

Magnitude and Determinants of Postnatal Care Service Utilization in Farta District, South Gondar Zone, Amhara Region, Ethiopia

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Abstract

Objective: The aim of this study was to assess the magnitude and determinants of postnatal care service utilization in Farta district, South Gondar Administrative Zone, Amhara Region, Ethiopia, in 2019.

Methodology: Cross-sectional study was carried out among 737 mothers in 11 Kebeles and a multi-stage sampling technique was used to select the subjects. Binary logistic regression statistical model using the adjusted odds ratio (AOR) and 95% CI was used to identify determinants of PNC services utilization.

Results: The magnitude of PNC services utilization in Farta District was 26.19% [95% CI: (22.8 - 29.2)] with variations in between Kebeles. Having formal education of mother [95% CI: 2.8 (1.75 - 4.48)], birth at a health facility [95% CI: 3.18 (1.73 - 5.85)], counseling given during ANC visits [95% CI: 5.72 (3.42 - 9.55)], complications during or after delivery [95% CI: 2.78 (1.20 - 6.52)] and living within 5km of health facility [95% CI: 2 (1.29 - 3.10)] were identified as determinants of PNC services utilization.

Conclusion: Having formal education, counseling during ANC and facility delivery were positively associated whereas having no complications during or after delivery and residing far from a health facility were negatively associated with PNC services utilization. Tracing mechanisms for reaching pregnant women should be developed and strengthened to improve counseling services at home. Frequent support and supervision for remote Kebeles.

Keyword: Postnatal Care; Utilization; Distribution; Farta District; Amhara Region

Introduction

The days and weeks following childbirth are a critical period for the lives of women and newborns. Most mothers and newborn deaths occur during the first months after birth. In 2013, 2.8 million children died in the first months of life of which 1 million have died in the first days of life globally [1]. In Africa, half of all postnatal maternal deaths occur during the first 24 hours after delivery. Hemorrhage was being the leading immediate cause which accounted for 34%. Sub-Saharan Africa had the highest neonatal and maternal mortality in the Africa [1-5].

In Ethiopia, postnatal care was planned as a priority intervention in the Health Sector Development Program (HSDP) to increase the coverage to 78% by 2014 [2]. Yet, the level of postnatal care coverage was extremely low in Ethiopia; Among women who had got PNC

care services, 5% percent of women received postnatal care within 3 to 41 days [3]. The maternal mortality ratio was 667 per 100,000 live birth in 2013/2014 GC while the expected MMR was below 267 per 100,000 live birth by 2015. This figure might even be higher in rural settings. This was much attributed to poor postnatal care service at the community level [4]. If routine PNC care service had been offered, 10% to 27% of newborn deaths could have been avoided. In other words, high PNC coverage could save up to 310,000 newborn lives a year in Africa [5].

The fourth Health Sector Development Program (HSDP-V) promotes safer pregnancy through providing free MCH services, improving access and infrastructures of health services and enhancing training to primary health workers [6]. The health sector in Ethiopia is organized into a three-tier system. The first tier is the Primary Health care system which includes a primary hospital, which serves 60,000-100,000 people, health centers, serving 15,000-25,000 people each and Kebele-level health posts, which serve 3,000-5,000 people. The second level consists of General hospitals that serve 1-1.5 million people. In the third tier, specialized hospitals are serving a patient population of 3.5-5 million [4,6]. FMOH of Ethiopia instituted health care financing reform (HCFR) which consists of exemption of maternal and child health services so as to decrease the health cost of mothers and families [4].

The low access to emergency obstetric care services in rural Ethiopia showed that maternal mortality was unlikely to significantly decline [7]. Despite the prior attention given to MCH service to the rural communities, the achievements so far were not satisfactory.

Methods

Study design

- A quantitative community-based cross-sectional study was conducted in Farta districts, in South Gondar Administrative Zone, in Amhara Region from February to June 2019.

Data Collection

Data was collected by data collectors from mothers by interviewing using a structured questionnaire at their actual residence after identifying all eligible mothers from HEWs record at the health post. Finally, if she was a volunteer to participate in the study, the interview commenced. For the data collection, two data collectors for each Kebele were used. Data collectors were trained and have been living with the community for a long time.

Study Instrument

The questionnaire was prepared in the English language and then translated into Amharic language and then back to English by a language expert to check the consistency. Pre-tested structured questionnaires were used. Training has been given for data collectors and supervisors on the data collection tool and procedures. Data completeness was checked daily by the supervisor and principal investigator.

Study variables and Measures

We had 10 questions on socio-demographic characteristics of the respondent and the rest 32 questions were related to the reproductive health characteristics of the mothers which make up 42 questions in total.

Dependent variable

- Postnatal care service utilization status (Yes/No).

Independent variables

- Socioeconomic variables
 - Employment status of the mother
 - Women education
 - Husband education
 - Family monthly income.
- Demographic Variables
 - Age
 - Parity
 - The number of children alive.
 - Last child alive/dead

- Characteristics of Birth
 - Place of delivery.
 - Birth outcome.
 - Mode of delivery.
 - Problems after during or after delivery(like retained placenta, bleeding)).
- ANC visits.
 - Number of visits.
 - Counseling given on PNC.
 - Distance from the health facility.

Data processing and analysis

EPINFO 7 was used for data editing and entry while Microsoft Excel 2010 was used for data cleaning and preparation. The analysis was done using Stata12. Data in EP INFO 7 was exported to Microsoft Excel 2010 for cleaning. The binary logistic regression model was applied and we analyzed each independent variable with simple logistic regression (bivariate analysis) and covariates whose p-value less than 0.2 were entered into multiple logistic regression models for final analysis. Results were summarized and organized by tables and graphs. Frequencies and percentages of different variables concerning PNC service utilization status were calculated. The association between the dependent and independent variables was evaluated by using an adjusted odds ratio with 95% CI. Covariates having a p-value less than 0.05 have been considered as significantly associated with outcome variable and AOR was used to measure the strength of association.

Results

Demographic and socio-economic characteristics of the respondents

A total of 737 mothers participated in the study. The mean age of the respondents was 26.7(SD 5.6±). The majority of them were age -group 25 to 34. More than half of the respondents were unable to read and write. Less than 1% of them were employed and 99.19% were housewives. Three hundred sixty-five (49.53%) had 1 to 3 children. The mean monthly income of the household was 963.6364 ETB (Table 1).

Socio-demographic Characteristics	Frequency	Percent (%)
Age of respondents		
15-24	312	42.33
25-34	353	47.90
35+	72	9.77
Number of children in the HH		
1	132	17.91
1-3	365	49.53
4+	240	32.56
Monthly Household income		
< = 500Birr	64	8.68
500-1500Birr	644	87.38
1500-2500Birr	20	2.71
>= 2500Birr	9	1.22
Educational status of respondents		
Unable to read and write	479	64.99
Primary education	185	25.10
Junior secondary school	56	7.6
Secondary education	11	1.69
College diploma and above	6	0.81
Educational status of the husband		
Unable to read and write	542	73.54
Primary education	121	16.42
Junior secondary school	47	6.38
Secondary education	18	2.44
College diploma and above	9	1.22
Occupations of the respondents		
Housewife	731	99.19
Government Employee	6	0.81

Table 1: Socio-Demographic Characteristics of Respondents.

Reproductive health characteristics of the respondents

Six hundred seventy-six (91.72%) had attended at least one ANC visits and of those 444 (60.24%) had four and above ANC visits for the recent baby. Four hundred eighty-six (65.94%) had delivered at a health facility and two hundred fifty-one (34.06%) gave birth at home. 50 (6.78%) of them had complications during or immediately after delivery for their recent baby. Four hundred twenty-five (57.67%) had got counseling during their recent ANC visit.

Utilizations of PNC services

The magnitude of PNC services utilization was 26.19% (95% CI: 22.8 - 29.2). Among those respondents who had 1 to 3 ANC visits, only 15.65% used PNC services. Among 444 (60.24%) of the respondents who have got 4 and above ANC visits, 157 (35.36%) used PNC services for their last pregnancy. Regarding the place of delivery, 176 (36.21%) of those who delivered at a health facility but only 17 (6.77%) of whom delivered at home were used PNC services (Table 2).

Variables	PNC Utilized		Total
	NO	Yes	
Frequency of ANC Visits			
No ANC Visit	61(100%)	0(0%)	61(8.28%)
1-3 Visits	196(84.35%)	36(15.65%)	232(31.48%)
4+ Visit	287(64.64%)	157(35.36%)	444(60.24%)
Counseling in ANC			
No	290(92.95%)	22(7.05%)	312(42.33%)
Yes	254(59.76%)	171(40.24%)	425(57.67%)
Place of Delivery			
Complications during after delivery			
No	521(75.84%)	166 (24.16%)	687(93.22%)
Yes	23(46%)	27(54%)	50(6.78%)
Distance to HF			
<=5km	287(67.37%)	139(32.63%)	426(57.08%)
>5km	257(82.64%)	54(17.36%)	311(42.2%)

Table 2: Utilization of PNC by Reproductive Characteristics of Women.

PNC services use related to Place of delivery

Concerning the place of delivery, 86 (51.5%) of those who delivered at a government hospital, 90 (28.21%) of those delivered at a health center and 17 (6.77%) of those who delivered at home were used PNC services.

Reasons for not using PNC services

I and my baby were not sick (46.69%), I felt not important (45.96%), Lack of awareness (7.17%) and financial problem (0.18%) were the reasons given for not attending PNC service (Figure 1).

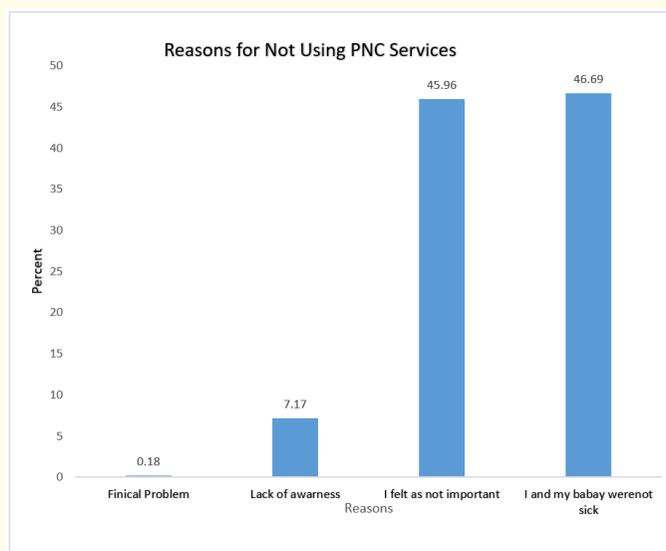


Figure 1: Reasons for not using PNC Services.

Women who had used PNC services had attended at least one ANC visit. 157(81.35 %) of women who used PNC services attended 4 ANC visits (Figure 2).

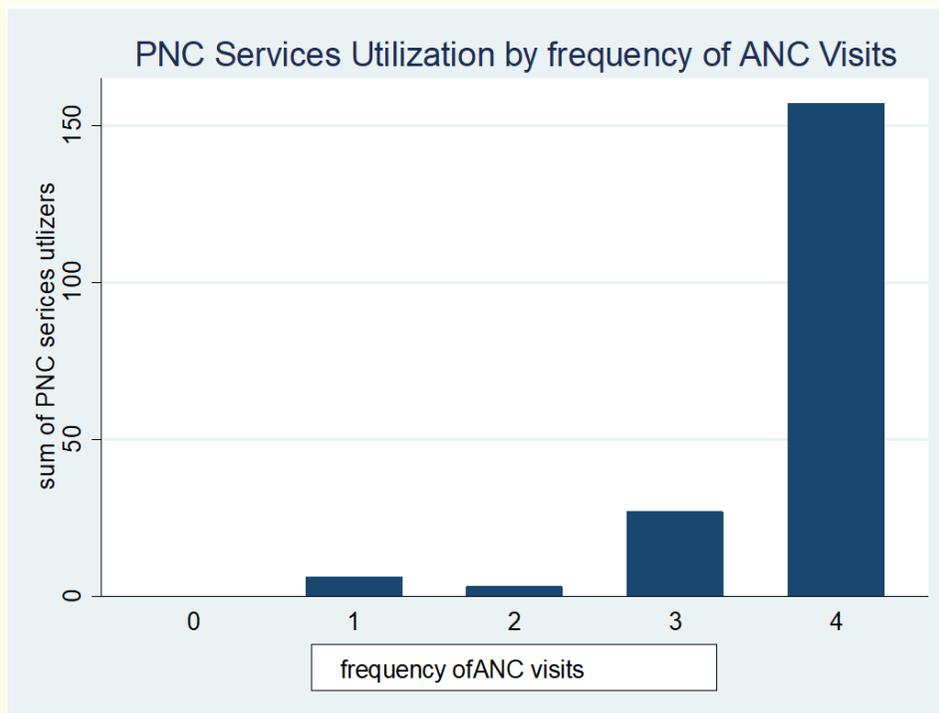


Figure 2: PNC Services Utilization by Frequency of ANC Visits.

Factors associated with PNC services utilization

Eleven variables were included and they all were statistically significant in the bivariate analysis. Bur after adjusting all variables in Multivariable analysis, the educational status of women, place of delivery, distance from the health facility, complications during or after delivery, counseling during ANC visits were found statistically significantly associated with PNC services utilization.

The odd of using PNC services were 2.8 times higher [95 % CI: 2.8 (1.75 - 4.48)] among mothers who had formal education than mothers who had no formal education. Mothers who lived within 5kms from the health facility were 2 times [95 % CI: 2 (1.29 - 3.10)] more likely to use PNC services than mothers who reside far from 5km.

Mothers who had counseling during ANC visits were 5.72 times [95 %CI: 5.72 (3.42 - 9.55)] more likely to use PNC than mothers who hadn't been counseled. Mothers who delivered at a health facility were 3.18 times [95% CI: 3.18 (1.73 - 5.85)] more likely to use PNC services than those who delivered at home. Those who had complications during or after delivery were 2.78 times (95%CI: 2.78 (1.20 - 6.52)) more likely to use PNC services than mothers who didn't have a complication (Table 3).

Variables	PNC Utilization		COR 95% CI	AOR 95%CI
	No	Yes		
Distance to HF				
Less than or equal to 5km	287	139	2.31(1.61-3.29)	2(1.29-3.10)*
Greater than 5km	257	54	1	1
Frequency of ANC visits				
<4 times	257	36	1	1
>= 4 times	287	157	3.91(2.62-5.82)	1.53(0.95-2.48)
Place of delivery				
Health Facility	310	176	7.82(4.62-13.22)	3.18(1.73-5.85)*
Home	234	17	1	1
Number of children in HH				
<4	348	149	1.907(1.31-2.78)	1.02(0.62-1.67)
>= 4	196	44	1	1
Educational status of respondents				
No Formal Education	400	79	1	1
Formal Education	144	114	4.0(2.84-5.66)	2.8(1.75-4.48)*
Educational status of the Husband				
No Formal Education	428	114	1	1
Formal Education	116	79	2.56(1.80-3.64)	1.23(0.78-1.95)
Occupation of respondents				
Not Employed	542	188	1	1
Employed	2	5	7.21(1.39-37.46)	3.39(0.34-35.54)
Complications During Delivery				
No complication	521	166	1	1
Complications	23	27	7.88(3.83-16.23)	2.78(1.20-6.52)*
HH monthly income				
<= 1500Birr	529	179	1	1
>1500Birr	15	14	2.76(1.31-5.83)	1.55(0.48-5.07)
Counseling given in ANC				
No	290	22	1	1
Yes	254	171	8.87(5.52-14.27)	5.72(3.42-9.55)*
Mode of delivery				
SVD	521	166	1	1
Assisted delivery (Instrumental or C/S)	23	27	5.16(2.32-11.47)	1.05(0.35-3.18)

Table 3: Bivariate and Multivariable analysis of factors associated with PNC services utilization in Farta district, South Gondar Administrative Zone, Amhara Region Ethiopia, 2017.

N.B * =p<0.05.

Discussion

PNC coverage in Farta District was 26.19%. The finding of this study is low as compared to the study done in Dembacha district, Ethiopia (34.8%) and Abuna Gindeberet district, Ethiopia (31.7%) [8,9]. This difference may be because those studies included residents in an urban setting (main towns of the district) which makes the magnitude bigger and the sample size was also small as compared to this study. On the other hand, the finding of this study is higher as compared to the secondary analysis of EDHS 2011 (2%) [10]. This difference is explained by the fact that government efforts on the reduction of maternal death have been strengthened and there is a time difference. The different reasons are given for not having PNC and among those reasons, the most frequent one was (46.69%) I and my baby were not sick.

The study also showed that mothers who had formal education were 2.8 times (95% CI: 2.8(1.75 - 4.48)) more likely to use PNC services than mothers who had no education. Education makes mothers understand the benefits of PNC and promotes healthcare-seeking behavior. But the educational status of the husband was found not statistically significantly associated with PNC services utilization. This shows that mother education plays a vital role in PNC services utilization than husbands. The result is consistent with studies in Dembecha in Ethiopia, secondary analysis of EDHS analysis, Kenya, Nigeria [8,10-12].

Concerning ANC, ANC visits were not statistically associated with PNC services utilization which is contradicting to the study Hossina Ethiopia, Kenya, India, and Ethiopia [11-14]. The absence of association between ANC visits and PNC service use which was observed in this study might be due to there was strong motivation among mothers towards ANC services utilization than PNC. From this finding, it is clear that counseling is vital besides frequent ANC visits for women to use PNC services.

Regarding counseling, mothers who got counseling were 5.72 times (95% CI: 5.72(3.42-9.55)) more likely to use PNC services than women who did not get counseling. Mothers who got counseling about the importance of PNC services and dangers in the postnatal period will understand the benefit and utilize PNC. This in line with a study in Addis and Abi-Adi town in Ethiopia, and in Nepal [15-17].

Place of delivery was found one of the strongest predictors of PNC services utilization. Mothers who delivered at a health facility were 3.18 times more likely to use PNC services than mothers who gave birth at home. This is because women who give birth at a health facility might get counseling. Moreover, attending ANC services as recommended might increase women understanding of the dangers associated during or after delivery as far as good counseling was offered. This will ultimately increase the chance of PNC services uptake. This result is supported by studies in Zimbabwe and Debermarkose and Asela town in Ethiopia [18-20].

This study showed that mothers who had a complication during or after delivery were more likely to utilize PNC services than mothers who did not [95% CI: 2.78 (1.20-6.52)]. This is attributed to the health problem which mother and their baby have. Mothers with a complication during or after delivery might get more attention from health personals. On the other hand, those who have no complications may feel as if no more danger will come to them afterward and they will get less emphasis and thus will not come back to the health facility. This finding agrees with the study in Pal stain, Tanzania, and Debermarkose, Ethiopia [19,21,22].

In line with the objectives of the study, distance from the health facility was found strongly associated with PNC services utilization. Mothers who reside within 5km of a health center or hospital were 2 times more likely to use PNC services than mothers who found far from 5km. This is because mothers who are living far from the health facility are feeling tired of getting there. In addition, there might be infrequent support and supervision from stakeholders. This shows geographic proximity plays a vital role in accessing maternity services. This is in line with the study done in Zimbabwe and Abuna-Ginderberet, Ethiopia [9,18].

Significance of the Study

The postnatal period is a critical period for the lives of the mother as well as the newborn. This because most maternal and newborn deaths occur after the delivery of the baby. Hence, postnatal care at the place of delivery for the mothers and newborn is critical.

In Ethiopia, mortality has not been significantly decreased and PNC service utilization was by far very low in Farat woreda. Reason for underutilization of PNS were different from place to place .Previous studies in other region of Ethiopia mainly focused in urban community ignoring the most in need.

Despite the fact that there have been government and nongovernmental initiatives which have been working on maternal health, the outcomes of those programs were not contributing much as to maternal health was concerned. To effectively address those problems, it is very important to scientifically identify socio-demographic characteristics of women in each district and assess factors contributing to low PNC service utilization with particular emphasis on the rural communities where the problem ware more pronounced.

Conclusion

- The magnitude of PNC services utilization was low.
- PNC services utilization was low compared with ANC use and facility delivery.
- Facility delivery, having formal education of women and counseling given during ANC visits were positively associated with PNC services utilization.
- Having no complication during or after delivery and living far from a health facility were negatively associated with PNC services utilization.

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 - Frequent support and supervision should be strengthened especially for those living in the remote areas of the district.
3. To researchers
 - A survey should be conducted across the district for further detailed analysis of the health facility factors associated with PNC services utilization.

Author's Contributions

All authors made significant contribution from conception of the idea up to interpretation of the paper. They are also agreed on which journal to submit the publications.

Conflict of Interest

The author do not have any conflict of interest to declare.

Bibliography

1. WHO. Jhpiego. Postnatal Care for Mothers and Newborns: Highlights from the World Health Organization 2013 Guidelines (2015): 1.
2. Ethiopia. "Health sector transformation plan: Performance of the Health Sector Development Programme (HSDP) Situational Assessment (2015): 26.
3. Central Statistical Agency E. Ethiopia mini demographic and health survey (2014): 51-52.
4. UNICEF. Unite for a Safe Delivery in Ethiopia: Ethiopia - Maternal Health Brief (2014): 1-2.
5. Charlotte W., *et al.* "Opportunities for Africa's Newborns (2007).
6. Jacquelyn C., *et al.* "Health Extension Workers in Ethiopia: Delivering community-based antenatal and postnatal care (2014): 3.
7. Ethiopia. "Accelarted action planfor reducing matrnl mortality (2014): 23.
8. Mulatu A., *et al.* "Postnatal Care Service Utilization and Associated Factors Among Women in Dembecha District, Northwest Ethiopia". *Science Journal of Public Health* 3.5 (2015): 691.
9. Birhanu Darega., *et al.* "Institutional delivery and postnatal care services utilizations in Abuna Gindeberet District, West Shewa, Oromiya Region, Central Ethiopia: A Community-based cross sectional study". *BMC Pregnancy and Childbirth* 16.49 (2016): 4.
10. Shegaw M., *et al.* "Determinants of maternal health service utilization in Ethiopia: analysis of the 2011 Ethiopian demographic and health Survey". *BMC Pregnancy and Childbirth* 14.16 (2014): 1.
11. Daniel A., *et al.* "Determinants of postnatal care use in Kenya". *African Population Studies* 28.34 (2014): 1457.
12. Somefun Dolapo O. "Determinants of postnatal care non-utilization among women in Nigeria (2014): 44.
13. Tej RJ., *et al.* "Factors affecting the use of maternal health services in Madhya Pradesh state of India : A multilevel analysis". *International Journal for Equity in Health* 10.59 (2011): 8.
14. Zeleke D., *et al.* "Maternal health care use among married women in Hossaina, Ethiopia". *BMC Health Services Research* 1015.365 (2015): 1.
15. Senait B., *et al.* "Prevalence of Postnatal Care Utilization and Associated Factors among Women Who Gave Birth and Attending Immunization Clinic in Selected Government Health Centers in Addis Ababa". *Journal of Health, Medicine and Nursing* (2016): 26.
16. Hailemariam A., *et al.* "Prevalence and Factors Associated with Post Natal Care Utilization in Abi-Adi Town, Tigray, Ethiopia: A Cross Sectional Study". *International Journal of Pharmaceutical and Biological Sciences Fundamentals* 08.01 (2014).
17. Neupane S and Doku D. "Utilization of postnatal care among Nepalese women". *Maternal and Child Health Journal* 17.10 (2013): 1922-1930.

18. Pomerai KW. "Determinants of Post Natal Care Uptake in Bikita District, Masvingo Province". Zimbabwe (2011): 39.
19. Miteku A., *et al.* "Postnatal Care Service Utilization and Associated Factors among Women Who Gave Birth in the Last 12 Months prior to the Study in Debre Markos Town, Northwestern Ethiopia: A Community-Based Cross-Sectional Study". *International Journal of Reproductive Medicine* 70 (2016): 6.
20. Mulatu T. "Assessment of postnatal care utilization and associated factors in Asella town, Regional state of Oromia". *Ethiopia* (2015): 33-34.
21. Enas D., *et al.* "Factors associated with lack of postnatal care among Palestinian women: A cross-sectional study of three clinics in the West Bank". *BMC Pregnancy and Childbirth* 8.26 (2008): 1.
22. Mohan D., *et al.* "Determinants of postnatal care use at health facilities in rural Tanzania: multilevel analysis of a household survey". *BMC Pregnancy and Childbirth* 15.1 (2015): 282.

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