

Factors Contributing to Antenatal Care and Delivery Practices in Village Development Committees of Ilam District, Nepal

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ABSTRACT

Background

Proper antenatal care and good delivery practice helps to prevent the complications of childbirth and ensures a wholesome maternal and child health in the future. Almost half of the births in the developing countries take place without a skilled birth attendant.

Objectives

To assess the antenatal care (ANC) and delivery practices in the Village Development Committees (VDC) of Ilam district, Nepal and to identify the relationship with the socio-demographic factors.

Method

Cross sectional study of 262 mothers of reproductive age group having at least one child of less than five years of age, selected by simple random sampling, was carried out over different VDCs of Ilam by face to face interview using semi-structured questionnaire.

Results

Among 262 mothers, 34.7% were married before the age of 18 years. 69.5% of the mothers had attended four antenatal care visits. Nearly 47% of the deliveries were conducted at home out of which only 33.6% were conducted by skilled birth attendant. Number of children and maternal education were found to significantly affect the ANC visit and place of delivery. Age at marriage and age at first pregnancy were significantly associated with the place of delivery.

Conclusion

Large proportion of mothers still do not have adequate antenatal visits and this is supported by the fact that nearly half of the deliveries were conducted at home. Motivation and incentives are required for pregnant mothers especially in rural areas regarding importance of adequate antenatal visits and delivery in health institutions. Population policies should be aimed at reducing proportion of women marrying and giving birth in their teens.

KEY WORDS

Antenatal care, delivery practices, home delivery, pregnancy, Nepal

INTRODUCTION

A proper antenatal care (ANC) and good delivery practice helps to prevent the complications in childbirth and ensures a wholesome maternal and child health in future. In Nepal, there has been a shift of paradigm when it comes to access of antenatal care by a pregnant lady and delivery of the same by a trained birth attendant. Contrary to the traditional aspect, where children were born in an

unhealthy environment from undernourished and anemic mothers, provision of antenatal care and deliveries given and conducted by health professionals either at home or in health institutes has been on an increasing trend.

Although there is little evidence that antenatal care prevents maternal mortality, the potential of antenatal care for reducing maternal morbidity and improving

newborn survival has been widely acknowledged.¹ A multi-country randomised controlled trial led by WHO showed that essential interventions can be provided over four visits at specified intervals, at least for healthy women with no underlying medical problems.² However surveys had shown countries like Bangladesh, Ethiopia, Morocco, Nepal and Yemen have relatively high percentages of women who received only one antenatal visit.³ Globally, one third of births take place at home without the assistance of a skilled attendant.⁴ Approximately 536,000 women die from complications related to pregnancy and childbirth, with 99% of these deaths occurring in Africa and Asia. Increase in proportion of births attended by skilled birth attendants reduces the maternal mortality which will eventually convert the Millennium Development Goal (MDG) into reality.

According to Nepal Demographic and Health Survey (NDHS) 2011, 58% percent of women who gave birth in the five years preceding the survey received antenatal care from a skilled provider at least once for the last live birth whereas 36 % of births are attended by skilled providers, and only 28% delivered at a health facility.⁵ Access to skilled care during pregnancy, childbirth and the first month after delivery are key to saving these women's lives and those of their children. The proportion of antenatal care and delivery by skilled attendant along with health facility deliveries are less in the rural compared to urban areas. Thus the following study aims to assess the antenatal care and delivery practices in the rural village development committees (VDCs) of Ilam district of Nepal.

METHODS

This was a cross sectional study (as a part of MBBS 6th semester Epidemiological skills for Health Management program) conducted in Barbote, Nepaltar and Maikhola communities of Ilam district from May to June 2011. Nepal Demography and Health Survey 2006 showed that 26% of women received no antenatal care for births in the five years before the survey.⁶ We calculated the minimum sample size to estimate the prevalence for 95% confidence limits at an allowable error of 20% to be 273 mothers. Altogether 262 mothers of reproductive age group having at least one child of less than five years of age participated in the study. Criteria of having one child of less than five years of age was kept to minimize the recall bias regarding information related to ANC and delivery.

Among the 12 VDCs within the catchment area of Ilam municipality, three were randomly selected and sampling frame of 450 mothers of reproductive age group having one child of less than five years of age was made. This was followed by simple random sampling to obtain the final sample. Data was collected with the help of trained MBBS students of B.P. Koirala Institute of Health Sciences by face to face interview using pre tested semi structured questionnaire. The students were adept on epidemiological

study designs and various aspects of data collection and analysis. One mother with the youngest child was chosen from each household.

Outcome variables were categorized as antenatal visit done in the last pregnancy and whether the delivery was conducted at home or health facility. Smoking and alcohol consumption was assessed by asking the mother, "Did you ever smoke/consume alcohol in your last pregnancy?" Iron supplementation was assessed by asking whether the mothers received 225 iron tablets during the last pregnancy.

Ethical clearance was acquired from the ethical committee of B.P. Koirala Institute of Health Sciences. Informed consent was taken from all the participants. Participation in the study was entirely voluntary and clear explanation of the objectives of the study was provided.

Collected data were entered into MS Windows Excel in the form of codes. Analysis was performed using Statistical Package for Social Sciences (SPSS) Version 17. Means, proportion and percentages were calculated and frequency tables and graphs were used to describe the demography and characteristics of the population. Pearson's Chi-Square test was applied to observe the association between ANC visit and delivery with suggestive demographic variables. Significance was set at 5%.

RESULTS

The study was carried out among 262 mothers of reproductive age group having at least one child of less than five years of age. Fig 1 shows the age group distribution of the respondents. The mean age of the participants was 27.74 years (SD=5.61). More than 60% of the mothers belonged to the age group of 20-29 years.

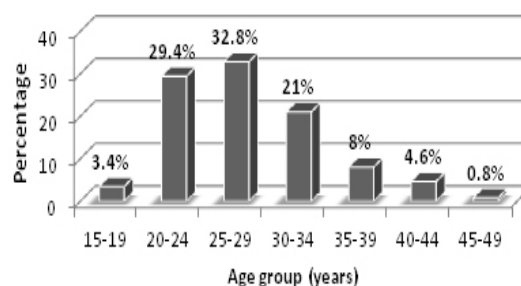


Figure 1. Age distribution of the respondents (N=262).

Majority of the participants were Hindu by religion (74.4%), were non-earning like housewives, students (71.4%), educated up to secondary level (72.1%) and belonged to nuclear families (63.7%). Nearly two third of the respondents were living under US\$ 1.25 per day. Majority (92%) were residing within thirty minute distance from the nearest health facility. Mean age at marriage was 19.20 years (SD=3.73) and mean age at first pregnancy was 20.88 years (SD=4.01). Mean family size was 5.11 (SD=1.91) and

the median number of children per respondent was 2 (inter quartile range 1 and 3). (Table 1)

Table 1. Socio demography of the respondents (N=262).

Characteristic	Frequency	Percentage
Religion		
Hindu	195	74.4
Christian	9	3.4
Buddhist	18	6.9
Kirat	40	15.3
Occupation		
Non Earning	187	71.4
Earning	75	28.6
Education		
Illiterate	48	18.3
Upto secondary	189	72.1
Higher Secondary and Above	25	9.5
Type of family		
Nuclear	167	63.7
Joint	95	36.3
Income (US\$/day)		
Less than 1.25	196	74.8
More than or equal to 1.25	66	25.2
Distance from nearest health facility (minutes)		
Less than 30	241	92.0
More than or equal to 30	21	8.0
Age at marriage (years)		
Less than 18	91	34.7
18 to 30	169	64.5
More than 30	2	8
Age at first pregnancy (years)		
Less than 18	46	17.6
18 to 30	211	80.5
More than 30	5	1.9
Number of children		
<3	193	73.7
≥3	69	26.3

Most of the mothers had ANC visit during the last pregnancy (95%). Among them, 69.5% of the mothers had completed four ANC visits and more than half of the mothers (51.8%) had presented for the first ANC visit in the second trimester of pregnancy. Majority of the mothers had tetanus toxoid (TT) vaccination in the last pregnancy (94.7%) and among them; majority had completed two doses of vaccine (94.4%). Among the 262 mothers, 90% had received iron supplementation in the last pregnancy. Majority of the mothers refrained from smoking (96.9%) and alcohol (95%) in the last pregnancy whereas more than one fourth of mothers visited faith healers (27.5%). Major cause for visiting faith healers was nausea and vomiting (58.3%). (Fig 2)

Almost half of the women had home deliveries (46.6%).

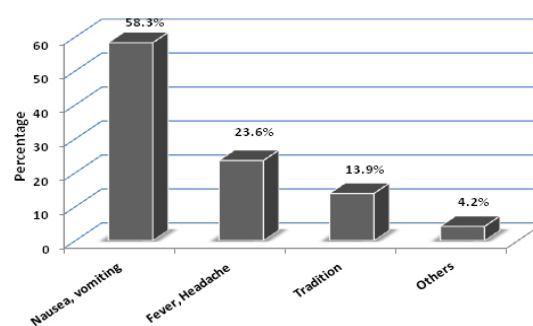


Figure 2. Reasons for visiting faith healers (n=72).

Among the home deliveries, only one third were conducted in presence of skilled birth attendant (33.6%) and safe delivery kit was used in 44.3% of deliveries. Sickle and used blades were used to cut the cord in 3.2% and ash/cow dung was applied on the stump in 2.9% of the deliveries. Only two third of the women went for follow up visit post delivery (33.2%) (Table 2)

Table 2. Practices in home deliveries (n=122).

Characteristic	Frequency	Percentage
Conducted by		
Family/ Relatives	79	64.8
Skilled birth attendant	41	33.6
Others	2	1.6
Use of safe delivery kit		
Yes	54	44.3
No	68	55.7
Cord cut by		
New Blade	144	93.4
Sickel	2	1.6
Used blade	2	1.6
Others	4	3.3
Application on stump		
Antiseptics	44	36.1
Cow dung	1	0.4
Ash	3	2.5
Nothing	71	58.2
Others	3	2.5

Educational status was significantly associated with ANC visit ($p=0.003$) and place of delivery ($p=0.002$). Proportion of ANC visit was significantly less (89.9%) among those mothers having more than or equal to 3 children compared to those who have less (96.9%) ($p=0.045$) and the proportion of home deliveries was significantly more (60.9%) among the mothers who had more than or equal to 3 children compared to those who had less (41.5%) ($p=0.006$). Home deliveries were significantly more among the mothers who were married before 18 years (62.6%) ($p<0.001$) and among the mothers whose age at first pregnancy was less than 18 years (67.4%) ($p<0.001$). (Table 3)

Table 3. Comparison of various characteristics of respondents with ANC visit and place of delivery.

Characteristic	ANC Visit		p value	Place of delivery		p value
	Yes	NO		Home	Health Institute	
Education						
Illiterate	41 (85.4)	7 (14.6)	0.003	32 (66.7)	16 (33.3)	0.002
Literate	208 (97.2)	6 (2.8)		90 (42.1)	124 (57.9)	
Occupation						
Earning	181 (96.8)	6 (3.2)	0.056	89 (47.6)	98 (52.4)	0.598
Non earning	68 (90.7)	7 (9.3)		33 (44)	42 (56)	
Income (US\$/day)						
<1.25	184 (93.9)	12 (6.1)	0.195	98 (50)	98 (50)	0.055
≥1.25	65 (98.5)	1 (1.5)		24 (36.4)	63.6 (42)	
Distance from nearest health facility (minutes)						
<30	229 (95)	12 (5)	1.00	109 (45.2)	132 (54.8)	0.142
≥30	20 (95.2)	1 (4.8)		13 (61.9)	8 (38.1)	
Number of children						
<3	187 (96.9)	6 (3.1)	0.045	80 (41.5)	113 (58.5)	0.006
≥3	62 (89.9)	7 (10.1)		42 (60.9)	27 (39.1)	
Age at marriage (years)						
<18	85 (93.4)	6 (6.6)	0.384	57 (62.6)	34 (37.4)	<0.01
≥18	164 (95.9)	7 (4.1)		65 (38.0)	106 (62.0)	
Age at first pregnancy (years)						
<18	44 (95.7)	2 (4.3)	1.00	31 (67.4)	15 (32.6)	0.002
≥18	205 (94.9)	11 (5.1)		91 (42.1)	125 (57.9)	
Total	249 (95)	13 (5)		122 (46.6)	140 (53.4)	

Figures in parentheses indicate percentage

DISCUSSION

This study aimed to examine the antenatal care and delivery practices and their associated factors among mothers of reproductive age group in rural VDCs of Ilam. It was found that the proportion of antenatal visit done in the last pregnancy were more compared to the national average of 58.3%.⁵ Similar results were seen in studies from Lalitpur district of Nepal and Uganda where majority of the women had attended ANC in the last pregnancy (78.9% and 96% respectively).^{7,8} However, in our study the proportion of mothers completing the recommended four visits dropped to 69.5%. This occurred despite majority of the participants residing within thirty-minute distance from the nearest

health facility (92%). Studies from other VDCs of Nepal and rural community abroad have shown comparable drop in the proportion of women completing four visits.^{8,9} The antenatal period clearly presents opportunities for reaching pregnant women with a number of interventions like prophylactic medication, vaccination, diagnosis and treatment of infectious diseases and health education programs.^{3,10} Thus fulfilling the minimum number of recommended visits is vital for the health of the mothers and of their infants.

In our study, majority of mothers had first ANC visit in the second trimester of pregnancy (51.8%). This finding is comparable to the study from Uganda, where 65% of mothers were in their second trimester at first ANC visit.⁸ The coverage of TT vaccine in our study was high with 94.4% of the vaccinated mothers completing two doses. This figure was higher compared to a study from Kathmandu (72%) and the national average (76.9%).^{5,9} Similarly, proportion of mothers receiving iron tablets was comparable to findings from other studies.⁷ These results could be attributed to the fact that majority of the mothers could access the nearest health facility within thirty minutes from their residence.

It was encouraging to find that majority of the participants refrained from smoking and alcohol consumption during their last pregnancy. More than one fourth of the mothers had visited the faith healers with the common complaints of nausea, vomiting and abdominal pain. Health system in Nepal recognizes both the modern as well as traditional methods of healing. The Western system of healing has not completely replaced the indigenous health system. This is because traditional healing is deeply embedded in wider belief systems and remains an integral part of the lives of most people. Thus, in most developing countries of the world, the traditional medical system continues to exist side-by-side with the modern system, and the majority of the population regularly consults both types of healers. Conclusive evidence has been found from Nepal that these faith healers can play a culturally appropriate and cost-effective role in health education.¹¹

To facilitate health facility deliveries, Government of Nepal provides incentives of NRs. 1500, 1000 and 500 to mothers from mountainous, hilly and Terai regions respectively. Health facility delivery in our study was more than the figures of NDHS 2011, where percentage delivered in the health facility was 28.1%.⁵ Proportion of home deliveries in our study was more compared to the study in Uganda (11%).⁸ Family and relatives were involved in 63.4% of home deliveries whereas skilled birth attendant in 33.6% of them in our study. The practice of using sickle or used blade to cut the cord and application of cow dung, ash over the stump were still prevalent and discouraging. A study from Kenya showed that 52% of all deliveries were conducted at home and skilled birth attendant was present in 48.2% of all the deliveries, whether home or health institute.⁴ It has been seen that across all developing countries, skilled professional assistance at delivery is six times more

common for women who had at least one antenatal care visit that for women who had none, and three times more common for women who had four or more visits than for women who had fewer visits. Women reporting at least four antenatal visits were on average 3.3 times more likely to deliver in medical facility than other women.³ Despite higher percentage of four ANC visits in our study (69.5%), nearly half of the deliveries were conducted at home.

The drop in proportion of four ANC visits and greater proportion of home deliveries were the concerns in this study. Several factors play a vital role in such decrease like geographic constraints, inadequate skilled manpower, and lack of timely follow up of mothers after first ANC and more so, lack of awareness among the mothers themselves. Possible solutions could be increase in the number of outreach clinics (ORC) by the health institution with availability of skilled manpower like Auxillary Nurse Midwives (ANM) in order to reach the mothers who are facing difficulty accessing the services. The incentives provided by the government for completion of ANC visits and institutional deliveries and the fact that every pregnancy is risky needs to be thoroughly conveyed with the help of media. Increment in the amount of incentives provided could be an effective alternative to increase institutional deliveries. Cell phones could be used as an effective tool by the health professional in order to improve the follow up after first ANC.

Our study showed significant association between more number of children with ANC visits and delivery at home. High parity was significantly associated with inadequate antenatal care (<2 visits) (OR=2, CI=1.1-3.5) in a study from eastern Sudan.¹² Multiparous women were more likely for late initiation of antenatal care compared to primipara in a study from New Zealand (OR=1.86, CI=1.38-2.50).¹³ Similar results were seen in a study from Nigeria where more women of high parity delivered at home ($p < 0.05$).¹⁴

Marriage and pregnancy before the age of 18 years were significantly associated with greater proportion of home deliveries in our study (62.6% and 67.4% respectively). Traditional belief that if daughters are married early their lives would be secured is still prevalent in rural Nepal which could have affected this relationship. A study from India reported that young women who had married late (18 years or older) were more likely than those who had married early to have had their first delivery in a health institute (OR=1.4, CI=1.18-1.70).¹⁵ Over 30% of girls in developing countries marry before 18 years of age and one in five women has a child by the age of 18 worldwide. Teenage girls who become pregnant are less likely than adults to access skilled prenatal, childbirth and postnatal care.¹⁶ Teenage pregnancies also increase the risk of adverse birth outcomes that is independent of important known confounders such as socio economic status and level of prenatal care.¹⁷

Our study had a few limitations. Short duration and a small

sample size restricted the generalizability of our findings. The causality behind absence of ANC visit and preference of home delivery could not be established owing to the study design being cross sectional.

CONCLUSION

Early age marriage and pregnancy were still prevalent in the communities studied. Increase in education and awareness among pregnant women regarding importance of adequate antenatal visits and institutional delivery should be prioritized. Counseling sessions could be integrated during ANC visits to increase the institutional deliveries. Population policies should be aimed at reducing proportion of women marrying and giving birth while still in their teens in order to facilitate institutional deliveries.

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