

# Antenatal care practices among the women with children under five-years of age in an eastern Nepal village: A cross sectional study

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## Abstract

**Background:** Antenatal care has proven to be an effective way to reduce maternal mortality and save the life of newborn. Nepal also follows the World Health Organization's recommendations of initiation of four antenatal care visits that has helped in decreasing the maternal mortality of the country. Still, the country has to do a lot in improving the antenatal care provision.

**Objective:** The objective of this study was to find out the antenatal care practices among the women with children less than five years of age in a district of eastern Nepal.

**Methods:** A descriptive cross-sectional study was conducted among residents of Aurabani village of Sunsari district. Non probability convenient sampling technique was used to collect data from 15th January to 30th January, 2015. Data of 100 women having children less than five years of age were collected and analyzed in descriptive and inferential ways.

**Results:** Women with nuclear family are more likely to have antenatal care visits (73.8%) compared to women with joint family (66.7%). The study showed that attendance of antenatal care visits among the educated women was higher (71.8%) than those illiterate (66.7%). In the study, 84.8% of women of primi-gravida completed antenatal care visit which was significantly higher than women with multi gravida (59.3%) ( $p < 0.05$ ). Further, 83.1% of respondents who completed tetanus toxoid injections had not walked <30 meters distance for health services which was significantly higher than those walking >30 meters distance (52.9%). An almost similar trend was found among pregnant women taking iron tablets and vitamin A. Furthermore, walking distance shows stronger association with women taking albendazole during pregnancy ( $p < 0.001$ ).

**Conclusion:** A large percentage of women completed all four recommended antenatal visits. Women and their husbands who were educated placed high importance on antenatal visits. Gravida of the pregnancy was also related to the antenatal care visit. High number of primi-gravida women completed antenatal care visits than women with multigravida. Use of medicines like iron tablets, albendazole tablets, vitamin A and tetanus toxoid injection was directly related with the walking distance to the health center.

**Key words:** Antenatal Care, Delivery, Nepal, Pregnancy, Women

## INTRODUCTION

Global evidence shows that all pregnancies are at risk, and complications during pregnancy, delivery and the postnatal period are difficult to predict<sup>1</sup>. Maternal mortality is unacceptably high in the world. About 830 women die from pregnancy- or childbirth-related complications around the world every day<sup>2</sup>.

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Nepal had one of the highest (850 per 100,000 live births) Maternal Mortality Ratio among South Asian countries in 1990<sup>3</sup>. After implementing the Second Long Term Health Plan (SLTHP-1997-2017), the Government of Nepal started to provide essential health service and medical interventions to all levels and the Maternal Mortality Ratio has been reduced to 281/100,000 per live birth in 2006<sup>3</sup>. Nepal bagged the Millennium Development Award in 2010 for recognition of its achievement<sup>4</sup>.

Antenatal care is globally accepted strategy for reducing modifiable maternal risk factors during pregnancy and has had beneficial impact for the pregnancy

outcome. It is a means of identifying mothers at the risk of delivering a preterm or growth retarded infant and provide supply of available medical, nutritional and educational interventions intended to reduce the risk of low birth weight and other adverse pregnancy outcomes<sup>5</sup>. According to recommendation of United Nations and WHO for pregnant women, women must visit one or more times to the antenatal clinic with skilled health workers to ensure the condition of the child and the mother during pregnancy<sup>6</sup>. Furthermore, four antenatal visits have been recommended by WHO during pregnancy, and the first antenatal visit should be in the first trimester of pregnancy<sup>7</sup>. According to Annual Health Report (2014/15), there are 52% of pregnant women attending at least four ANC visits and 96% of pregnant women attending first ANC among estimated number of pregnancies<sup>8</sup>.

The socio-cultural practices and the religious beliefs prevailing in the communities of Nepal regarding maternal restrictions after delivery and childbirth play a vital role in non-utilization of postnatal care services. Therefore, this study was conducted to find out the antenatal care practices and to find out the association between different socio-demographic variables and prenatal, Antenatal Care visits and postnatal care among residents of Aurabani VDC (Village Development Committee) of Sunsari District, Nepal.

## METHODS

This was the cross-sectional study conducted from 15<sup>th</sup> January to 30<sup>th</sup> January, 2015 among the residents of Aurabani VDC of Sunsari district in Nepal. Altogether 100 women of reproductive age group with at least one child under-five years old were taken as a sample size. Non probability convenient sampling technique was used for data collection. Ethical approval was obtained from the Institutional Research Committee of BP Koirala Institute of Health Sciences.

All the women aged 15 to 49 years from the selected households were included in the study. Women of reproductive age group having a child of more than 5 years old were excluded so as to address the proper breastfeeding practice and minimize the recall bias. After clearly explaining about the objectives of the study, written consents were taken from the participants. Predesigned, semi-structured questionnaires were used for data collection. The questionnaires were pre-tested before administering to the participants. Community women with children under-five years were conveniently identified and the mothers were called for face-to-face interview.

Data was entered in MS Excel 2000. Analysis was done by using statistical software SPSS (Statistical Package for Social Science) 17.0 version. Descriptive statistics (percentage and proportion) was calculated. Chi-square test was applied to find out the significant difference between selected variables and ANC visits. The probability of significance was set at 5% level of significance and 95% confidence interval.

## RESULT

Table 1 shows 71% of respondents attended Antenatal Care (ANC) visits. The findings revealed that women with nuclear family are more likely to have ANC visits (73.8%) compared to women with joint family (66.7%). The study showed that attendance of ANC visits among the educated women was higher (71.8%) than those illiterate (66.7%). The attendance of ANC visits among the women whose husband was educated was higher (71.6%) than those illiterate (60%). Almost 82.1% of women involved in agriculture completed four ANC visit where as 92.9% of the respondents whose husband were foreign employed had completed all four ANC visit. No association was found with the ANC visits.

Table 2 shows that 74.7% of respondents who had completed ANC check-up had not walked long distance for ANC visit while 52.9% who had completed four ANC had walked long distance for the same and the association was non-significant. 84.8% of women of primi-gravida completed ANC visit which was significantly higher than women with multi gravida (59.3%) ( $p < 0.05$ ). Almost 73.3% of respondents who had completed all four ANC visits during pregnancy had home delivery whereas 70.6% who completed all ANC visit had their delivery at health institution. Among 71.1% of women who had completed four ANC visits had no pregnancy related complications and association was not significant.

Almost 78% of the pregnant women took all the doses of the tetanus toxoid (TT) injections, 90% received Albendazole tablets, about 96% received iron tablets and 73% received vitamin A. This table shows that 83.1% of respondents who completed TT injections had walked less than 30 minutes for health services which was significantly higher than those having long walking distance (52.9%) ( $p < 0.05$ ). Almost similar trend was found among pregnant women taking iron tablets and vitamin A. Furthermore, walking distance shows stronger association with women taking Albendazole during pregnancy ( $p < 0.001$ ) (Table 3).

**Table 1: Association between Socio-demographic characteristics and Antenatal care Visit**

Characteristics	Categories	ANC Visits				Total Number	p-value
		Not completed		Completed			
		Number	Percent	Number	Percent		
Family type	Joint	13	33.3	26	66.7	39	0.445
	Nuclear	16	26.2	45	73.8	61	
Mother education	No	5	33.3	10	66.7	15	0.688
	Yes	24	28.2	61	71.8	85	
Father education	No	2	40.0	3	60.0	5	0.578
	Yes	27	28.4	68	71.6	95	
Mother occupation	Agriculture	5	17.9	23	82.1	28	0.477
	Service	1	25.0	3	75.0	4	
	House maker	22	33.8	43	66.2	65	
	Business	1	33.3	2	66.7	3	
Father occupation	Agriculture	7	36.8	12	63.2	19	0.370
	Service	5	27.8	13	72.2	18	
	Labor	11	34.4	21	65.6	32	
	Foreign employment	1	7.1	13	92.9	14	
	Business	5	29.4	12	70.6	17	
<b>Total</b>		<b>29</b>	<b>29.0</b>	<b>71</b>	<b>71.0</b>	<b>100</b>	

**Table 2: Association between delivery and post-natal components with ante-natal care visits**

Characteristics	Categories	ANC Visit				Total Number	p-value
		Not completed		Completed			
		Number	Percent	Number	Percent		
Long Walking distance	No	21	25.3	62	74.7	83	0.072
	Yes	8	47.1	9	52.9	17	
Parity	Primi	7	15.2	39	84.8	46	0.005
	Multi	22	40.7	32	59.3	54	
Delivery place	Home	4	26.7	11	73.3	15	0.829
	Health Institution	25	29.4	60	70.6	85	
Delivery mode	Normal	25	29.4	60	70.6	85	0.829
	Cesarean Section	4	26.7	11	73.3	15	
Pregnancy related problems	No	26	28.9	64	71.1	90	0.941
	Yes	3	30.0	7	70.0	10	
Family Planning advice	No	21	27.6	55	72.4	76	0.592
	Yes	8	33.3	16	66.7	24	
Colostrum milk	No	0	0.0	4	100.0	4	0.192
	Yes	29	30.2	67	69.8	96	
<b>Total</b>		<b>29</b>	<b>29.0</b>	<b>71</b>	<b>71.0</b>	<b>100</b>	

**Table 3: Association between walking distance and drugs regimen taken**

Characteristics	TT Dose				Total	p-value
	Not completed		Completed			
	Frequency	Percent	Frequency	Percent		
<b>Walking distance</b>						
< 30 minutes	14	16.9	69	83.1	83	0.006
>30 minutes	8	47.1	9	52.9	17	
<b>Total</b>	<b>22</b>	<b>22.0</b>	<b>78</b>	<b>78.0</b>	<b>100</b>	
<b>Albendazole</b>						
< 30 minutes	4	4.8	79	95.2	83	0.001
>30 minutes	6	35.3	11	64.7	17	
<b>Total</b>	<b>10</b>	<b>10.0</b>	<b>90</b>	<b>90.0</b>	<b>100</b>	
<b>Iron Tablets</b>						
< 30 minutes	1	1.2	82	98.8	83	0.002
>30 minutes	3	17.6	14	82.4	17	
<b>Total</b>	<b>4</b>	<b>4.0</b>	<b>96</b>	<b>96.0</b>	<b>100</b>	
<b>Vitamin A</b>						
< 30 minutes	18	21.7	65	78.3	83	0.008
>30 minutes	9	52.9	8	47.1	17	
<b>Total</b>	<b>27</b>	<b>27.0</b>	<b>73</b>	<b>73.0</b>	<b>100</b>	

## DISCUSSION

The Safe Motherhood Program in Nepal has made a significant progress since the initiation in 1997<sup>9</sup>. The national Safe motherhood plan (2002-2017) has been revised so as to ensure coordinated efforts among various stakeholders i.e. government and non government, national and international organizations that are involved in safe motherhood and neonatal health programming. Service coverage has grown along with the development of policies and protocols. Also, the revised Aama guidelines of safe motherhood program implemented since FY 2069/70 specifies the services to be funded, the tariffs for reimbursement and the system for claiming and reporting on free deliveries each month. So mothers are encouraged to make at least four antenatal visits<sup>8</sup>. The function of antenatal care in preventing problem for mothers and babies depends on an operational continuum of care with accessible, high quality care before and during pregnancy, childbirth, and the postnatal period. It also depends on the support available to help pregnant women reach services, particularly when complications occur. An important element in this continuum of care is effective antenatal care<sup>10</sup>. Nepal annual health report 2071/2072 shows that there are 52% of pregnant women attending at least four ANC visits<sup>8</sup>. Nepal follows the World Health Organization's recommendations of initiation of ANC within the first four months of pregnancy and at least four ANC visits during the course of an uncomplicated pregnancy<sup>11</sup>.

In this study, 70% of the women completed four ANC visits which might be due to accessibility of health facilities less than 30 meters walking distance in the Aurabani Village Development Committee and also due to improved education level of the women and awareness regarding the health facilities. Several studies found that physical proximity of healthcare services; especially in the developing countries play an important role in utilization of health service<sup>12, 13, 14</sup>.

In our study, women in nuclear family had more ANC visits (73.8%) compared to women in Joint family (66.7%). Similar study done Dahal RK shows that mother of joint families had higher. ANC visits compared to nuclear family mothers ( $p = 0.004$ )<sup>15</sup>. In our study husband being the head of house could have created conducting environment for his wife for completing all ANC visits. In contrast, convincing in-laws in joint family would be more challenging because of existing cultural barriers in Nepal. This study reveals that education of women and their husband are the most significant determinant for increasing utilization of number of ANC visits. Several studies have found a strong association between education and utilization of maternal health services<sup>16</sup>. In another similar study education of husband also shows stronger association with ANC visits ( $p < 0.001$ )<sup>17</sup>.

In our study, those who had to walk >30 minutes distance for health facility had more number of ANC visits. In a study done in Kenya, those living at most 60 minutes

travel-time from the health facility were seven times more likely to have early ANC initiation and five times more likely to have at least four ANC attendance than those living more than 60 minutes travel-time from the health facility. Autonomy was linked to early initiation of ANC visit<sup>18</sup>.

Our study results showed that 84.8% women with first pregnancy made all antenatal visits whereas 59.3% women of second and more pregnancy made all antenatal visits. In the study done by Pradhan A, 100% women with first pregnancy made all antenatal visits. But 78% women with second pregnancy made it four or more times. The disparity in result might be due to geographical variation of the two places<sup>19</sup>.

Around 70.6% of women who made four ANC visits delivered in health institution in our study where as in the similar study done in Kathmandu by Pradhan A, 90% of women who made four or more ANC visits delivered in hospital. But the difference was not found to be statistically significant<sup>19</sup>. Our study shows that 73.3% of those who had gone through Cesarean section as a mode of delivery had completed all four ANC visit. In this study, there was no association between pregnancies related complication and ANC visits. Only 3 (10.34%) of respondents who had done all ANC visit had pregnancy related complications. World Health Organization recommends that a woman without complications also has to visit at least four ANC to access sufficient antenatal care so as to make possible for detecting complications associated with a pregnancy and if any complication occurs, more frequent visits are advised and admission to a health facility may be necessary<sup>20</sup>.

Almost 78% of the pregnant women took all the doses of the tetanus toxoid (TT) injections, 90% received albendazole tablets, about 96% received iron tablets and nearly 73% received vitamin A. In the study 83.1% of respondents who completed TT injections hadn't walked long distance for health services which was significantly higher than those having long walking distance (52.9%). Almost similar trend was found among pregnant women

taking iron tablets and vitamin A. Nepal annual health report 2014/2015 reveals that 52% of pregnant women received both the doses of Tetanus Toxoid (TT2+), 52% of pregnant women received iron and Folic acid tablets or syrup during their last pregnancy, 49% of postpartum mothers received Vitamin A supplements<sup>8</sup>. The findings of our study shows higher percentage than the national figure which might be because the Annual Health Report represents nationwide coverage which is obviously different from a particular Village Development Committee. Furthermore, 90% of the pregnant women took Albendazole tablet during pregnancy in this study. Similar study shows that 57.7% of pregnant women had taken Albendazole tablet during pregnancy<sup>21</sup>. Walking distance to the health facility and transportation availability is an important factor for the accessibility of health services.

## CONCLUSION

A large percentage of women completed all four recommended antenatal visits which show the changing trends of Antenatal Care practices in Eastern Region of Nepal. Women and their husbands who were educated placed high importance on antenatal visits. Gravidity of the pregnancy was also related to the ANC visit. High number of primi-gravida women completed ANC visits than women with multigravida. Use of medicines like iron tablets, Albendazole tablets, Vitamin A and Tetanus Toxoid injection was directly related with the walking distance to the health center. Distance to the health center is the determining factors for accessing the ANC services especially in case of country like Nepal. Current efforts of Government of Nepal to encourage mothers for four antenatal checkups, monitoring system in place to track the timing of ANC visits are effective ways for increasing antenatal care practices as well as decreasing the maternal mortality and morbidity. The sample size of the study is small, and can be considered as a limitation.

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