

Utilization of Antenatal Services among Postnatal Mothers

Saraswoti Kumari Gautam Bhattarai,¹ Nirmala Pahadi,¹ Sandhya Chaulagain,¹ Shrijana Mahat,¹ Asha Panth,² Rabin Khadka³

¹Karnali Academy of Health Sciences, Jumla, Nepal, ²Nepalgunj Nursing Campus, IOM, TU, Nepal, ³Province Health Directorate, Karnali Province, Surkhet, Nepal.

ABSTRACT

Background: Antenatal care is medical supervision and care given to pregnant women to ensure, support and maintain maternal and fetal well-being throughout the pregnancy. Therefore, this study was done to find out the utilization of antenatal services among postnatal mothers.

Methods: The descriptive cross sectional study design was used to identify the utilization of antenatal services among postnatal mothers who came in Maternal and Child Health Clinic for the immunization of baby. Total 367 postnatal mothers within one year of childbirth were recruited by simple random sampling technique, and data was collected with face-to-face interview by using semi structured interview schedule. Analysis was done by using descriptive and inferential statistics.

Results: All postnatal mothers consumed iron and folic acid during pregnancy, 96.2% consumed until the childbirth, 94.0% got freely, 97.0% taken anti helminths drug, 98.1% did urine test, 98.1% did blood test, 97.8% got ultrasound service, and 96.5% received Td vaccine. Likewise, higher proportion had checked weight 98.6% and lower proportion had checked height 86.9%. Similarly, majority 90.2% received counselling on danger signs and only 26.2% received the counselling on preparation of items safe delivery and care of newborns. There is significant association of antenatal care service utilization with postnatal mothers' educational level and her husband's occupation ($P < 0.05$ level).

Conclusions: Although most of the postnatal mothers utilized antenatal care services, some aspect of antenatal education and counselling need to be improved such as preparation of item for delivery and new born care, finance, and blood donors.

Keywords: Antenatal care; antenatal care utilization; satisfaction.

INTRODUCTION

Antenatal care is the routine care of pregnant women provided between conception and the onset of labor.¹ Antenatal care is one of the most effective interventions in reducing maternal mortality in the developing world.² A higher number of antenatal care visits will give more opportunities to repeat educational messages and confirm the benefits that can be gained by continued interaction with the health system. This intervention could take the form of follow-up reminders, using new technologies like text messages to a woman's cell phone or the phone of a family member.³ The proper use of antenatal care visit is the first step to prevent

both mother and child health problems. This is also one of the key components to achieve the Sustainable Development goals by 2030.⁴ Therefore, the researcher was interested to find out the utilization of antenatal services among postnatal mothers of Chandannath municipality, Jumla.

METHODS

The descriptive cross sectional study design was used to identify the utilization of antenatal services among postnatal mothers of Chandannath Municipality, Jumla. The population of the study was postnatal mother

Correspondence: Saraswoti Kumari Gautam Bhattarai, Karnali Academy of Health Sciences, Jumla, Nepal. Email: saraswotigautam@gmail.com, Phone: +9779841405497.

within one year of child birth who came in MCH clinic for the immunization of their child. Total 367 postnatal mothers within one year of childbirth were recruited. The sample size for the study was calculated on the basis of four antenatal visit done by women as Nepal demographic and health survey report 2016 that was 69. Immunization service was provided two times in a week in study site. During the immunization day 20 to 40 postnatal mothers were visited to immunize their child. For this study simple random sampling technique was adopted by selecting every alternate cases (even number) who came in MCH clinic for immunization of their child. Semi-structured interview schedule was prepared self by doing literature review. Then subject expert review was done by obstetrician and midwifery faculty, and finalization of tool was done. After that translation to Nepali languages was done by Nepali language expert, and back translation to English was done by English language expert. Likewise, pretesting of research tool was done in 10% of similar population and excluded from study. Data was collected since May 2020 to February 2021 by taking 8 to 12 cases at the time of immunization in MCH clinic. This research was conducted after getting ethical approval from the institutional review committee (2076/ 2077/ 08) of Karnali Academy of Health Sciences. The collected data was entered and analysed by using Statistical Package for Social Science (SPSS) 16 version. Descriptive statistics like frequency, percentage, mean, standard deviation was calculated. Chi-square test was used to measure the association between different variables and utilization of antenatal service.

RESULTS

This study was done to find out the utilization of antenatal services among postnatal mothers of Chandanath municipality, Jumla. Table 1 shows that the majority of postnatal mothers (73.0%) belonged to 20 to 34 age group, and 1.9% were 35 years and more age group. Majority (66.8%) were Brahmin/Chhetri and 0.3% were Madhesi. Most of them (92.4%) were Hindu, and majority (92.4%) were married. Regarding the education level; higher proportion (36.5%) had secondary education and 3.8% were illiterate. Likewise, higher proportion (40.6%) of postnatal mothers were house manager and 0.5% were labour.

Table 2 reveals that higher proportion (36.5%) of postnatal mothers' husband had secondary level; 33.5% had above the secondary level education and 3.3% were illiterate. Likewise, higher proportion (35.1%) of postnatal mothers' husband had service. More than

half (59.7%) had joint family and less than half (40.1%) had nuclear family. Only 32.7% sustain up to 12 months and more from their income. Furthermore, 53.1% took decision mutually and 9% postnatal mothers' husband took decision.

Table 1. Socio-demographic characteristics of mothers.

Socio-demographic characteristics	Number (N=367)	Percent
Age		
Less than 20	92	25.1
20-34	268	73.0
35 or more	7	1.9
Ethnicity		
Dalit	94	25.6
Janajati	21	5.7
Madhesi	1	.3
Muslim	2	.5
Brahmin/Chhetri	245	66.8
Others	4	1.1
Religion		
Hindu	339	92.4
Boudha	18	4.9
Christian	8	2.2
Muslim	2	.5
Marital status		
Married	364	99.2
Divorcee	2	.5
Widow	1	.3
Separated	0	0
Education level of mothers		
Illiterate	14	3.8
Literate	48	13.1
Up to Class 8	110	30.0
Secondary Level	134	36.5
Above 12 class	61	16.6
Occupation of mothers		
House manager	149	40.6
Agriculture	99	27.0
Service	49	13.4
Labor	2	.5
Business	31	8.4
Student	31	8.4
Others	6	1.6

Table 2. Socio-demographic characteristics of mothers.

Socio-demographic characteristics	Number (N=367)	Percent
Husband's education level		
Illiterate	12	3.3
Literate	37	10.1
Up to Class8	61	16.6
Secondary Level	134	36.5
Above 12 class	123	33.5
Husband's occupation		
Agriculture	86	23.4
Service	129	35.1
Labor	33	9.0
Business	70	19.1
Student	38	10.4
Others	11	3.0
Type of family		
Single	147	40.1
Joint Family	219	59.7
Extended Family	1	.3
Month of family income sustainability		
6 Months	115	31.3
6 months to 9 months	58	15.8
9 months to 12 months	74	20.2
12 months and saving	120	32.7
Decision maker in the family		
Self	61	16.6
Husband	33	9.0
Combine	195	53.1
Parents	78	21.3

Table 3 shows that majority (61.9%) had first pregnancy at the age 20 to 34 years. More than half (58.3%) were primi gravida and 4.6% were grand multi gravida. Most of their (86.4%) pregnancy was planned, 84.5% taken decision by self for antenatal check-up, and 74.1% did four times antenatal check -up. Similarly, 42.2% postnatal mothers did their first antenatal check-up at fifth month, 91.0% did antenatal check-up in government health institution.

Table 3. Antenatal related characteristics among postnatal mothers.

Antenatal related characteristics	Number (N=367)	Percent
Age at first pregnancy		
<20 years	138	37.6
20-34 years	227	61.9
35 or more years	2	.5
Number of pregnancies		
one time	214	58.3
2-3 times	136	37.1
4 or more	17	4.6
Pregnancy planned		
Yes	317	86.4
No	50	13.6
Decision maker to go for ANC check up		
Self	310	84.5
Husband	26	7.1
Mother in laws	5	1.4
Mother	16	4.4
Others	10	2.7
Number of ANC check-up		
1 time	2	.5
two times	11	3.0
3 times	34	9.3
4 times	272	74.1
more than 4 visit	48	13.1
Months went for first ANC check-up		
Second month	14	3.8
Third month	50	13.6
Fourth month	126	34.3
Fifth month	155	42.2
Sixth month	16	4.4
Seventh month	5	1.4
Eighth month	1	.3
Place of ANC check up		
Governmental health institution	334	91.0
Private health institution	33	9.0

Table 4. Antenatal care service utilized among postnatal mothers.

Antenatal care service utilized	Number (n=367)	Percent
Iron/folic acid	367	100
Iron/folic acid consumed until delivery	353	96.2
Iron/folic acid get freely from health institution	345	94.0
Iron/folic acid bought sometimes	22	6.0
Anthelmintic taken	356	97
Td vaccine taken	354	96.5
One times	119	32.4
Two times	235	64.0
No TD vaccine	13	3.5
Urine test done	360	98.1
Blood test done	360	98.1
Ultrasound done	359	97.8
Care provider perform ANC check up		
Measure your height	319	86.9
Measured your weight	362	98.6
Measure your Blood pressure	360	98.1
Monitored FHS	359	97.8
Abdomen palpation and fundal height measurement	361	98.4
Women got health education/ counselling		
Nutrition	348	94.8
Preparation of items for safe delivery and newborn care	96	26.2
Transportation	269	73.3
Financial support	172	46.9
Decision Taking person	152	41.4
Supporting bodies/Agency	237	64.6
Blood donor Arrangement	219	59.7
Danger Signs	331	90.2
Importance and timing of postnatal visit	247	67.3
Family Planning	256	69.8
Breastfeeding	249	67.8
Personal hygiene	243	66.2

Table 4 reveals that all (100%) postnatal mothers consumed iron and folic acid during pregnancy, 96.2% consumed until the childbirth and 94.0% got freely. Likewise, 97.0% had taken anti helminthic drug, 98.1% did urine test, 98.1% did blood test and 97.8% got ultrasound service during pregnancy. About 96.5% received Tetanus Toxoid and Diphtheria (Td) vaccine, 32.4% got one dose and 64.0% got two dose of Tetanus Toxoid and Diphtheria

vaccine. In regard to examination during pregnancy; height measured of 86.9%, weight measured of 98.6%, blood pressure measured of 98.1%, fetal heart sound (FHS) monitored of 97.8%, and abdominal palpation and fundal height measured of 98.4%. About the education and counselling during pregnancy; 94.8% on nutrition, 26.2% on preparation of items for safe delivery and newborn care, 73.3% on arrangement of transportation, 46.9% on financial saving, 41.4% on decision taking person, 64.6% on supporting body/person, 59.7% on arrangement of blood donors, 90.2% on danger signs, 67.3% on timing and importance of postnatal visit, 69.8% on family planning, 67.8% on breast feeding, and 66.2% on personal hygiene.

Table 5a. Association of postnatal mothers' socio-demographic characteristics with ANC Visit.

Variables	ANC visits Frequency	ANC visits (%)	X ²	P-value
Age				
Less than 20	92	25.1	6.205	.624
20-34	268	73.0		
35 or more	7	1.9		
Ethnicity				
Dalit	94	25.6	11.58	.930
Janajati	21	5.7		
Madhesi	1	.3		
Muslim	2	.5		
Brahmin/Chhetri	245	66.8		
Others	4	1.1		
Religion				
Hindu	339	92.4	12.371	.416
Boudha	18	4.9		
Christian	8	2.2		
Muslim	2	.5		
Education level of mothers				
Illiterate	14	3.8	38.506	.001*
Literate	48	13.1		
Up to Class 8	110	30.0		
Secondary Level	134	36.5		
Above 12 class	61	16.6		
Occupation of mothers				
House manager	149	40.6	30.848	.158
Agriculture	99	27.0		
Service	49	13.4		
Labor	2	.5		
Business	31	8.4		
Student	31	8.4		
Others	6	1.6		

* Significant association p value < at 0.05.

Table 5 shows that there is significant association of antenatal care service utilization with postnatal mothers' educational level and her husband's occupation ($P < 0.05$).

Table 5b. Association of postnatal mothers' socio-demographic characteristics with ANC Visit.

Variables	ANC visits Frequency	ANC visits (%)	χ^2	P-value
Husband's education				
Illiterate	12	3.3	23.154	.248
Literate	37	10.1		
Up to Class8	61	16.6		
Secondary Level	134	36.5		
Above 12 class	123	33.5		
Husband's occupation				
Agriculture	86	23.4	36.693	.013*
Service	129	35.1		
Labor	33	9.0		
Business	70	19.1		
Student	38	10.4		
Others	11	3.0		
Type of family				
Single	147	40.1	4.351	.824
Joint Family	219	59.7		
Extended Family	1	.3		
Month of family income sustainability				
6 Months	115	31.3	9.948	.621
6 months to 9 months	58	15.8		
9 months to 12 months	74	20.2		
12 months and saving	120	32.7		
Decision maker in the family				
Self	61	16.6	14.889	.248
Husband	33	9.0		
Combine	195	53.1		
Parents	78	21.3		

*Significant association p value < at 0.05.

DISCUSSION

Regarding the socio-demographic characteristics of postnatal mothers; majority 73.0% were belonged to 20 to 34 age group is near similar with study of Pokhara that is 67.0% were between 20 - 34 years of age.⁵ Majority 66.8 were Brahmin/Chhetri, and most of them 92.4% followed Hindu religion that is near similar with study of Pokhara that is 85.5%.⁵ About 30.0% had primary education and 3.8% were illiterate. According to study finding of Gorkha district, 44.7% had primary education and 26.6% were illiterate which is higher than this study.⁶ This may be due to socio-cultural difference. Similarly, the study conducted in Mahottari district of Nepal, 78% were illiterate that is contrast finding.⁷ Higher proportion (40.6%) were house manager which is lower than study of Mahottari, Nepal, that is 79.0% were housewives⁷ and near similar with one study of India that is 56.7% were house wives.⁸ In regard to husband's education of postnatal mothers; 36.5% had secondary level and 33.5% had above the secondary level and 3.3% were illiterate. A study of Mahottari district of Nepal 58.0% had no formal education.⁷ About their husband's occupation; 35.1% had service which is contrast with study conducted in Mahottari of Nepal that is 80% were engaged in daily wage work (labour).⁷ About 59.7% had joint and 40.1% had nuclear family which is contrast with finding of Gorkha that is 75.3% belonged to a nuclear family.⁶ More than half (53.1%) decide mutually (combined) and 9.0% postnatal mothers' husband took the decision which is contrast with the finding of Gorkha that is 68.0% of the decision makers were husbands.⁶

Majority (61.9%) had first pregnancy at the age 20 to 34 years and 37.6% were below 20 years which is contrast with the finding of Ethiopia that is 63.4% women had their first pregnancy below 20 years of age.⁹ This difference may be due to sociocultural factors. Majority (58.3%) were primi gravida which is contrast with study of Pokhara sub-metropolitan city that is 98.0%.¹⁰ This is may be due to sociocultural difference of Gandaki and karnali province. In this study 4.6% were grand multi gravida which had near similar with the findings of Northwest Ethiopia that is 6.6% were grand multi gravid.¹¹ This may be because both countries are developing country. In this study 86.4% pregnancy were planned which is higher than the study conducted in Southern Ethiopia that is 62.3% were planned.² About 84.5% taken decision by postnatal mothers self for antenatal check-up which is contrast with the finding of Southern Ethiopia that is only 21.4% decided by their own to attend antenatal care.² This may be due to women empowerment. Most of (74.1%) postnatal mothers did four times antenatal check-up which is similar with study

of Gorkha that is 72.8%⁶ and contrast with the study of Somalia that is 18.9%.¹² Another study of Northeast Ethiopia, highest proportion (38.3%) of women had only two antenatal care visits.¹³ Higher proportion (42.2%) did their first antenatal check-up at fifth month and in Ethiopia 63.7% get antenatal care service at their 4-6 gestational age.¹⁴ About 91.0% postnatal mothers received antenatal check-up in government health institution which is near similar with study findings of Mahottari, Nepal that is 82.0%.⁷ Almost all postnatal mothers consumed iron and folic acid which is contrast with finding of Nanded, India that is 24.5%.¹⁵ This may be due to national policy of Nepal. Likewise, 97.0% taken anti helminthic drug during pregnancy whereas in Uttar Pradesh, India only 4.0% taken anti helminthic drug (deworming).¹⁶ About 98.1% had done urine test during pregnancy and according to Health facility survey of karnali province, 65.0% had a urine sample taken for test.¹⁷ This is also contrast with one study of Ethiopia that is only 18.0% had obtain laboratory services and 82.0% women did not receive laboratory service.¹⁸ This may be due to awareness level of women and quality of service. In this study 98.1% did blood test which was similar with the study of Telangana, India that is 92.8% had blood investigations.¹⁹ In this study 96.5% received Tetanus Toxoid and Diphtheria vaccine that is similar with the finding of Nanded, India that is 95.25% received vaccine.¹⁵ Similar result was found in the Uttar Pradesh, India that is 96.0% women had taken two dose Tetanus Toxoid and Diphtheria during pregnancy.¹⁶ In regard to examination during pregnancy; weight measured of 98.6% which is contrast with one study done in India that is 70.0% of pregnant women had their weight monitored during pregnancy.²⁰ About the education and counselling during pregnancy received by postnatal mothers 94.8% on nutrition, 90.2% on danger signs, 69.8% on family planning, 67.8% on breast feeding. According to study of North-East Nigeria, pregnant women received education 86.0% on diet and nutrition, 87.0% on danger signs of pregnancy, breast feeding and family planning.²¹ There is significant association of antenatal care service utilization with postnatal mothers' educational level and her husband's occupation.

CONCLUSIONS

All postnatal mothers consumed iron and folic acid during pregnancy. Among them majority consumed until the childbirth and got from the health institution freely. Majority had taken anti helminths drug, done urine test, blood test and got ultrasound service during pregnancy and received Tetanus Toxoid and Diphtheria vaccine. In regard to antenatal check-up performed by

care providers; higher proportion had checked weight and lower proportion had checked height during their pregnancy. Similarly, majority received counselling on danger signs and only few on preparation of items needed for safe delivery and care of new born. Although most of postnatal mothers were utilized antenatal care services, some aspect of antenatal education and counselling need to be improved such as preparation of item for delivery and new born care, finance, and blood donors. Furthermore, the study was limited only on Chandannath municipality, so the large scale study on utilization of antenatal care service is recommended for future researcher.

ACKNOWLEDGEMENTS

We would like to acknowledge the Research Committee of Karnali Academy of Health Sciences (KAHS), Jumla for providing financial support to this study. Lastly, we would like to thank all postnatal mothers who attend in MCH clinic of KAHS for their valuable response.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

1. Basha GW. Factors Affecting the Utilization of a Minimum of Four Antenatal Care Services in Ethiopia. *Obstet Gynecol Int.* 2019;2019. [[Google scholar](#)]
2. Dulla D, Daka D, Wakgari N. Antenatal Care Utilization and Its Associated Factors among Pregnant Women in Boricha District, Southern Ethiopia. *Divers Equal Heal Care.* 2017;14(2):76–84. [[Google scholar](#)]
3. McNellan CR, Dansereau E, Wallace MCG, Colombara D V., Palmisano EB, Johanns CK, et al. Antenatal care as a means to increase participation in the continuum of maternal and child healthcare: An analysis of the poorest regions of four Mesoamerican countries. *BMC Pregnancy Childbirth.* 2019;19(1):1–11. [[Google scholar](#)]
4. Shrestha B. Mother's Education and Antenatal Care Visits in Nepal. *Tribhuvan Univ J.* 2018;32(2):153–64. [[Google scholar](#)]
5. Sharma D, Pokharel HP, Budhathoki SS, Yadav BK, Pokharel RK. Antenatal Health Care Service Utilization in Slum Areas of Pokhara Sub-Metropolitan City, Nepal. *J Nepal Health Res Counc.* 2016;14(32):39–46. [[Google scholar](#)][[PubMed](#)]

6. Awasthi MS, Awasthi KR, Thapa HS, Saud B, Pradhan S, Khattry RA. Utilization of Antenatal Care Services in Dalit Communities in Gorkha , Nepal : A Cross-Sectional Study. 2018;2018. [[Google scholar](#)]
7. Chaurasiya SP, Pravana NK, Khanal V, Giri D. Factors Affecting Antenatal Care Utilization Among the Disadvantaged Dalit Population of Nepal: A Cross-sectional Study. *Open Public Health J.* 2019;12(1):155–63. [[Google scholar](#)]
8. Watode BK, Srivastava A, Kumar R. Patterns of antenatal care services utilization in rural Amroha, Uttar Pradesh: a community based cross sectional study. *Int J Community Med Public Heal.* 2019;6(9):4048. [[Link](#)]
9. Amentie M, Abera M, Abdulahi M. Utilization of Antenatal Care Services and Influencing Factors among Women of Child Bearing Age in Assosa District, Benishangul Gumuz Regional State, West Ethiopia. 2015;15(2). [[Google scholar](#)]
10. Paudel S, Paudel T, Sanjel S. Utilization of antenatal care services and factors affecting antenatal care visits in Pokhara sub-metropolitan city. *J Karnali Acad Heal Sci.* 2020;3(1):1–12. [[Google scholar](#)]
11. Ayalew TW, Nigatu AM. Focused antenatal care utilization and associated factors in Debre Tabor Town , northwest Ethiopia , 2017. *BMC Res Notes* [Internet]. 2018;1–6. [[Link](#)]
12. Jimale HS, Sheikh A, Omer M, Mahdi AY, Ahmed AM. Utilization of Antenatal Care Services Among Pregnant Mothers in Wadajir District , Banadir Region-Mogadishu Somalia. 2020;6(6):320–5. [[Google scholar](#)]
13. Tadesse E. Antenatal Care Service Utilization of Pregnant Women Attending Antenatal Care in Public Hospitals During the COVID-19 Pandemic Period. 2020;1181–8. [[Google scholar](#)]
14. Fseha B. Focused Antinatal Care Service Utilization and Associated Factors Among Pregnant Women's in Shire, Tigray, Ethiopia. *Biomed J Sci Tech Res.* 2019;15(2):11308–14. [[Google scholar](#)]
15. Pawar SP, Pardeshi G. Utilization of intranatal care services in urban slums of Nanded city. *MedPulse Int J Community Med.* 2019;10(1):01–6. [[Link](#)]
16. Singh R, Neogi SB, Hazra A, Irani L, Ruducha J, Ahmad D. Utilization of maternal health services and its determinants : a cross-sectional study among women in rural Uttar Pradesh , India. 2019;5:1–12. [[Google scholar](#)]
17. Ministry of Social Development, Karnali Province, Nepal; New ERA; and ICF. Karnali Province, Key Findings from the 2015 Nepal Health Facility Survey & 2016 Nepal Demographic and Health Survey. Kathmandu, Nepal; 2019. [[Full Text](#)]
18. Ayalew MM, Nebbeb GT, Bizuneh MM, Dagne AH. Women ' s Satisfaction and Its Associated Factors with Antenatal Care Services at Public Health Facilities : A Cross-Sectional Study. 2021. [[Google scholar](#)]
19. Narayan Das B, Kanakamedala S, Mummadi M kumar. Factors associated with utilization of antenatal care services among rural women, Telangana, India. *Int J Community Med Public Heal.* 2018;5(7):2807. [[Link](#)]
20. Fulpagare PH, Saraswat A, Dinachandra K, Surani N, Parhi RN, Bhattacharjee S, et al. Antenatal Care Service Utilization Among Adolescent Pregnant Women– Evidence From Swabhimaan Programme in India. *Front Public Heal.* 2019;7(December). [[Google scholar](#)]
21. Ibrahim SM, Bakari M, Abdullahi HU, Bukar M. Clients' perception of antenatal care services in a tertiary hospital in North Eastern Nigeria. *Int J Reprod Contraception, Obstet Gynecol.* 2017;6(10):4217. [[Link](#)]