

Original Article**Knowledge and Practice Regarding Antenatal Care Among Pregnant Women Attending in a Government Hospital, Biratnagar****Mamta KC ^{*1}, Muna Rana ², Bimala Kumari Shah ², Nyamika KC ¹, Smita Bhattarai ¹**¹ Department of Nursing, Nobel Medical College and Teaching Hospital, Biratnagar, Nepal² Department of Nursing, Maharajgunj Nursing Campus, Kathmandu, NepalArticle Received: 15th October, 2025; Accepted: 27th January, 2026; Published: 30th June, 2026**DOI: <https://doi.org/10.3126/jonmc.v15i1.96243>****Abstract****Background**

Antenatal care is one of the basic components of maternal care, on which the lives of mothers and babies depend. It is a key strategy to decrease maternal mortality in low-resource settings. The aim of the study was to assess knowledge and practice regarding antenatal care among pregnant women attending in a government hospital, Biratnagar.

Materials and Methods

A descriptive cross-sectional research design was adopted to conduct this study. The study was carried out in Koshi zonal hospital, Biratnagar among 190 pregnant women attending antenatal out-patient department selected by non-probability convenient sampling technique. Data was collected by using structured interview schedule. Data were analyzed using descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (chi-square).

Results

Finding revealed that majority (85.8%) and more than four-fifths (86.3%) of the respondents had adequate level of knowledge and practice regarding antenatal care respectively. Significant association was seen between level of knowledge and different socio-demographic variables namely place of residence ($p=0.048$), religion ($p=0.041$), educational status of women ($p=0.001$) and economic status ($p=0.02$). Also, level of practice regarding antenatal care was significantly associated with educational status of women ($p<0.001$) and educational status of husband ($p=0.003$).

Conclusion

Most of the primi pregnant women had adequate level of knowledge and practice regarding antenatal care. It also showed that level of knowledge had significant association with place of residence, religious group, educational status of women, and socio-economic status. Similarly, no significant association between level of practice and selected socio demographic variables except educational status of women and husband.

Keywords: *Antenatal care, Knowledge, Pregnant women*

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Introduction

Antenatal care (ANC) is defined as the systematic care delivered by qualified health professionals to women during pregnancy with the aim of safeguarding the health of both the mother and unborn child [1]. It focuses on enhancing maternal physical, psychological, and social well-being through health education on nutrition, hygiene, and childbirth, as well as identifying and managing pregnancy-related risks [2]. Although substantial progress has been made globally, maternal mortality continues to be a major public health concern, particularly in low- and middle-income countries [3]. Consistent with global trends, maternal mortality in Nepal decreased from 539 to 239 per 100,000 live births. Despite this progress, Nepal's maternal and neonatal mortality rates remain among the highest in the region [4]. Misconception, lack of interest or information, have significant barriers to the management and access to reproductive health services [5]. Evidence has shown that adequate antenatal knowledge and care during pregnancy improve the maternal mortality and morbidity [6].

Despite the availability of essential safe motherhood services, few studies have explored this aspect of maternal health in Nepal. Therefore, this study aims to examine the level of knowledge and practice regarding antenatal care among pregnant women in a government hospital of Biratnagar, Nepal.

Materials and Methods

The descriptive cross-sectional study was conducted in the antenatal out-patient department (OPD) of Koshi Zonal Hospital, Biratnagar from 1st September to 27th September 2019 following ethical approval from the institutional review committee (IRC) of Institute of Medicine. Verbal and written informed consent were obtained from all the respondents before data collection. The study included all the stable (free from diagnosed medical disease condition and no any obstetric high risk) primi pregnant women of third trimester attending in an antenatal out-patient department of Koshi Zonal hospital and

willing to participate were included in the study. Those who were mentally unstable and would not speak and listen were excluded from the study. The sample size was calculated using the formula z^2pq/d^2 where z = Standardized deviate at 95% confidence level i.e 1.96, prevalence (p)=0.58 [7], q = 0.42 and maximum tolerable error was taken at 5% i.e. 0.05. Now putting this value in the formula, the sample size was 374. The calculated sample size was then adjusted for finite population using the formula $n=n_0/1 + (n_0-1)/N$ where, n_0 was 374 and N was 320. The new sample size was 173. To reduce non-response error additional 10% was taken so; the sample size of the study was 190. Respondents were selected using non-probability convenience sampling technique.

Data was collected using structured interview schedule through face-to-face interviews in a separate room. The collected data was analyzed using SPSS version 20. For descriptive statistics, frequency, percentage, mean, and standard deviation were calculated, and for inferential statistics, chi-square was calculated.

Results

Table number 1 depicts that majority (84.7%) of the respondents were of the age group more than 20 and the mean age was 21.64 ± 2.84 . Regarding place of residence, more than half (60.5%) were from rural area. Likewise, most (91.6%) of the respondents belong to Hindu religion. In relation to ethnicity, nearly three-fifths (56.3%) of the respondents belong to Madhesi group. Similarly, more than two third (74.7%) of them belong to joint family. Majority (86.8%) of the respondents can read and write. In regard to occupation, more than four-fifths of the respondents (86.3%) were housewife. With regard to the educational background of respondents' husbands, almost nine out of ten (89.5%) were literate. In terms of occupation of respondent's husband, one third (33.7%) of them were labour. Concerning with the economic status, more than one third (40%) of respondents had main income sufficient for 1 year and surplus.



Table 1: Socio-demographic Characteristics of Respondents n=190

Variables	Number	Percentage
Age Group (in years)		
≤ 20	29	15.3
>20	161	84.7
Mean age (in years) ±SD= 21.64±2.84		
Place of Residence		
Rural	115	60.5
Urban	75	39.5
Religion		
Hindu	174	91.6
Others (Buddhist, Christian, Islam)	16	8.4
Ethnic Group		
Madhesi	107	56.3
Others(Brahmin/Chhetri,Muslim,Dalit)	83	43.7
Type of Family		
Joint	142	74.7
Nuclear	48	25.3
Educational Status of Women		
Can read and write	165	86.8
Cannot read and write	25	13.2
Occupation of Women		
Housewife	164	86.3
Others (Government employee, labor, Farmer)	26	13.7
Educational Status of Husband		
Can read and write	170	89.5
Cannot read and write	20	10.5
Occupation of Husband		
Labor	64	33.7
Employee	72	37.3
Business	14	7.4
Homemaker	23	12.1
Farmer	18	9.5
Economic Status		
Income enough for 1 year and surplus	76	40
Income enough for less than 6 months	72	37.9
Income enough for 6-12 months	42	22.1

Table 2: Respondents' Level of Knowledge on Antenatal Care n=190

Knowledge level	Number	Percentage
Adequate (≥ 50%)	163	85.8
Inadequate (< 50%)	27	14.2

Table no 2 shows majority (85.8%) of the respondents had adequate knowledge on antenatal care, while some of them (14.2%) had inadequate knowledge.

Table 3: Respondents' Level of Practice on Antenatal Care n=190

Practice level	Number	Percentage
Adequate (≥ 50 %)	164	86.3
Inadequate (<50 %)	26	13.7

Table no 3 depicts majority (86.3%) of the respondents had adequate practice levels.

Table 4: Association between Level of Knowledge and selected Socio-demographic Variables

Variables	Level of Knowledge		p-value
	Adequate No. (%)	Inadequate No. (%)	
Age Group (in years)			
≤20	25(86.2)	4(13.8)	1.000¥
>20	138(85.7)	23(14.3)	
Place of Residence			
Rural	94(81.7)	21(18.3)	0.048*
Urban	69(92)	6(8)	
Religion			
Hindu	152(87.4)	22(12.6)	0.041*
Others	11(68.8)	5(31.3)	
Ethnic Group			
Madhesi	88(82.2)	19(17.8)	0.143
Others	75(90.4)	8(9.6)	
Type of Family			
Nuclear	44(91.7)	4(8.3)	0.267¥
Joint	119(83.8)	23(16.2)	
Educational Status of Women			
Can read and write	147(87.1)	18(10.9)	0.001*
Cannot read and write	16(64)	9(36)	
Educational Status of Husband			
Can read and write	148(87.1)	22(12.9)	0.144
Cannot read and write	15(75)	5(25)	
Occupation of Husband			
Employed	142(85)	25(15)	0.419
Unemployed	21(91.3)	2(8.7)	
Economic Status			
Income enough for less than 6 months	66(91.6)	6(8.3)	0.02*
Income enough for 6 -12 months	37(88)	5(12)	
Income enough for 1 year and surplus	57(75)	19(25)	

* Significance level at <0.05 ¥ Continuity correction

The results indicate a significant association between respondents' level of knowledge and various variables. Knowledge levels were significantly associated with place of residence (p=0.048), religion (p=0.041), educational status of women (p=0.001), and economic status (p=0.02).



Table 5: Association between Level of Practice regarding Antenatal Care and selected Socio-demographic Variables n=190

Variables	Level of Practice		p-value
	Adequate No. (%)	Inadequate No. (%)	
Age Group (in years)			
≤20	25(86.2)	4(13.8)	1.000¥
>20	139(86.3)	22(13.7)	
Place of Residence			
Rural	95 (82.6)	20 (17.4)	0.066
Urban	69(92)	6(8)	
Ethnic Group			
Madhesi	89 (83.2)	18 (16.8)	0.153
Others	75 (90.4)	8(9.6)	
Type of Family			
Nuclear	44 (91.7)	4 (8.3)	0.315¥
Joint	120 (84.7)	22 (15.5)	
Educational Status of Women			
Can read and write	148 (89.7)	17(10.3)	<0.001*
Cannot read and write	16 (64)	9 (36)	
Educational status of Husband			
Can read and write	151 (88.8)	19 (23.2)	0.003*
Cannot read and write	13 (65)	7(35)	
Occupation of Women			
Employed	25 (96.2)	1(3.8)	0.116¥
Unemployed	139 (84.8)	25(15.2)	
Occupation of Husband			
Employed	142 (85)	25(15)	0.165¥
Unemployed	22(95.7)	1(4.3)	
Socio-Economic Status			
Income enough for less than 6 months	63 (87.5)	9(12.5)	0.785
Income enough for 6 -12 months	37 (88.1)	5(11.9)	
Income enough for 1 year and surplus	64(84.2)	12(15.8)	

* Significance level at 0.05 ¥ Continuity correction

The findings reveal a significant association between respondents' level of practice and both the educational status of women ($p < 0.001$) and the educational status of their husbands ($p = 0.003$).

Discussion

In this study, level of knowledge was classified into two categories on the basis of total scores where (85.8%) had adequate knowledge and (14.2%) had inadequate knowledge. The finding was similar with the study conducted in Jaipur, India which showed (86%) adequate knowledge [8]. However, the finding was contrast with the study done in North Delhi of India where only (17%) of the respondents had good knowledge [9]. The finding of the study revealed that (86.3%) of the respondents had adequate practice regarding antenatal care. The result was in consistent to the study of Pune, Maharashtra

which showed that (69.3%) had adequate practices [7].

The study revealed that there was significant association between level of knowledge and practice with p-value 0.001 at 95% CI. This finding was in line with the study done in Pune, Maharashtra which showed significant association between knowledge and practice with p-value 0.001 at 95% CI [7]. In contrast to the study, the study conducted in Gujarat, India revealed that there was no significant association between knowledge and Practice ($p > 0.05$) [10]. In this study there was no any significant association between level of knowledge and age of respondents ($p = 1.000$) but this finding was contrast with the study conducted in Gujarat, India which showed significant association between level of knowledge and age [10]. The study finding revealed that there was statistically significant association between respondent's level of knowledge with place of residence ($p = 0.048$) which was similar with the study done in Imphal East which revealed significant association [11].

No significant association was observed between level of knowledge and type of family ($p = 0.267$) in the current study. This finding is similar with the study done in Pune, Maharashtra which showed no significant association between level of knowledge and type of family with p-value 0.353 [7]. The study revealed that there was statistically significant association between level of knowledge and educational status of respondents ($p = 0.001$). This finding was supported with the study in Gujarat, India which showed significant association between level of knowledge and educational status of respondents [10]. Likewise, the study showed that there was statistically significant association between level of knowledge and economic status of respondents' husband with p-value 0.02. This study finding was similar with the study done in Gujarat which showed significant association between level of knowledge and economic status [10].

The study revealed that there was statistically significant association between level of practice and educational status of respondents with p-value < 0.001 . This finding was supported with the study in Pune, Maharashtra which showed significant association between level of practice and educational status of respondents [7]. The study showed that there was no significant association between level of practice and economic status of respondents with p-value 0.785 but



finding was opposite with the study done in Gujarat, India which showed significant association between level of practice and economic status with $p=0.000$ [10].

Conclusion

Based on study findings, it is concluded that most of the primi pregnant women have adequate level of knowledge and practice regarding antenatal care. There is statistically significant association between level of knowledge and practice. It also shows that level of knowledge has significant association with place of residence, educational status of women, and socio-economic status. Similarly, there are no significant association between level of practice and selected socio demographic variables except educational status of women and educational status of husband. Still continuous health education program regarding antenatal care might be necessary to maintain this level.

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Conflict of interest: None.

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