to 4th degree

were reported from all categories (table-6).

Table 6. Consanguineous marriage in relation to place of delivery

Serial number	Consanguineous marriage	Home	Government	Private	Total
1	1 st degree	11 (21%)	33 (26%)	33 (12%)	77 (17%)
2	2 nd degree	11 (21%)	10 (8%)	24 (9%)	45 (10%)
3	3 rd degree	2 (4%)	30 (24%)	84 (30%)	116 (25%)
4	4 th degree	28 (54%)	53 (42%)	136 (49%)	217 (48%)
5	Total	52(11%)	126(28%)	277(61%)	455

Chi-32.2, $P < 0.0000$. Only a few 25% of deliveries were associated with illness showing at risk pregnancy (table-

7). Chi-9.6, $P < 0.008$

Table 7. History of chronic illness in relation to place of delivery

Serial number	Chronic illness	Home	Government	Private	Total
1	Absent	31 (60%)	90 (71%)	219 (79%)	340 (75%)
2	Present	21 (40%)	36 (29%)	58 (21%)	115 (25%)
	Total	52(11%)	126(28%)	277(61%)	455

Majority of home deliveries were conducted by 40% of their relatives, 14% by traditional birth attendants, only 11% of the home deliveries were conducted by health care workers including doctors. In contrast to 96% of deliveries were attended by health care workers, 100% of deliveries were attended by doctors in private

hospitals. As overall 83% of the deliveries were attended by doctors, 6% by nurse/health worker female, < 1% by other health staff, 3.4% of deliveries still attended by traditional birth attendants, 5% by their relative (table-8).

Table 8. Delivery conducted by type of health worker

Serial Number	Conducted By	Home	Government	Private	Total
1	Doctor	3 (6%)	96 (77%)	277 (100%)	376 (83%)
2	Nurse	5 (10%)	22 (17%)	0	27 (6%)
3	Health worker	3 (6%)	0	0	3 (1%)
4	Traditional birth attendant	14 (27%)	2 (1%)	0	16 (3%)
5	Relatives	21 (40%)	2 (1%)	0	23 (5%)
6	Others	6 (11%)	4 (3%)	0	10 (2%)
	Total	52(11%)	126(28%)	277(61%)	455

We categorize initiation of breast feeding as 0-1 hour, same day, 2-3 days, and not fed with breast milk. We reported 81% of the home delivery respondents were initiated breast feeding within 0-1 hour after birth. Only

48% and 52 % of deliveries attended by government and private hospitals were initiated breast feeding at 0-1 hour after delivery (table-g).

Table 9. Initiation of Breast Feeding in Relation with Place of Delivery

Serial Number	Initiation Of Breast Feeding	Home	Government	Private	Total
1	0-1 hour after birth	42 (81%)	61 (48%)	145 (52%)	248 (55%)
2	Same day	6 (11%)	57 (45%)	121 (44%)	184 (40%)
3	2-3 days	0	2 (2%)	0	2 (1%)
4	Not given	4 (8%)	6 (5%)	11 (4%)	21 (4%)
	TOTAL	52(11%)	126(28%)	277(61%)	455

Chi- 26.3, P<0.000. As in overall 55% of the respondents were initiated breast feeding within one hour, 40% were initiated at the same day, less than 1% were initiated 2-3 days after, 4.6% were not given breast feeding may be due to lactation failure. Only a few respondents from all

categories 4%, 14% and 9% were initiated weaning before 6 months. Suggesting these group were not exclusively breast feed their babies. 10%, 27% and 55% were initiated after 6 months (table-10)

Table 10. Weaning practice in relation to place of delivery

Serial number	Weaning	Home	Government	Private	Total
1	<6 Months	2 (4%)	17 (13%)	26 (10%)	45 (10%)
2	>6 Months	5 (10%)	34 (27%)	152 (55%)	191 (42%)
3	1 Year	8 (15%)	11 (9%)	15 (5%)	34 (7%)
4	>1 Year	37 (71%)	64 (51%)	84 (30%)	185 (41%)
	TOTAL	52(11%)	126(28%)	277(61%)	455

and majority 71%, 51% and 30% were initiated after one year. Chi- 62.8, $P < 0.000$. As in total 42% from all respondents were initiated weaning after 6 months which was a correct method. Majority 69%, 57% and 47% of respondents from all categories were breast feed their babies up to one year. The feeding of the baby can

adequately give up to 2 yrs. it can also be extended depending up on the capability of the mother. Such finding was not reported in our study. As in total respondents only 53% of the women were fed their babies up to one year period (table-11). Chi- 39.9, $p < 0.0001$

Table 11. Duration of breast feeding in relation to place of delivery

Serial Number	Duration	Home	Government	Private	Total
1	1-2 months	2 (4%)	7 (6%)	6 (2%)	15 (3%)
2	3-4 months	0	8 (6%)	2 (1%)	10 (2%)
3	5-6 months	6 (11%)	9 (7%)	34 (12%)	50 (11%)
4	7 months	0	17 (13%)	86 (32%)	103 (23%)
5	9 months	4 (8%)	6 (5%)	9 (3%)	19 (4%)
6	>1 year	36 (69%)	71 (57%)	131 (47%)	241 (53%)
7	Not given	4 (8%)	8 (6%)	9 (3%)	17 (4%)
	Total	52(11%)	126(28%)	277(61%)	455

DISCUSSION

The study participants were women who delivered a baby prior to 6 years of the conduct of the study. They have a strong belief and prestigious concept to deliver baby where their relatives and sisters were delivered. They believed hospitals were unhygienic to deliver baby, they were comfortable to deliver at their home thinking that home is a safe and hygienic place and they get more man-power to help them. 11% of the women delivered babies at their residence, 28% of them delivered at government hospitals and rest 61% delivered at private hospital. A study done by Barbhuiya⁷ reported majority of the mothers delivered their babies at home. The same study also been revealed that the respondents felt it was not necessary to deliver their babies in the institutions, which was a wrong conception which was a similar concept to our study.

Anita Gupta et al reported in their study, 51% of the study subjects had institutional deliveries while 49% had home deliveries. Women married early were more likely to have home deliveries than women married after 18 years⁸ as per their socio-economic status, 60% of the home delivery respondents belonged to lower middle class, 40% of the women who delivered at government hospitals belonged to the same group. As per Gupta et al⁸ institutional deliveries increased with the education of the women and their husband. Family income, as well as duration of stay in the area had no influence on the place of delivery.

Our study reported 56% of government hospital deliver women are from nuclear families and 64% of women who delivered at private hospital were also belonged to nuclear family. Similar findings were reported by a study done at Mysuru⁹ women cited not having anyone to accompany her to the hospital as the reason for delivering at home. Education of the mother plays a major part in women health and decision-making capacity towards her delivery and feeding practices of the baby. This was also a key part in reduction of MMR and IMR. In our study as per education is concerned 35% were illiterates, 67% were literates. In home deliveries, 52% of the women were illiterates, 48% were literates, and 50% of the respondent's partners of home deliveries were illiterates.

Majority of home deliveries were conducted by 40% their relatives. 14% of traditional birth attendants, only 11% of the deliveries were conducted by health care workers including doctors. In contrast to 96% of deliveries were attended by health care workers, 100% of deliveries were attended by doctors in private hospitals. As overall 83% of the deliveries were attended by doctors, 6% by nurse/health worker female, < 1% by other health staff, 3.4% of deliveries still attended by traditional birth attendants, 5% by their relative. They reported 57.8% deliveries were assisted by doctor or nurse while 33.3% of the deliveries were by dai and 8.8% by relatives and others.

We categorize initiation of breast feeding as 0-1 hour, same day, 2-3 days, and not fed with breast milk. We reported 81% of the home delivery respondents were initiated breast feeding within 0-1 hour after birth. A study by Mukhopadhyay Dk reported¹⁰ that in 0-5 month age group, 39.6% children were put to breast within 1 hour of birth whereas 38.1% mothers did so in 6-23-month age group. Pre-lacteal feeding was received by 27.1% children of 0-5 month and 25.4% children of 6-23 months. In our study, only a few respondents from all

categories 4%, 14% and 9% were initiated weaning before 6 months suggesting these group were not exclusively breast feed their babies. 10%, 27% and 55% were initiated after 6 months. Majority 69%, 57% and 47% of respondents from all categories were breast feed their babies up to one year. The feeding of the baby can adequately give up to 2 years it can also be extended depending up on the capability of the mother. Such finding was not reported in our study. As in total respondents only 53% of the women were fed their babies up to one year period.

CONCLUSIONS

Proportion of women in the study population that uses health facility for delivery i.e., 89% and hence being attended by skilled birth attendants was still low when compared to the national target of 100%, though there was some improvement when compared to the past national average. For delivery in health facility increased with increase in education level, being from high income group. Majority were initiated breast feeding within one hour. Exclusive breast fed their babies and feed babies up to one year.

RECOMMENDATIONS

Efforts to improve accessibility of health facilities by rural communities by increasing number of health facilities, road networks as well transport services in rural areas should be intensified.

Since poverty (low income) and hence lack of money to cater for health services was also a barrier for seeking assistance of health professional during delivery, advancing affordable credits to women and encouraging them to engage in small scale businesses for income generation could be of much help. Sensitizing people regarding national programmes like Janani Suraksha yojana (JSY), Janani Sishu Suraksha Karyakaram (JSSK) etc should also be done.

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