

Factors Affecting the Utilization of Antenatal Care Service among Mothers Having Under 2 Years Children**Raj Kumar Shahi,¹ Jiwan Poudyal,¹ Hari Prasad Upadhyay,² Sumitra Parajuli,³ Prativa Sedain⁴**¹Department of Public Health, Shree Medical and Technical College, ²Department of Statistics, Birendra Multiple Campus, ³Bharatpur Hospital Nursing College, Bharatpur, Chitwan, Nepal, ⁴Department of ENT, BP Koirala Memorial Cancer Hospital, Bharatpur, Chitwan, Nepal.**ABSTRACT****Background:** The Antenatal care period is the time between immediately conceptions after to before birth baby. The objective of this research is to find out factor associated with ANC service utilization by mothers.**Methods:** Community based analytical cross sectional study was conducted in Junichande rural municipality, Jajarkot among mother have child under two years of age data is collected through interview method. Descriptive analysis and chi-square test were performed.**Results:** This study shows more than half of the (58.8%) mother had completed ANC. Ethnicity, education level, husband occupation, availability of essential drugs and equipment, satisfaction behavior of health worker and proper physical infrastructure are the factors that influence the ANC care utilization which were found significantly associated with ANC utilization. The main reason for not receiving ANC among mother were lack of awareness.**Conclusions:** This study suggest health care providers and policy maker to make aware mothers on maternal complication to prevent and neonatal mortality and increase ANC utilization.**Keywords:** ANC utilization; Knowledge; Jajarkot.**Received:** 9th January 2023**Accepted:** 17th June 2023**Published:** 6th June 2023**INTRODUCTION**

Antenatal care (ANC) among pregnant women is one of the important factors in reducing maternal morbidity and mortality. Unfortunately, many women in developing countries do not receive such care. Show that a high utilization rate of the ANC service results in lowering the risk of maternal mortality.¹The provision of antenatal care (ANC) services brings with it a positive impact on pregnancy as it enables the identification of risk factors and early diagnosis of pregnancy complications like preterm delivery and appropriate management. The positive impact can be achieved through screening for pregnancy problems, assessing pregnancy risk, treating problems that may arise during the antenatal period, giving medication that may improve pregnancy outcomes, providing information to the pregnant woman, preparing physically and psychologically for childbirth and parenthood² Globally around 2, 89000 women die due to maternal causes annually. Among them about 50-70% maternal death occurred with post natal period. Likewise, 2.9 million neonatal deaths occurs in the first week of annually in the global. It is sad to say that 90% of these maternal and neonatal death occur in middle and low income countries.³ In Nepal, maternal mortality ratio is 239

deaths per 100000 live births and neonatal mortality is 21 deaths per 1000 live birth the level of antenatal care coverage remains low despite the stakeholder's effort. According to NDHS 2016, only 69 percent of women make 4 or more antenatal visits during then pregnancy. According to the proportion of mothers attending 4 ANC visits as per the protocol recommended by Annual report declined from 53 percent in 2076/77. It is important to note that proportion of women attending 4 ANC has always been low compared to other safe motherhood indicators.⁴

World Health Organization has recommended that pregnant women should have their first contact in the first 12 weeks' gestation, with subsequent contacts taking place at 20, 26, 30, 34, 36, 38- and 40-weeks' gestation. Hence, a minimum of eight contacts is recommended to reduce perinatal mortality and improve women's experience of care. In addition, ANC along with family planning. In addition, ANC along with family planning obstetric care, is a key element of the package of services aimed at improving maternal and newborn health.² The main reasons for not attending an antenatal visit by 38.9% of mothers were due to inadequate knowledge regarding obstetric complication and availability of free safe motherhood services

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across the public hospitals. Furthermore, 27.7% of the respondents indicated that they did not face any problem/complication.⁵ The objective of this research is to find the Prevalence of women who visit for antenatal care services and to determine the factors the utilization of antenatal care services.

METHODS

A community base cross sectional study was conducted among the mothers having children under 2 years. This study was conducted in Junichande Rural Municipality ward no. 1, 2, 3, 4 and 11 of Jajarkot District. Ethical approval was taken from Institutional review committee of Shree Medical and Technical College (Ref No.). The report of NDHS showed that the prevalence rate of antenatal care service was 69%. Sample size was calculated by taking 95% of confidence interval and 7% margin of error and using Cochran's formula as $n = Z\alpha^2 pq / d^2 = (1.96)^2 \times 0.69 \times 0.31 / (0.07)^2 = 285$. By adding 10% non-response error the optimal sample size of this research was 313. Sample was selected by using purposive sampling technique. Self-structured questionnaire was used for data collection and then collected data was check for completeness, accuracy and then entered and analyzed using SPSS 20. Data was analyzed using descriptive and inferential statistics. In the descriptive statistics for categorical variables frequency and percentage was calculate. While for continuous variable mean and standard deviation was calculated. In the inferential to find the association between prevalence of work place violence with selected sociodemographic variables Chi-square test was used. p-value <0.05 was considered as statistically significant.

RESULTS

Regarding age (66.2%) respondents were from 20 – 29 years age groups where maximum mothers were Hindu i.e. 91.4% and 44.8% mothers belong to Chhetri ethnicity. Similarly highest percentage of the respondent, 41.6% have nuclear family type. The Study found that 43.8 % mothers were literate and about more the two third mothers i.e. 77.2% were found involved in agriculture occupation followed by business 12.4 %. Considering husband education level, it was found the 41.2% husband of respondent were literate. Where they too were found to be involved in agriculture possessing 41.2%. Majority of respondents' income was sufficient to feed them up to 6-12 months that holds 62.9% in total (Table 1).

Above table illustrate that time taken to reach the nearest health facilities by respondent was more

Table 1. Socio- demographic characteristics of respondents (n= 315)

Variable	Frequency	Percent
Age in years		
<20	19	6
20 -29	208	66
30 -39	73	23.2
40 & above	15	4.8
Religion		
Hindu	288	91.4
Christian	26	8.3
Muslims	1	3
Ethnicity		
Dalit	86	27.3
Brahmin	50	15.9
Janajati	38	12.1
Chhetri	141	44.8
Types of family		
Nuclear	131	41.6
Joint	120	38.1
Extended	64	20.3
Education level of respondent		
Illiterate	45	14.3
Literate	138	43.8
Primary level	99	31.4
Secondary level	30	9.5
Higher secondary level & above	3	1
Occupation of respondent		
House wife	17	5.4
Business	39	12.4
Agriculture	243	77.2
Labor	2	0.6
Service	14	4.4
Family income		
Less than 6 month	76	24.1
6 -12 month	198	62.9
More than 12 month	41	13

than 15 minutes i.e. 53.3%. The findings showed, 93.7% of the respondents reported availability of 24 hours maternal health service at nearest health facility. Similarly, 61.9% respondent told that health worker was always available in health facility 61.9% always available simultaneously 67.7% were fully satisfied from their behavior. However most of them found that the service was average. In addition 56.8% respondent reported that essential drugs and equipment's were always available. Beside, majority 71.1% respondents claimed existence of sufficient proper physical infrastructure at health facility. Majority, 58.8% of respondent have completed ANC checkup as government protocol and 91.1% have ANC card. Most of the ANC was performed by nurse (91.7%) at health post indicating 85.0%. It indicates that 98.9% receive iron tablet

Table 2. Health service related factors (n=315)

Variable	Frequency	Percentage (%)
Time to reach nearest HF		
≤15 then minutes	146	46.3
>15 then minutes	169	53.3
Availability of MHS		
Yes	296	94
No	19	6
Availability of essential drugs & equipment		
Always	179	56.8
Sometime	84	26.7
Never	52	16.5
Availability of health service		
Excellent	107	34
Good	68	21.6
Average	135	42.9
Poor	3	1
Don't know	2	0.6
ANC as protocol		
Yes	180	58.8
No	135	41.2
Have ANC card		
Yes	164	91.1
No	16	8.9
Place of ANC checkup		
PHC/ ORC	2	1.1
Health post	153	85
Government hospital	6	3.3
PHCC	18	10
Private hospital	1	0.6
ANC checkup by health worker		
Doctor (HA/AHW)	15	8.3
Nurse	165	91.7
Receive iron tab		
Yes	178	98.9
No	2	1.1

during ANC. Decision for ANC was made by both husband and wife comprising 58.3%. Majority reported that service received during ANC visit was immunization of mother (31.7%) followed by iron and folic supplement (21.1%), personal hygiene and nutritional education (20.6%), counsel on exclusive breast feeding (15.6%) and management of complication (11.1%) whereas 42.2% reported lack of awareness was the prime reason for not doing ANC visit (Table 2).

It is found that ANC service utilization was significantly associated with ethnicity and education level of the respondents i.e. ($p < 0.05$) among above socio-demographic characteristics (Table 3). There were significant association ANC service utilization by mother with Satisfaction from behavior of health worker and proper physical infrastructure ($p < 0.05$) in health related variable (Table 4).

Table 3. Association of socio- demographic characteristics of mother with ANC service utilization

Variable	ANC checkup as protocol		P-value
	Yes (%)	No (%)	
Age of respondent			
< 20	9 (47.4)	10 (52.6)	0.813
20 -29	116 (55.8)	92 (44.2)	
30 -39	43 (58.9)	30 (41.1)	
40 & above	10 (66.7)	5 (33.3)	
Religion of respondent			
Hindu	164 (57.1)	124 (42.9)	0.652
Non Hindu	15 (54.8)	12 (46.2)	
Ethnicity of respondent			
Dalit	31 (36.0)	55 (64.0)	0.000*
Brahmin	30 (60.0)	20 (40.0)	
Janajati	19 (50.0)	19 (50.0)	
Chhetri	99 (70.2)	42 (29.8)	
Types of family			
Nuclear	69 (52.7)	62 (47.3)	0.315
Joint	69 (57.5)	51 (42.5)	
Extended	41 (64.1)	23 (35.9)	
Respondent of education level			
Illiterate	6 (13.3)	39 (86.7)	0.000*
Literate	78 (56.5)	60 (43.4)	
Basic level	65 (65.7)	34 (34.3)	
Secondary level	30 (90.9)	3 (9.1)	
Occupation of respondent			
House wife	12 (70.6)	5 (29.4)	0.266
Business	27 (69.2)	12 (30.8)	
Agriculture	130 (53.5)	113 (46.5)	
Service	10 (62.5)	6 (37.5)	
Husband education level			
Illiterate	5 (35.7)	9 (64.3)	<0.001
Literate	67 (50.6)	65 (49.2)	
Basic level	53 (52.0)	49 (48.0)	
Secondary level	45 (78.9)	12 (21.1)	
Higher & above	9 (90.0)	1 (10.0)	
Family income			
< 6 month	39 (51.3)	37 (48.7)	0.208
6 -12month	112 (56.6)	86 (43.4)	
>12 months	28 (68.3)	13 (31.7)	

DISCUSSION

The study reveal that among 315 mother, 58.8% mother had completed ANC checkup as per government protocol whereas 41.2 % hadn't completed ANC which is quite lower. This result seems to be improve over an annual report where there were only 53% mother who had complete ANC visit as

Table 4. Association of health service related factors with ANC service utilization by mother

Variable	ANC checkup		P-value
	Yes (%)	No (%)	
Time to reach nearest HF			
< 15 minutes	88(60.0)	58 (39.4)	0.357
≥ 15 minutes	92 (54.4)	77 (45.6)	
Availability MHS			
Yes	174 (58.8)	122 (41.2)	0.05
No	6 (26.3)	13 (73.7)	
Availability of essential drugs & equipment			
Always	111 (62.0)	68 (38.0)	0.058
Sometime	40 (46.4)	44 (53.60)	
Never	29 (55.8)	23 (44.2)	
Availability of service			
Excellent	63 (58.9)	44 (41.1)	0.571
Good	41 (60.3)	27 (39.7)	
Average	74 (53.2)	65 (46.8)	
Satisfaction from Behavior of HW			
Fully	136 (63.8)	77 (36.2)	0.000*
Partially	43 (42.2)	59 (57.8)	
Proper physical infrastructure			
Sufficient	137 (61.2)	87 (38.8)	0.015*
Insufficient	42 (42.2)	49 (53.8)	

per protocol.⁴ Comparatively, ANC coverage of in this study my (58.8%) was quite lower as compared with the NDHS 2016 and study conducted Sunsari district.^{14,11} Another study conducted in Bara district Nepal shows that only 69% mother had completed four ANC visit as protocol which was quite higher than my finding. The difference proportion of result in present and previously done study may be due to difference in study setting, study population and may be due to different time frame. Some similar international studies also shows high prevalence of ANC service utilization than my finding. A community based cross sectional study conducted in Debris Birhan Town, Ethiopia revealed that from the total respondents 83.3% mothers utilized the antenatal care services. Single mothers were less likely to utilize antenatal care services than those mothers who are married and live together. Similarly, the result from the study in tribal area in Ghana, Kenya and Malawi showed that among 210 mothers, 71.9% of mother received four antenatal check-up which is quite higher in comparison with my findings. This study provided a basic understanding on ANC service utilization and its associated factors among mothers who had children under 2 yrs. The 66% mothers were from age group (20 -30), majority of mother 91.4% were Hindu and 44.8% were

Chhetri. 53% mother can reach nearest health facility by foot in > 15 minutes. Most of the mother 41% had nuclear family types. Maximum number of mother were engaged in agriculture occupation. This study found that 85.0% mothers ANC visit in health post, 10% primary health care center and 6% of private hospital this percentage finding were quite comparable with Bara district of Nepal found that 65% mother do ANC checkup at health post and 44% mother do ANC at government hospital. Study revealed that respondent's knowledge about antenatal care services is an important predictor of antenatal care utilization and mothers who delivered in a health care facility were more likely to receive ANC than mothers who did not deliver in a health care facility.¹⁵ Similar study revealed that role of education, especially of female education in tribal area, is important contributing factor associated with utilization of antenatal care. Female education is related with enhancing the economic status of mothers, female empowerment, awareness of mother, and independent decisions making capacity in them.⁹ The study on antenatal care services among mothers of Nepal, using NDHS 2011 data found that 50% reported attending antenatal care the pregnant. Mothers who were from urban areas, from rich families, who were educated, whose partners were educated were more likely to attending at least first antenatal visit than compared to mothers who reported agricultural occupation, and whose partners performed agricultural occupation. likewise, study in Morang district of eastern Nepal, showed that only 48.5% women attended four antenatal visit during pregnant.¹¹

CONCLUSIONS

More than half of the respondent mother had completed ANC checkup as per government protocol whereas. Ethnicity of respondent, respondent education level, husband education level, husband occupation level, availability of essential drugs and equipment, satisfaction behavior of health worker and proper physical infrastructure are the factors that influence the ANC care utilization which were found significantly associated with ANC utilization. The main reason for not receiving ANC among mother were lack of awareness.

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