

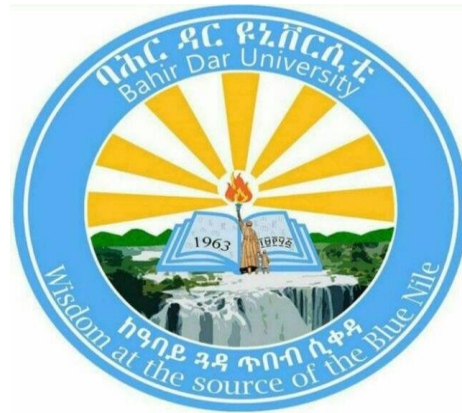
2021-02

Postnatal Care Service Utilization and Associated Factors Among Women Who Gave Birth in The Last 12 Months in Fogera Woreda, Northwest, Ethiopia

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BAHIR DAR UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH, DEPARTMENT OF

HEALTH SYSTEM MANAGEMENT AND HEALTH ECONOMICS

POSTNATAL CARE SERVICE UTILIZATION AND ASSOCIATED FACTORS
AMONG WOMEN WHO GAVE BIRTH IN THE LAST 12 MONTHS IN
FOGERA WOREDA, NORTHWEST, ETHIOPIA

BY: TEKLE GEDEFAW (BSC IN PUBLIC HEALTH)

A THESIS REPORT TO BE SUBMITTED TO DEPARTMENT OF HEALTH
SYSTEM MANAGEMENT AND HEALTH ECONOMICS, COLLEGE OF
MEDICINE AND HEALTH SCIENCE, FOR PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF MASTERS IN GENERAL
PUBLIC HEALTH

FEBRUARY, /2021

BAHIRDAR, ETHIOPIA

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Full title of the research project	Postnatal care service utilization and associated factors among women who gave birth in the last 12 months in Fogera woreda, North west Ethiopia
Duration of the project	From July/2020 to February/2021
Study area	Fogera Woreda, Amhara region, North West ,Ethiopia
Total budget	111075.30 Ethiopian Birr

I. ACKNOWLEDGEMENTS

First, I would like to acknowledge Bahir Dar University, college of medicine and health science, school of public health, department of health system management and health economics for giving me this opportunity. I would like to acknowledge my advisors Sr. Eleni Admassu and Mr. Getassew Tadesse for timely notifications about topic selection and their timely orientation, for their constructive comments and support to prepare proposal and their continuous support to prepare this thesis report. I also acknowledge Fogera woreda health office for their co-operative and supportive willingness to my research. I also acknowledge data collectors, supervisors and study participants.

II.ACRONYMS

ANC - Ante Natal Care

AOR - Adjusted Odds Ratio

APH – Ante Partum Hemorrhage

DHS - Demographic and Health Survey

EDHS - Ethiopia Demographic and Health Survey

EMDHS - Ethiopia Mini Demographic and Health Survey

FMOH - Federal Ministry of Health

HIV - Human Immune Virus

LBW - Low Birth Weight

MMR - Maternal Mortality Ratio

PNC - Postnatal Care

SBA - Skilled Birth Attendance

SPSS - Statistical Package for Social Science

SSA - Sub-Saharan Africa

WHO - World Health Organization

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ABSTRACT

Background: The postpartum period is one of the most vulnerable and critical periods for the mother and newborn. Inadequate care during this period may result in death or disability as well as missed opportunities to promote health behaviors. Two-thirds of all maternal deaths occur during the first six weeks following birth. Despite postnatal care services has significant role in improving maternal health, services are underutilized in most developing countries including Ethiopia. **Objective:** The main objective of this study was to determine the prevalence of postnatal care utilization and associated factors among women who gave birth in the last 12 months in Fogera woreda. **Methods:** Community based cross sectional study was conducted among 567 women who gave birth in Fogera woreda a year prior to the survey. Systematic random sampling technique was used to select study participants. Data was collected from November 30/2020 to December 25/2020 through face to face interview by using Amharic questionnaire by trained data collectors. Data was entered, cleaned and analyzed using SPSS version 23 software. Descriptive statistics was used to determine the proportion of postnatal care utilization and bivariable logistics regression was computed to identify candidate variable with p -value <0.25 and multivariable logistic regression analysis were carried out to identify factors associated with postnatal care services utilization. A significant association was declared when p -value is less than 0.05. The strength of association is determined by calculating odds ratio at 95% confidence interval. **Result:** A total of 567 women were participated in the study. Postnatal care service utilization was found to be 52.9%. Educational status of primary school and above(AOR: 3.55, 95% CI: 1.45-8.63), time travelling less than one hour to get access of health facility (AOR: 4.28, 95% CI: 2.59-7.08), types of last pregnancy(AOR: 1.97, 95% CI: 1.10-3.54), maternal complication faced after delivery(AOR: 3.04, 95% CI: 1.69-5.47), provision of PNC appointment(AOR=3.58, 95% CI: 1.86-6.89) and awareness of PNC(AOR: 4.61, 95% CI: 2.23-9.53) had showed statistical significant association with PNC utilization. **Conclusion:** The proportion of PNC service utilization in this study was found to be low as compared to National Health Sector Transformation Plan postnatal coverage by the year 2020. To enhance PNC service utilization all responsible stakeholders could be work on awareness of PNC and all women should be given appointment by health care providers.

Keywords: Fogera Woreda, postnatal care utilization, prevalence, Women

1. INTRODUCTION

1.1 Background

World health organization stated that postnatal care is defined as a care given to the mother and her newborn baby immediately after the birth of the baby and for the first six weeks of life(1).

Healthy mothers and newborns should receive postnatal care in the facility for the first 24 hours after birth and At least three additional postnatal contacts are recommended for all mothers on day 3 (48–72 hours), between days 7–14 after birth, and at six weeks of birth(2). whereas Federal Ministry of Health (FMOH) of Ethiopia recommends PNC visits within 24 hours, 3 days, 7 days and 6 weeks(3).

Essential routine PNC for all mothers assess and check for bleeding, check temperature, Support breastfeeding, checking the breasts to prevent mastitis, Manage anemia, promote nutrition and give vitamin A supplementation. Provide counseling and a range of options for family planning, Refer for complications such as bleeding, infections, or postnatal depression, Counsel on danger signs and home care. Therefore appropriate detection, management, or referrals are necessary to save mothers and infants in the event of life-threatening complications(4).

Postnatal care for newborns includes daily chlorhexidine application to the umbilical cord stump during the first week of life, delay bathing until 24 hours after birth, skin-to-skin contact and immunization. All babies should be exclusively breastfeed from birth until 6 months of age, assess if there is any danger signs present and should be treated and referred for further evaluation and treatment(5)

Maternal mortality occurs from risks attributable to pregnancy and child birth as well as poor availability and quality of maternal health services. The major complications that account for nearly 75% of all maternal deaths are: severe bleeding (mostly bleeding after childbirth), infections (usually after childbirth), pre-eclampsia and eclampsia, complications from delivery and unsafe abortion(6).

A significant proportion of maternal and neonatal death occur during the first 48 hours after giving birth. As such, postnatal care is important to both mothers and neonates to manage complications arising after childbirth as well as to provide the mother with crucial

health information on how to care herself and her child(7). Providing optimal postnatal care is crucial to avert both maternal and neonatal death as well as long-term complications. For the mothers, the highest risk of death occurs after delivery, by the first hours and days after childbirth. It has been shown that 45% of the mothers and 50% of newborns who die do so in the first 24 hours after birth, 65% of the maternal and 75% of neonatal deaths occur within one week of the postpartum period(8).

However, In Africa, including Ethiopia most of mothers did not visit the health institution following birth, indicating that postnatal care programs are among the weakest of all reproductive health programs. In Ethiopia the impact of low coverage of postnatal care is reflected as high maternal mortality of 412 maternal deaths per 100,000 live births(9), and neonatal mortality rate of 30 per 1000 live births(10).

Ethiopia has given the urgent need to reduce maternal mortality rate to 199 maternal deaths per 100,000 and set a target of 95% postnatal coverage by 2019/20. providing appropriate postnatal care within 42 days following childbirth has the potential to dramatically avert maternal deaths through early identification of postnatal danger signs(11). According to the EMDHS 2019 the national and Amhara region coverage of postnatal care service utilization within the first two days after delivery is only 34% and 39.8%, respectively (10).

1.2 Statement of the problem

Globally, About 295 000 women died during and following pregnancy and childbirth in 2017 and approximately every day 810 women died from preventable causes related to pregnancy and childbirth(6). About 2.5 million neonatal deaths occurred in children aged less than 1 month which is one child in every 55 born(12).

Overall MMR of 216 maternal deaths per 100 000 live births(13). The MMR in developing regions 239 maternal death per 100000 live births which is 19 times higher than in developed regions 12 per 100000 live births since the developing world has the highest prevalence of maternal morbidity and mortality. Almost all 99% of maternal deaths occur in developing countries(7). Reduce global maternal mortality to less than 70 per 100,000 live births between 2016 and 2030 is one of international community's political agenda especially in view of the increased attention on the Sustainable Development Goals(14).

In developing countries no more than 36 percent receive PNC within two days of delivery(15). The World Health Organization (WHO) reports have shown that as a result of inadequate postnatal care services, most maternal and infant deaths occur in the first month after birth and almost half of postnatal maternal deaths occur within the first 24 hours, and 66% occur during the first week(5).

In Africa there was low utilization postnatal care (36%) within two days after gave birth(16). Due to this fact, Sub-Saharan Africa has the highest regional MMR (546) per 100,000 live births which accounts roughly 66%(13). Ethiopia is one of the countries in sub-Saharan Africa with markedly high MMR of 412 per 100000 live births(9), infant mortality rate of 43 per 1000 live births and neonatal mortality rate of 30 per 1000 live births(10).

Around 65% of maternal deaths and 75% of newborn deaths occur in the first seven days after birth, and around half of these deaths occur in the first one day due to lack of adequate postnatal care services. A newborn is about 500 times more likely to die in the first day of life than at one month of age and many women did not report their physical or psychological problems to health professionals or even to their family members which indicates that more and improved care is needed during postnatal period (17). In Ethiopia, if all new born receives appropriate postnatal care in the recommended time, neonatal mortality could be reduced by 10–27%(8)

In Ethiopia, the level postnatal care service utilization is a serious problem. Still the postnatal care service utilization is the major maternal and neonatal health problems in the country. The number of women and newborn died due to poor utilization of post natal care is significant(9). The economy lost and the crisis starting from individual health and income to the country's gross economy is huge and affecting the most productive groups of women makes the problem worse(6).

According to EMDHS 2019 survey, only 34% of women receive at least one postnatal care service from a health institution in the first 48 hours after birth and the majority of women (66%) in the preceding two years did not receive a postnatal checkup. Despite the fact that no previously done studies existed in the study area (Fogera woreda) on postnatal care service utilization and associated factors, EMDHS, 2019 report indicated that the level of postnatal care service coverage was low in Amhara region (39.8%) of mothers were received PNC service within 2 days after gave birth(10). Meanwhile, in the Health Sector Transformation Plan (HSTP) 2015/16 Ethiopian government set a target of 95% postnatal coverage by the year 2020(11).

Even though there were few studies conducted in Ethiopia which depicted the magnitude of postnatal care service utilization and associated factors, the determinants of utilization of PNC services are not the same across different cultures and socioeconomic status within a society. There were gaps especially in Amhara region(in Debremarkos and Debrebrhan) studies conducted were at urban areas and communities, not include rural areas and communities due to this reason there may be a difference in postnatal care service utilization and associated factors between urban and rural communities in socio demographic status, socio economic status, cultural factors and infrastructures.

So this study filled gaps by including rural areas and communities. Previously no research was conducted in the study area regarding postnatal care service utilization and its associated factors and, it is important to make additional studies to describe the magnitude and associated factors of postnatal care utilization. Therefore this study was conducted for the assessment of postnatal service utilization and associated factors among women who gave birth in the last one year prior to the study in Fogera woreda.

1.3. Significance of the study

This study provides information to health policy makers, health professionals and non-governmental organizations to combat the problem and design appropriate intervention. Should be provided awareness about postnatal care utilization for women and provide the service at home level through home to home visit especially by health extension workers.

This in turn helps for every stakeholders(programmers and implementers) who works on maternal health to focus their intervention and the findings of this study help as an important input to improve the PNC service utilization and to focus on the identified factors that influence women's utilization of postnatal care services in the study setting. It can also be used as a baseline for coming researchers in the study area.

2. LITERATURE REVIEW

2.1 Prevalence of postnatal care service utilization

According to studies across and within the countries the utilization of postnatal care service in different areas of the world showed that, a study conducted in rural area of Western Rajasthan, India 35.86% (18), Nepal 43.2% (19), Eastern Uganda 15.4%(20), Africa 36% (16), developing countries 36%(15), in rural Myanmar found that 25.2% of mothers are received full postnatal care service(21), in four Sub-Saharan African countries: Burkina Faso25%, Kenya 33%, Malawi 41% and Mozambique 40%(22).

A study done in Nepal found that 43.2% reported attending postnatal care within the first six weeks of birth(19). while in Uganda found that 50% received postnatal care in the first 2 days after childbirth(23). A study done in in Maiduguri, north-eastern Nigeria about Factors responsible for under-utilization of postnatal care services showed that 16.9% of them attended postnatal care services within 42 days after delivery(24).

According to EDHS 2016 report only 17% of mothers received the postnatal care services within two days after delivery (Sixteen percent of women received a postnatal check from a doctor, nurse, midwife or health officer and 1% from a health extension worker). Four in five women (81%) did not receive a postnatal checkup(9). A study done in Ethiopia for utilization of the service within 42 days after birth was 32% and not utilized is around 68%(25).

According to EMDHS 2019 report shows 34% of women reported receiving a PNC check-up in the first 2 days after birth. The proportion of women receiving a postnatal check-up within 2 days of delivery is higher in urban areas (48%) than in rural areas (29%), lowest in Somali (10%), highest in Addis Ababa(74%) and in Amhara region 39.8%(10).

A study done in Shebe Sombo district, Oromia region found that the proportion of women utilized for postnatal care service after delivery within 42 days of their last birth was 58.5%(26), in Ambo town 33.4%(27), and Gida Ayana Woreda, oromia region, 44.3% of women had at least one visit and 55.7% of the women who did not use any PNC services(28). Another study done in Benchi-Maji Zone, Southwest Ethiopia showed that 51.24% of women received postnatal care

service(29). Similarly in Halaba Kulito Town, 47.9% of the women utilized the PNC service (30).

The other similar studies in Mekele City, Tigray region, only 32.2% had visited PNC clinic at least once within 42 days of delivery(31), in East Wolega Zone, Oromia region, Western Ethiopia(33.1%) utilized postnatal care service after delivery within Six weeks of their last delivery(32), and Tigray regional state, showed 8% of the mothers received any postnatal care (33). The other study conducted in Debre Markos Town, Amhara region, showed the proportion of postnatal care service utilization within 42 days after delivery was 33.5%(34) and in Mertule Mariam District 19%(35).

2.2 Associated factors of postnatal care utilization

2.2.1 Socio-demographic factors

Among the other socio-demographic determinant risk factors, maternal age was significantly associated with non-utilization of PNC. Women aged 20–34 years and 35 years or older tended not to utilize PNC visits during their postnatal course compared with younger women (age 15–19 years) (28). Whereas study in Benchi-Maji Zone, Southwest Ethiopia found that Maternal age during pregnancy also showed significant association in which mothers in the age range of 20-24 during their pregnancy were greater than one and a half times more likely to attend PNC in comparison with mothers in the age group of 15-19 during their pregnancy (29).

study done in Uganda found that regarding to religion Muslim women were more received postnatal care services compared with Catholics and other religious followers(20). A study in north-eastern Nigeria showed that Women who were Christians were more likely to attend postpartum care than women who practiced Islam(36). Another Similar study in Benchi-Maji Zone, Southwest Ethiopia found that the probability of seeking PNC was six times higher among women who were following religion of Catholic and Hawariyat in comparison with those who follow Protestantism(29).

A study in north-eastern Nigeria showed that Married women were 3 times more likely to have received postnatal care services than the unmarried women(24). A study in Nepal showed that mothers who were educated were more likely to attend at least one postnatal care visit(19) and similarly in Uganda women with a secondary or higher education were more likely

to use early postnatal care compared with women with a primary education(20). The other studies in Assella town, Oromia region, Gida Ayana Oromia and Benchi-Maji Zone, Southwest Ethiopia also showed that mothers with high school levels of education had more postnatal care utilization than those who did not have formal education (28, 29, 37). Whereas in Halaba Kulito Town, Southern Ethiopia indicated that educational status of the women didn't determine PNC service utilization(30).

A study in Nepal showed that mothers who had agricultural occupation were less likely to have attended at least one postnatal care visit(19) and in Uganda Unemployed women had lower odds of attending postnatal care within 2 days after childbirth compared with women employed in the agricultural sector(20).

Another study in Nigeria found that women who were working utilized more postnatal care services than those who were not working, since they are not economically dependents on their partner, employed women used the postpartum care services more than those who were not employed(36). Another study in Mekele city, Tigray region factors associated showed that women who were private employees and business women were 6.46 and 3.34 times more likely to utilize postnatal care respectively in contrast to unemployed women and house wives(31) and also Mothers who were farmers were less likely to attend PNC In comparison with housewives(29).

The study in Nigeria found that significant relationship between place of residence and postnatal care attendance. It was showed that, women in urban areas used more postnatal care services than those in rural areas(36). In Uganda place of residence of women live in urban areas were more likely to use postnatal care than women in rural areas, at 63% versus 46%(20).

According to EDHS 2016 report 45% percent of urban women received a postnatal check-up within 2 days compared to 13% of rural women (9). Similarly, in Southwest Ethiopia mothers who were from semi-urban and rural areas were less likely to attend postnatal care in comparison with those from urban areas (29).

Regarding to partners educational status, in Nepal found that whose partners were educated were more likely to attend at least one postnatal care visit (19) and in north-eastern Nigeria showed women with husband's educated up to secondary school level and above were 2 times

more likely to had postnatal care than those with primary and/or no literate husbands (24). A study in Nepal also showed that women whose partners performed agricultural occupation were less likely to have attended at least one postnatal care visit(19).

2.3.2 Obstetrics and Reproductive related factors

and a study in north-eastern Nigeria showed that women who had fewer children and had received antenatal care were more likely to have used postnatal care services(24). A study in Nepal showed that mothers who had attended a four or more antenatal visits were attended at least one postnatal care visit than those who had no history of antenatal care visit (19). Similar study done in Uganda found that women who attended at least four ANC visits for their recent pregnancy had higher odds of attending postnatal care within 2 days after delivery compared with mothers who attended less than four ANC visits(20). Similar study in Zambia also found out that starting antenatal care in the second or third trimester made it less likely for women to use PNC compared to those who had their first antenatal care in the first trimester(38).

The other study in Ethiopia found showed that mothers who received more ANC components had higher odds of receiving PNC. Receiving more components of ANC implies that the mother is more likely to be informed about complications that may occur after delivery and thus recognize the importance of timely postnatal care(39) and in Addis Ababa, Ethiopia found that women who had gave birth more than one were three times more likely to have PNC than those women who gave birth only once(40). The other study done in Shebe Sombo, district, Oromia region showed mothers who had health problems before their last birth appear strongly interested to seek postnatal care than mothers who had no experience of obstetric complication. The possible explanation could be that mothers who had history of complication sign have practical experience about the life treating conditions than those who did not (33).

Similarly in Gida Ayana also showed that Women who did not faced any postnatal complications were more likely to not utilize PNC services than their counterparts who had faced at least one complication. Similar study in Asella Town, Arsi Zone, Oromiya Region showed that history of ANC follow up was one of the strongest predictors of postnatal care service utilization mothers who have history of ANC follow up use postnatal care service more than women who did not have ANC follow up(37), and also study in Lemo woreda, Southern Ethiopia revealed that ANC attendance before giving last birth is a strong predictor of PNC service utilization. Mothers who

have attended at least one ANC visit before giving their last birth were more likely to utilize PNC service than those mothers who have not attended ANC visit at all(41). Similarly in Tigray region of Ethiopia showed that from the obstetric variables, having more than 3 ANC visits and delivered by cesarean section increased the likelihood of attending postnatal care(33).

In Deberemarkos town mothers who gave birth by cesarean section were 4.8 times more likely to get postnatal care services than mothers who gave birth by spontaneous vaginal delivery(34), and also study in Mertule Mariam District, Amhara region the predictors for postpartum care uptake indicates mothers with four or more (≥ 4) ANC visits were more than 8 times (8.59) more likely to seek postpartum care than those mothers who had three or less ANC visits(35).

2.3.3 Health facility factors

A study in Nigeria showed that the identified health facility factors which influence on non-utilization of the service indicates distance to health facility and place of delivery were associated with lower odds of not utilizing PNC services(24). While a study conducted in Zambia found that women who delivered at the health facilities were far more likely to utilize PNC in the first 48 h than those who did not delivered at the health facility. Being attended to by skilled personnel during delivery predicted PNC utilization in the first 48 h. Women who had skilled attendance were twice more likely to utilize PNC in the first 48 h than who had not(38).

In Ethiopia strong evidence indicating that the use of postnatal care service was relatively high among women who received service from a skilled service provider, had access to a health facility in less than 5km and gave birth in health facilities(25). In Gida Ayana Woreda, oromia region for not utilizing PNC services showed that the postnatal women who lived in remote areas were more likely not to utilize PNC services compared with women who lived near health facilities(28).

A Study in Addis Ababa showed women who were discharged from the institution after delivery with less than 6 hours of stay were almost 80% less likely to have PNC than those women who stayed more than 24 hours(40), and another study in Halaba Kulito Town, Southern Ethiopia found mothers who gave last birth at Health center were 10.76 times and at Hospital were 13 times more likely to utilize PNC as compared to mothers who gave their last birth at home(30). Similar study in Asella Town, Arsi Zone, Oromiya Regional State, Ethiopia found out that

women who were counseled and given appointment for postnatal care service were utilized the PNC service more than those women who didn't informed about the PNC service on discharge by health care provider(37). Another study conducted in Diga District; East Wollega Zone found that mothers who gave birth in health institution are more likely to used PNC compared with who gave birth at home(32). The other similar study in Debrebrhan town found that significant variable which has an influence on utilization of PNC is place of delivery in which PNC services are found to be more likely utilized among mothers who delivered at a health facility than mothers who gave birth other than a health facility(42).

2.3.4 Postnatal care awareness factors

In Myanmar was found mothers who had good knowledge about postnatal danger signs were two times more likely to get full PNC than those who had low awareness(21). Study in Halaba Kulito Town, Southern Ethiopia indicates odds of PNC utilization among women who didn't aware for at least one danger signs of postpartum were less likely to received PNC as compared to women who aware at least one postpartum danger signs(30), and also similar study in Lemo District, South Ethiopia showed knowledge on potential postnatal danger sign and symptom had strong statistical association with PNC service utilization. Women who knew at least one postpartum obstetric danger sign were 4.5 times more likely to utilize postnatal care service than those who did not know(41).

Another study conducted In Diga District; East Wollega Zone found that women who had information on PNC service were more likely to utilize PNC service. A mother who knows at least one maternal danger sign were more likely to use PNC than mothers who did not know any maternal danger sign after delivery(32). Similarly in Mertule Mariam District women with a good knowledge status about postpartum care uptake was nearly 6 times (6.35) more likely to seek postpartum care than those with low level of knowledge(35).

Evidences showed that PNC services utilization is influenced by different factors as explained in literatures however, factors influencing PNC services utilization vary from place to place in relation to culture, socio demographic and socio economic status of given society. So that, this study was aimed to assess postnatal care utilization and associated factors among women who gave birth in the last 12 months prior to the study in Fogera woreda, Northwestern Ethiopia.

CONCEPTUAL FRAMEWORK

This conceptual framework (Figure1) was adapted from the research literatures. There are several categories of independent variables: socio demographic characteristics of mothers, reproductive factors (parity, outcome of birth, obstetric complication, mode of delivery, length of stay at health facility after delivery, ANC utilization); Health facility factors (place of delivery, delivery attending, advice on PNC, appointment given for postnatal care, distance of health facility). The dependent variable of the study is use of postnatal care services after gave birth. Analysis of direct association between the independent variables and the dependent variable were done for postnatal care attendance among women who gave birth.

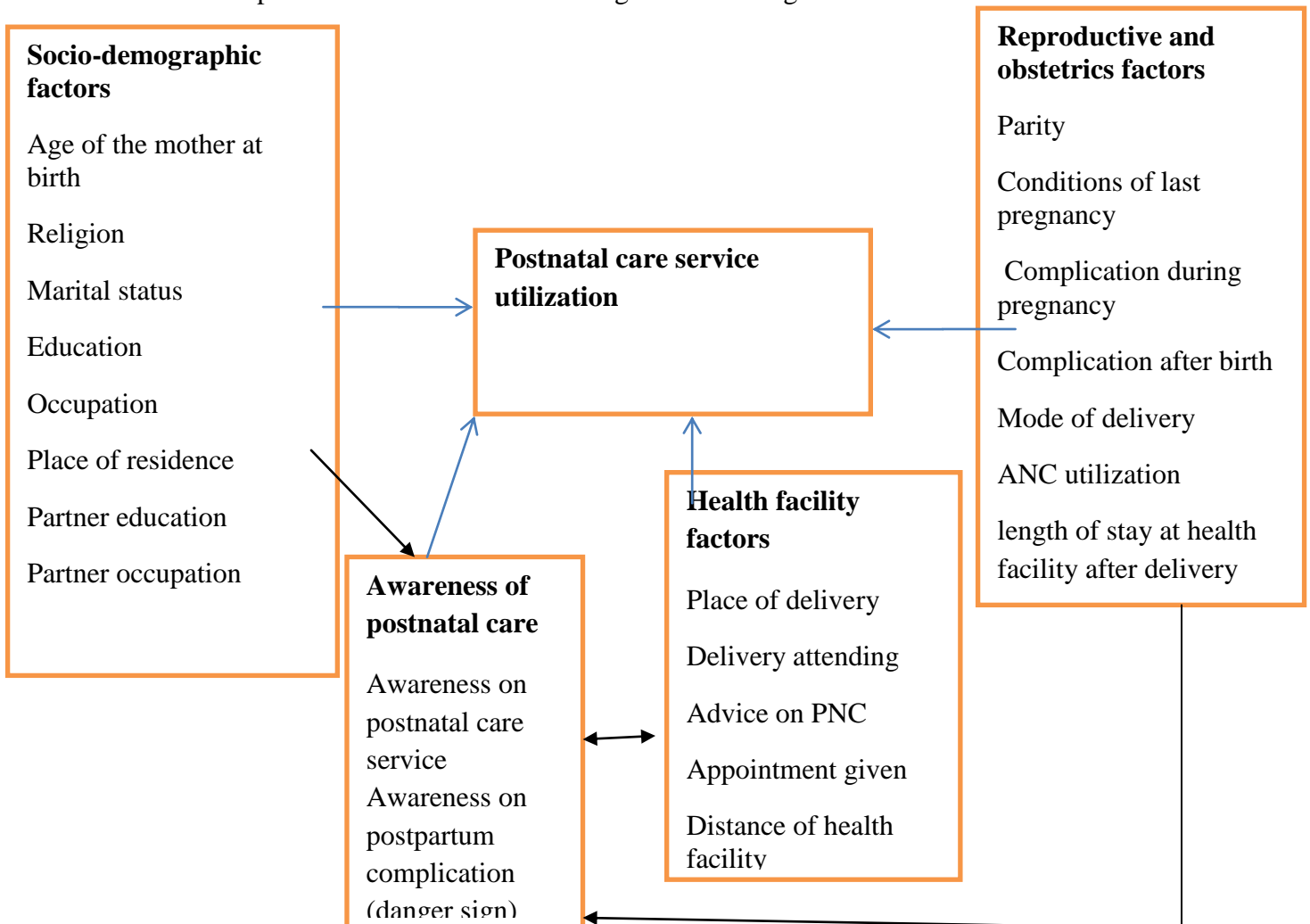


Figure1: conceptual framework to identify factors associated with postnatal care utilization which has been developed from different literatures reviewed (20, 30, 34, 35, 37-43).

3. OBJECTIVES

3.1 General objective:

- To assess the prevalence of postnatal care service utilization and its associated factors among women who gave birth in the last 12 months in Fogera Woreda, 2021.

3.2 Specific objectives:

- To determine the prevalence of postnatal care service utilization among women who gave birth in the last 12 months in Fogera Woreda
- To identify factors associated with utilization of post natal care service among women who gave birth in the last 12 months in Fogera Woreda.

4. METHODS AND MATERIALS

4.1 Study area and period

This study was conducted in Fogera district in south Gondar zone which is found in the northern part of Amhara regional state 56 Kilometers from Bahirdar, the main city of Amhara regional state and 624 kilometers away from Addis Ababa, the capital city of Ethiopia. The boundaries of fogera woreda are Libokemkem woreda in the north, Farta woreda in the east, Dera woreda in the south and Lake Tana in the west direction. The district is administratively structured into 30 rural kebeles and 2 urban kebeles. According to Central Statistical Agency the projected population of the woreda for 2019 G.C is 270,019 and around half of them were females (135014). The health infrastructures of the woreda comprises of 9 government health centers(one urban health center and 8 rural health centers) and 32 functional health posts as well as one medium private clinic,14 primary private clinics and two private drug stores. The numbers of mothers who were from 6 weeks to 12 months after they gave birth in the district in the past 12 month are 5829. This study was conducted from November 30/2020 to December 25/2021.

4.2 Study design

Community based cross sectional study design was conducted

4.3 Source population

All women who were from 6 weeks to 12 months after they gave birth prior to the survey in Fogera Woreda

4.4 Study population

All women who were from 6 weeks to 12 months after gave birth during data collection time and living in 10 selected kebeles.

4.5 Study unit

All selected or sampled women who were from 6 weeks to 12 months after gave birth during data collection time and delivered in 10 selected kebeles

4.6 Inclusion and Exclusion criteria

4.6.1 Inclusion criteria

Women who were from 6 weeks to 12 months after gave birth in selected kebeles

4.6.2 Exclusion criteria

Mothers who were critically ill

4.7 Variables of the study

4.7.1 Dependent variables

Postnatal care service utilization (Yes=1, No= 0)

4.7.2 Independent variables

Socio demographic characters: age of the mother at birth, religion, current marital status, educational status of mother, occupation of mother, place of residence of the mother, partner educational status and partner occupation

Maternal reproductive and obstetric factors: Parity, Mode of delivery, ANC utilization, pregnancy wantedness, length of stay in the facility after delivery, maternal obstetric or medical complication during pregnancy, maternal complication after giving birth

Health facility factors: distance of health facility, place of delivery, delivery attending and Advice, appointment given for postnatal care

Awareness of postnatal care: awareness on postnatal care and awareness on postpartum complications (danger signs)

4.8 Operational definition of terms and measurements

Postnatal period: The first six weeks starting immediately after the time of delivery.

Postnatal care service utilization: Mother who attends at least one PNC service or check up by health professional (midwife, nurse, health officer, and medical doctor) from health institution or health extension worker during the first six weeks starting immediately after the time of delivery and at any set up within the first 6 weeks of deliver (Yes=1 No=0).

Awareness of postpartum danger signs: a mother who mentions at least one maternal or neonatal potential danger signs (postpartum complications) that occurs after birth or during the postnatal period such as vaginal bleeding, fever, edema, unable to suck, vomiting everything (Yes =1 No =0)(2)

Awareness of postnatal care: If the mother mention at least one service from postnatal care services (heath care education on danger signs that can occur during postnatal period, counseling on breastfeeding and nutrition, childcare, immunization, family planning(Yes =1 No =0)(5)

Distance of health facility (Time travelling to get access of health facility): if the women were travelling less than one hour to get access of health post, it is accessible and if travelled more than one hour (on foot, horse) it not accessible to get health post.

Appointment given for PNC: If the mothers were given appointment for PNC services by health care providers during ANC, during delivery or during home visit by health extension worker (Yes=1 No=0)

4.9 Sample size determination and sampling technique

4.9.1 Sample size determination

Sample size is determined by using single population proportion formula by considering the following assumption:

- P=33.5%, proportion of women using postnatal care services 33.5% (34).
- 95% confidence level
- 5% precision (margin of error)
- design effect of 1.5 in order to account for inter cluster variability

$$\text{➤ } n = \left[\frac{\left(\frac{z_{\alpha/2} \right)^2 pQ}{d^2} \right]$$

Where

n= the desirable sample size

Z (a/2) =the critical value at 95% level of significance (1.96)

p=proportion of PN women with PNC utilization

d=precision of measurement (acceptable marginal error)

p=0.335

$$d=0.05 \quad n = \left[\frac{1.96^2 \times (0.335 \times 0.665)}{0.05^2} \right] \quad n = 343 \text{ and } 343 \times 1.5 \text{ design effect} = 515$$

Adding non response rate of 10% = 52 the total sample size n=567

Sample size for the second specific objective is calculated by using EPIINFO version7 with the following assumptions: Confidence interval = 95% Power of test 80%, Ratio (unexposed to Exposed), Outcome in unexposed group, 10% non-responder rate. Therefore the sample size with 10% of non-response rate was 214. The decision made by comparing the sample size in the first objective and second objective is the first objective yields the largest sample size which is 567, so, it is representative for both objectives. Therefore, sample size 567 in the first objective is considered as appropriate sample size for this study.

Table1: Sample size determination for the 2nd objective among women who gave birth in the last 12 months in Fogera Woreda, North West, Ethiopia, 2021

Factors	CI	Power (1-β)	Ratio	Proportion of outcome among unexposed	Proportion of outcome among exposed	Sample size,		Reference
						N	Sample size + NR	
Health facility delivery	95%	80	0.75	17.9	45.2	107	118	36
ANC utilization	95%	80	0.95	20.6	45.8	124	137	
C/S delivery	95	80	18	31	77.4	194	214	
Obstetric complication during pregnancy	95	80	4.4	20	54.9	160	176	

4.9.2 Sampling technique

Multistage sampling technique was used to select study participants. This study was conducted in 10 kebeles out of all 32 kebeles (one kebele from urban and 9 kebeles from rural) were selected from the district by simple random sampling technique using lottery method. A sample frame of each kebele was taken from the woreda health office. In the selected kebeles, there were 1715 mothers who are eligible (women who gave birth within the last one year prior to the study period).

The total sample size was proportionally distributed for those 10 kebeles based on their number of mothers who gave birth in the last 12 months from September 2019 to August 2020 to obtain required number of study subjects (figure2). Then list of eligible mothers who delivered in the selected kebeles were obtained from the health extension workers registration book of each kebele to serve as a sampling frame. Households of the study participants were obtained from the kebeles health extensions workers family folder document which contains list of household and labeling each household which had a mother who had given birth in the last year in the ten kebeles and selected by using systematic random sampling technique.

The first mother or household was selected by lottery method and then K value used. $K = N/n = 1715/567 = 3$ in every 3rd household mothers were interviewed in all selected kebeles starting from the first selected mother till the required sample size is achieved. For households with more than one eligible woman, interview was done for one of the mothers using simple lottery method and two visits were made for absences in the first visits.

Where K = the probable interval to select study subjects

N = Total number of subjects in study populations

n = number of study subjects

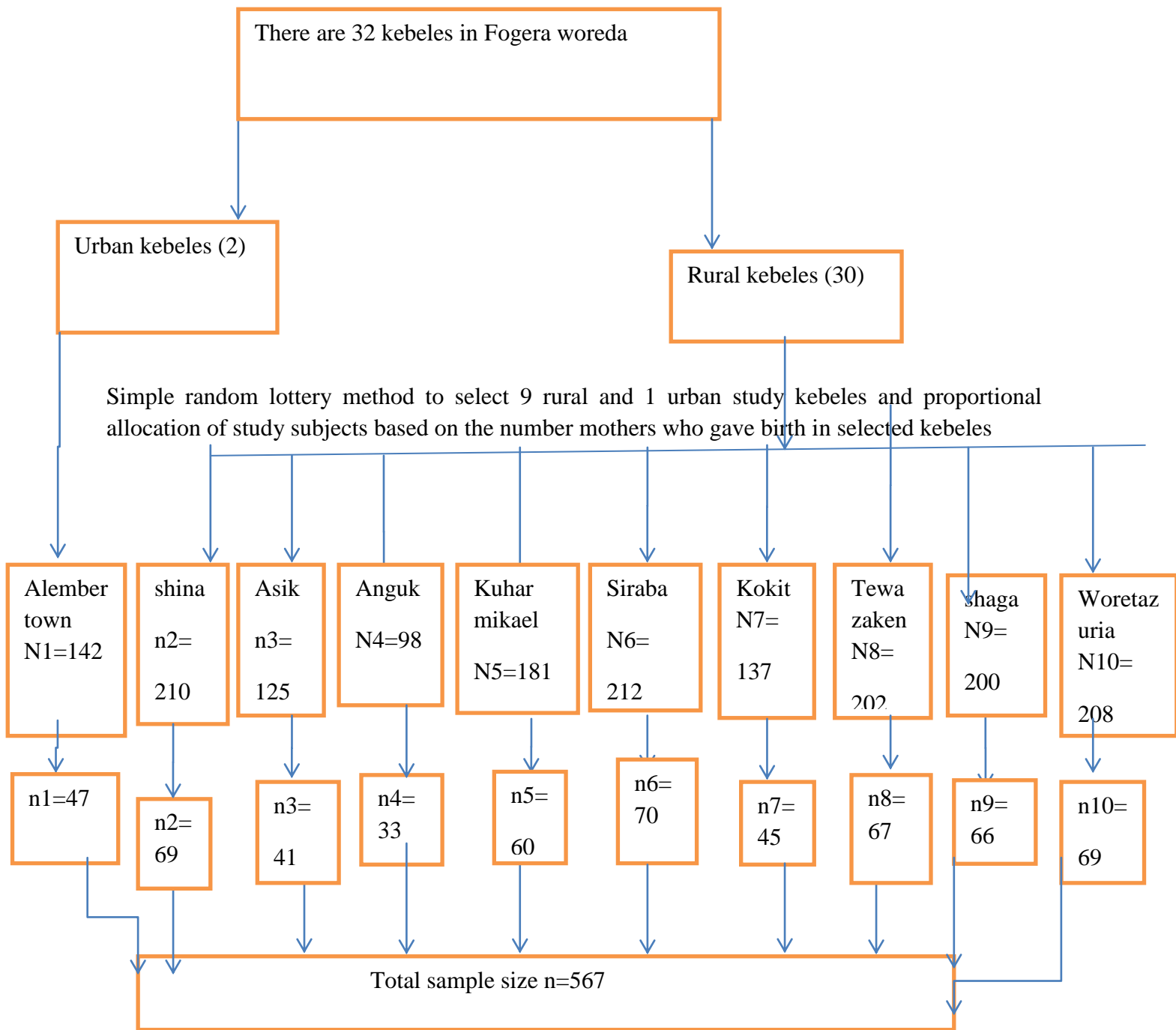


Figure2. Sampling procedure to study postnatal care use and factors associated with it among mothers who gave birth in the last 12 months in Fogera woreda, North West Ethiopia, 2021

4.10 Data collection tool

Data was collected from mothers using pretested Amharic version structured questionnaires with face to face interview administered questionnaire done by data collectors and principal investigator at the participants' home. The questionnaires were developed after review of different available scientific literatures and modified according to the study objective and has three parts, the first part containing socio demographic characteristics. The second part of the questionnaire was assessed the reproductive and obstetrics characteristics of the mother, health facility factors and postnatal awareness factors and the third part of the questionnaire was assessed outcome variables or the postnatal care service utilization. The questionnaire was adapted by reviewing literatures of similar studies aiming on postnatal care utilization and its associated factors (20, 30, 34, 35, 37-43).

4.11 Data collection process

The data was collected by 7 trained data collectors, 3 were diploma holder midwives and the remaining 4 were diploma holder clinical nurses. The data collection process was supervised by 4 BSc nurses having previous experience in data collection. On top of that there was continuous follow up and supervision by the principal investigator throughout the data collection period.

4.12 Data quality control

To get a qualified data from the study different techniques were employed to address major source of bias. First, questionnaires used for data collection were pre-tested on 5% of the sample size in none study kebele (chalma) 29 participants. In order to maintain quality of data, data collectors and supervisors were given a two day intensive training before the actual work about the aim of the study, procedures, data collection techniques, art of interviewing, ways of collecting data and clarification in data collection procedure. The questionnaire is also carefully designed and prepared in English language. The questionnaire was translated to local Amharic language and translated back to English to make it consistent. Amharic version is used to collect the data. The collected data was then reviewed and checked for completeness and consistency by supervisors and the principal investigator on a daily basis and the necessary feedbacks were offered to data collectors in the next morning by the principal investigator. All collected data

was entered into the computer, its accuracy; missed variables and completeness were checked carefully. If there were found any difficulties, necessary modifications were made based on the nature of gaps identified. Missed values and outliers were checked by using frequencies. The identified errors from frequency distribution were revised by referring the pre-coded document.

4.13 Data analysis

Data was entered, checked, coded, and analyzed by SPSS version-23 software. Descriptive statistics were used to determine the proportion of postnatal care utilization and to present and summarize the findings by using different variables. Cross-tabulations with chi square tests were run to determine the association between postnatal care utilization and the independent variables and binary logistic regressions analysis were performed. In the binary logistic regression, both bivariable and multivariable analyses were carried out. Crude and adjusted odds ratio with their 95% CI were calculated to determine the strength and presence of association. explanatory variables with a p value < 0.25 in crude analysis was considered as a candidate for multivariable analysis and those variables with a p value < 0.05 in multivariable analysis was considered as a significant predictor of postnatal care service utilization. Absence of multicollinearity among independent variables was checked and Hosmer-Lemeshow goodness-of-fit test was performed to test for the model's goodness-of fit and the model was fitted well (0.24). Finally, the result of the analysis was presented in texts, tables and graphs as appropriate.

4.14 Ethical considerations

Ethical clearance was obtained from Bahir Dar University, College of Medicine and Health Sciences Institutional Review Board (IRB). Official letter of co-operations were provided to Woreda health office. A formal letter of cooperation and permission was obtained from Fogera woreda health office and provided to each kebele and health posts prior to data collection. The respondents were informed about the purpose of the study & their oral and written consent were obtained. The respondents' rights to refuse or withdraw from filling out the questionnaire were fully maintained. The information provided by each respondent was kept strictly confidential and all participants were treated equally during data collection.

5. RESULTS

5.1 Socio demographic characteristics of the participants

In this study a total of 567 women were participated and the response rate was 100%. Two hundred fifteen (37.9%) of the participants were found between the age of 20 to 29 years. The mean age of the participants was 31.8 years (+SD=7.45). Five hundred twenty seven (92.9%) of them were orthodox Christian followers and 513 (90.5%) of them were married during delivery. With respect to level of education 314 (55.4%) were unable to read and write and 97(17.1%) of the respondents had primary school education. Concerning the mothers occupational status, 434(76.5%) were farmers. Concerning their husbands 'educational status, 235 (41.4%) were unable to read and write and 75(13.2%) attended primary education and 419 (80.8%) of the respondents husbands were farmers by occupation.

Table2: Socio demographic characteristics of the women who gave birth in the last 12 months in Fogera woreda, North West Ethiopia, 2021 (N= 567)

Variable	Frequency	Percent
Age		
<20	37	6.5
20-29	215	37.9
30-39	213	37.6
40-49	102	18.0
Marital status during delivery		
married	513	90.5
single	12	2.1
divorced	37	6.5
widowed	5	0.9
Religion		
orthodox	527	92.9
Muslim	28	4.9
Adventist	12	2.1
Educational status		
cannot read and write	314	55.4
can read and write	117	20.6
elementary school	97	17.1
secondary school	33	5.8
college and above	6	1.1

Occupational status		
housewife	94	16.6
government employed	10	1.8
farming	434	76.5
merchant	29	5.1
Husband education(n=513)		
cannot read and write	235	45.8
can read and write	161	31.39
elementary school	75	14.6
secondary school	20	3.9
college and above	22	4.3
Husband occupation(n=513)		
farmer	414	80.7
government employed	22	4.29
merchant	60	11.7
daily laborer	17	3.31

5.2 Reproductive and obstetric characteristics of respondents

About 256(45.1%) of the respondents had parity of four and above. More than half 432 (76.2%) of them had a planned and wanted pregnancy. Four hundred forty six (78.7%) of the mothers had ANC follow up at least once during their last pregnancy. Out of all the respondents, A significant number of mothers faced complications during pregnancy 48 (8.5%) and after delivery 142 (25%). The most common obstetric complications faced by mothers during pregnancy and after delivery were pre-clampsia 24 (50%) and PPH 56 (39.7%) respectively

Table3: Reproductive and Obstetric characteristics of women who gave birth in the last 12 months in Fogera woreda, North West, Ethiopia, 2021(N=567)

Variables	Frequency	Percent
parity of the study participant		
Para I	113	19.9
Para II-III	198	34.9
Para IV and above	256	45.1
Types of last pregnancy		
Planned and wanted	432	76.2
Unplanned and wanted	132	23.3
Unplanned and unwanted	3	.5
ANC visit during last pregnancy		
No	121	21.3
Yes	446	78.7
Number of ANC(n=446)		
One times	38	8.52
Two times	110	24.67
Three times	166	37.2
Four times and above	132	29.7
Maternal complication during last pregnancy		
No	519	91.5
Yes	48	8.5
Type of maternal complication occurred during last pregnancy(n=48)		
APH	2	4.1
Preeclampsia/eclampsia	24	50
Cardiac illness	9	18.8
Others	13	27
Maternal(delivery)complication faced after giving birth		
No	425	75.0
Yes	142	25.0

Type of maternal(delivery)complication faced after giving birth(n=142)

PPH	56	39.7
Headache	40	28.4
High grade fever	41	29
Offensive vaginal discharge	2	1.4
Others	3	1.4

5.3 Health facility and postnatal care awareness characteristics of respondents

Regarding to place of delivery, 245(45.1%) of the respondents were delivered in health institution, 257(45.3%) of them were delivered by health professionals or skilled birth attendants and 508(89.6%) of the respondents were give birth through Spontaneous vaginal delivery. More than half 339(59.8%) of the participants' were not given appointment for postnatal care. Regarding to time travelling to access to health facilities, more than half 306 (54%) the respondents were travelling for 1-2 hours to get access for health facilities.

About 299(52.7%) of the respondents' were not received advice on danger signs that occur during postpartum period. More than half 345(60.8%) of the participants' had awareness about postnatal care and 317(55.9%) of the participants' replied that they had awareness on danger signs of postnatal period or after give birth.

Table4: Health facility and postnatal care awareness characteristics of women who gave birth in the last 12 months in Fogera woreda North West Ethiopia, 2021(N=567)

Variables	Frequency	Percent
place of delivery of study participant		
Health institution	256	45.1
Home	311	54.9
Delivery attendants		
Health professionals	257	45.3
Traditional birth attendants/family	295	52.0
By herself	15	2.6
Mode of delivery		
Spontaneous vaginal delivery	508	89.6
Assisted(instrumental) delivery	27	4.8
Caesarian section	32	5.6

Advice given on danger signs during postpartum period		
No	299	52.7
Yes	268	47.3
Appointment given for PNC		
No	339	59.8
Yes	228	40.2
Time travelled to access health facility		
<1hour	251	44.3
1-2hours	306	54.0
>2hours	10	1.8
Had awareness about PNC		
No	345	60.8
Yes	222	39.2
Had awareness about danger signs after give birth		
No	250	44.1
Yes	317	55.9

5.4 Proportion of postnatal care service utilization

From total respondents, 300(52.9%) mothers were utilized postnatal care services with confidence interval of (48.9–57.1). Concerning place of postnatal care, 58(19.3%), 194(64.6%) and 48(16%) of the respondents were obtained postnatal care from Hospital, Health Center and by health extensions at home (health post) respectively.

Regarding to the frequency of postnatal care visit, 118(39.3%) of participants had visited once, 110(36.7%) women had two times, 43(13.3%) women had three times and the remaining 29(9.7%) were having four or more times. The proportion of postnatal care visit within 24 h, b/n 25 to 48 hours, 49 to 72 hours at 3–7 days and 8 days to six weeks of postpartum were 254(84.7%),44(14.3%) 49(16.3%), 68(22.7%) and 171(57%) respectively.

Concerning types of service utilization or what was done for the women during the postnatal visit, one-hundred twelve (37.3%) of the respondents had physical examination, 177(59%) of the participants were advised on danger signs of the mother after delivery during postnatal period, 79(26.3%) utilized family planning, two hundred thirty five (78.3%) of them were measured for vital signs, 56.3% of them were counseled for maternal and infant nutrition and 67(22.3%) of them were treated for maternal complication occurred after delivery.

Concerning what was done for the baby is 76.6% of the babies had received immunization, 20.9% of women were counseled about danger signs of their baby, and 2.5% of the babies had received other services.

Table5: Proportion and Characteristics of Postnatal Care Utilization of respondents who gave birth in the last 12 months in Fogera woreda North West Ethiopia, 2021(N=567)

Variables	Frequency	Percent
Did you have get postnatal care(n=567)		
Yes	300	52.9
No	267	47.1
Place of postnatal care(n=300)		
Hospital	58	19.3
Health center	194	64.6
By health extension at home(health post)	48	16
Postnatal care within 24 hours(n=300)		
Yes	254	84.7
No	46	15.3
Postnatal care b/n 25 to 48 hours(n=300)		
Yes	44	14.7
No	256	85.3
Postnatal care b/n 49 to 72 hours(n=300)		
Yes	49	16.3
No	251	83.7
Postnatal care from 3 to 7 days(n=300)		
Yes	68	22.7
No	232	77.3
Postnatal care from 8 days to 6 weeks(n=300)		
Yes	171	57
No	129	43
Number of postnatal care visit(n=300)		
One times	118	39.3
Two times	110	36.7
Three times	43	14.3
Four times and above	29	9.7
Did your baby was with you during your postnatal care visit(n=300)		
Yes	282	94
No	18	6
What was done for your baby during postnatal care visit(n=282)		
advice about danger signs of the baby	59	20.9
immunization	216	76.6
other	7	2.5

Different reasons were given by the participants for not attending postnatal care services. The most common reason mentioned by the participants for not using postnatal care service or the major reasons explained by these women were due to lack of information or advice 46.06% and being apparently health during postnatal period 20.6% and culture influence (culture is allowed us to go to health facility before 40 days after delivery) 17.6%. (Figure 3)

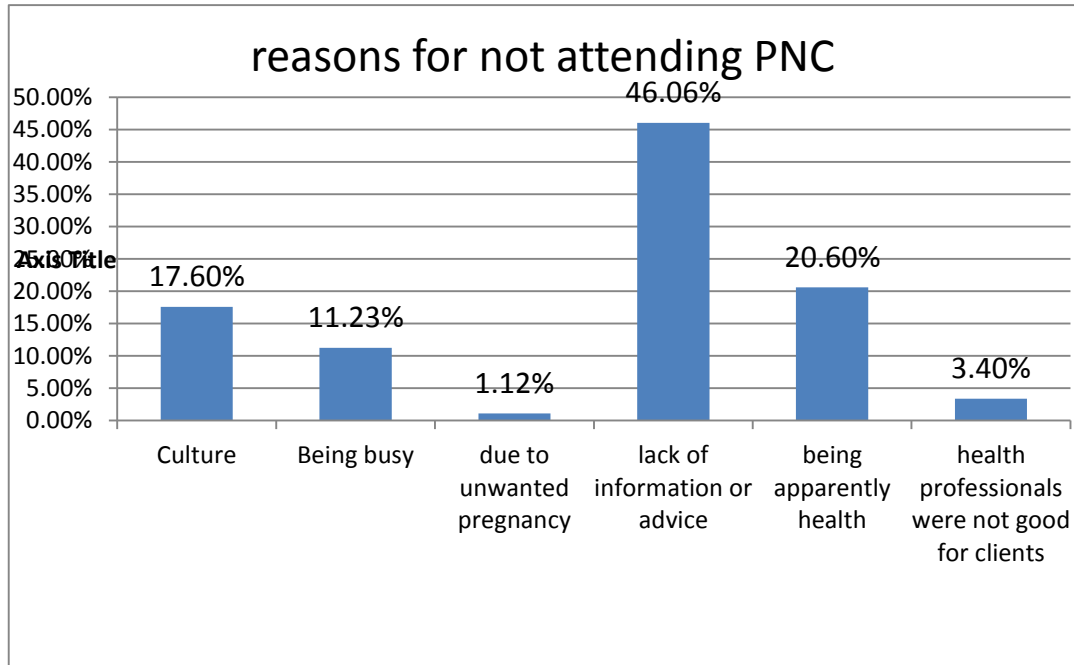


Figure 3: Reasons for not attending postnatal care services given by the study participants at Fogera woreda, North West Ethiopia, February, 2021 (N=267).

5.5 Factors associated with postnatal care utilization

During bivariate logistic regression analysis, those variables who had P-values of less than 0.25 were entered to multivariable logistic regression. Out of all independent variables categorized under Socio demographic, reproductive and obstetrics, postnatal awareness characteristics, nine variables namely age of the participant, educational status of the participant, occupational status of the respondents, , time travelling to reach health facility, types of last pregnancy, maternal complication faced after delivery, whether or not PNC appointment given, whether or not advise given on danger signs that occur during postnatal period by the health care provider and awareness of PNC had showed p-values of less than 0.25. After we entered these 9 variables in to multivariable binary logistic regression model the following six variables educational status of primary school and above, time travelling to get access of health facility, conditions of last pregnancy, maternal complication faced after delivery, provision of PNC appointment and awareness of PNC had showed statistical significant association with PNC utilization.

The odds of PNC service utilization among women with primary school and above by education were 3 times (AOR: 3.55, 95% CI: 1.45-8.63) higher compared to those who couldn't read and write. The odds of having postnatal care visit for those women who were travelling less than one hour to get health facilities were four times(AOR: 4.28, 95% CI: 2.59-7.08) higher compared to those women who were travelling more than one hour. Mothers whose types of last pregnancy was planned and wanted were 2 times (AOR: 1.97, 95% CI: 1.10-3.54) more likely to get postnatal care service when compared with mothers of their last pregnancy is unplanned and unwanted.

Moreover, women who have faced maternal complications that can occur during postpartum period were 3 times (AOR: 3.04, 95% CI: 1.69-5.47) were more likely to use postnatal care services than mothers who did not have maternal complications. Mothers who were given appointment for postnatal care utilization had 3 times (AOR=3.58, 95% CI: 1.86-6.89) more likely to utilize postnatal care than those women who didn't given appointment by the health care providers. Those mothers who had awareness about postnatal care service were 4 times (AOR: 4.61, 95% CI: 2.23-9.53) more likely to use postnatal care service than mothers who had not awareness.

Table6: Multivariable Binary Logistic regression analysis of factors associated postnatal care utilization of the Women who gave birth in the last 12 months in Fogera woreda, North West Ethiopia, 2021(N=567)

Variables	PNC utilization (proportion)		COR(95%CI)	AOR(95%CI)
	Yes	No		
Age of the mothers				
<20	18	19	1.59(0.74, 3.41)	0.44(0.12, 1.62)
20-29	143	72	3.34(2.04, 5.46)	1.58(0.73, 3.43)
30-39	101	112	1.51(0.93, 2.46)	1.32(0.66, 2.63)
40-49	38	64	1	
Educational status of mothers				
cannot read and write	124	190	1	1
can read and write	65	52	1.91(1.24, 2.94)	0.96(0.52, 1.78)
elementary school and above	111	25	6.8(4.17, 11.09)	3.55(1.45, 8.63)*
Occupation of mothers				
Farming	202	232	1	1
House wife	65	29	2.57(1.59, 4.14)	1.14(0.548, 2.39)
Others	33	6	6.31(2.59, 15.38)	1.58(0.48, 5.13)
How much time you will travelled to access health facility				
< 1 hour	192	59	6.26(4.31, 9.10)	4.28(2.59, 7.08)*
>1 hour	108	208	1	1
Conditions of last pregnancy				
Planned and wanted	265	167	4.53(2.94, 6.97)	1.97(1.10, 3.54)*
Unplanned and unwanted	35	100	1	1
Maternal complication faced after delivery				
Yes	106	36	3.50(2.29, 5.35)	3.04(1.69, 5.47)*
No	194	231	1	1
Advice given on danger signs during PN period				
Yes	206	62	7.24(4.98, 10.53)	1.32(0.76, 2.31)
No	94	205	1	1
Appointment given for PNC				
Yes	197	31	14.56(9.34, 22.69)	3.58(1.86, 6.89)*
No	103	236	1	1
Had awareness about PNC				
Yes	197	25	18.51(11.50, 29.79)	4.61(2.23, 9.53)*
No	103	242	1	1

* Significantly associated with p value < 0.05

1. Reference category

6. DISCUSSION

This community based cross-sectional study tried to assess postnatal care service utilization and associated factors of postnatal care utilization among women who gave birth in the last one year prior to the study period in Fogera woreda. The result showed that among the 567 postpartum mothers, 300(52.9%) of them obtained PNC during the six weeks following delivery. This finding is in line as compared with a study done in Lemo Woreda, Hadiya Zone (51.4%)(41) and in Benchi-Maji Zone, Southwest Ethiopia (51.24%)(29). This finding is also consistent with a study in Uganda(50%)(23) and in sub-Saharan Africa countries 52.48%(44).

But this study finding is higher than studies conducted in Ambo town, oromia region Ethiopia(33.4%), Gida Ayana Woreda, oromia region 44.3%, in Halaba Kulito Town, 47.9% respectively(27, 28, 30). This might be happened due to the time difference and the presence of diverse intervention to improvement in accessing and utilizing maternal health care service through time. The other possible explanation for these differences may be increased governmental focuses from year to year in order to improve maternal and neonatal health (immunization services were improved).

This finding is also higher than the 2019 EMDHS national 34% and Amhara regional report 40%(10). The possible reason for this difference might be explained as the EMDHS included women who received PNC within two days of delivery while this study includes women who received PNC within 6 weeks of delivery. And, it is higher also when compared to studies conducted in rural area of Western Rajasthan, India 35.86% (18), Nepal 43.2%(19), four Sub-Saharan African countries: Burkina Faso 25%, Kenya 33%, Malawi 41% and Mozambique 40%(22). The possible reason to the discrepancies might be due to the existence of health system infrastructure (the presence of one health post at each kebele), time differences, and geographical factors and might be due to the unique nature of Ethiopia utilizing health extension workers.

Postnatal care services utilization in this study was lower than the study done in Shebe Sombo district, Oromia region found that the proportion of women utilized for postnatal care service after delivery within 42 days of their last birth was 58.5%(26), in Debrebrhan town, 83.3%(45), in Arsi, Oromia region, 72.7%(37) and in Addis Ababa, 65.6%(40). This discrepancy might be associated with the variation in the study areas and study subjects because mothers of those study areas included only urban residents while our study includes both women who live in urban and

rural areas. Hence, women who live in urban areas are at a greater advantage of getting education opportunity and maternal health care services and women in the urban areas may get easy access to health facility and health professionals as compared to their counterparts. And also Mothers of this study area are less educated and less aware of the importance of postnatal care service utilization. The utilization of postnatal care service in this study is also lower than a study done in Benin 68.4%(46) and Zambia 63%(38). The possible explanation for this difference or variation could be due to methodology difference, implementation of the service, and accessibility of health organizations.

The key associated factors for PNC utilization in our study were women with primary school and above education level, time travelling to get access of health facility, Mothers whose conditions of last pregnancy, maternal complication faced after delivery, provision of PNC appointment and awareness of PNC.

According to this study, the odds of PNC service utilization among women with primary school and above by education were 3 times higher compared to those who couldn't read and write. This finding is consistent with the study done in Tigray, Ethiopia(33), Assella town Oromiya(37), Northern Ethiopia(47). The possible reasons for this similarity might be due to the fact that once a women is educated, her autonomy and decision making skill on her health and postnatal care services utilization is high. Similarly, uneducated mothers have no chance to participate in different social positions, decision making and women's empowerment. Additionally, education helps to increase mothers' level of awareness and provides better education to women regarding postnatal care services utilization.

The second factor of predicting postnatal care service utilization is time travelling to get access of health facility for postnatal care. Women who were travelling less than one hour to get health facilities were four times more likely to use PNC than those women who were travelling more than one hour. This finding is similar with a study done in Oromia region showed that the postnatal women who lived in remote areas were more likely not to utilize PNC services compared with women who lived near health facilities(28), in Adigrate, Tigray mothers that accessed the nearest health facility at less than one hour distance had increased use of PNC (48), Ethiopia(49) and Uganda(23). The reason behind may be when health facilities are distant, access to routine maternal health services and emergency care is reduced due to relatively high

costs in paying for transport system (when available) and lengthy travel time(50), and long distances limit the willingness and ability of postpartum women to seek postnatal care due to the physical difficulties of travel and high costs of transport(6).

The third major factor predicting postnatal care service utilization was types of last pregnancy. Mothers whose types of last pregnancy was planned and wanted were 1.97 times more likely to get postnatal care service when compared with mothers of their counterparts. This finding is supported by a study done in Tigray(33), Northern Ethiopia(47), India(51) and Benin(46). This could be justified that when the desire of pregnancy is planned and wanted the demand of obtaining maternal health care or postnatal care is increased due to the interest to have healthy child changes health seeking behavior in PNC utilization. And also this could be explained by various advantages public enlightenment about desire for pregnancy. Once the pregnancy is desired, mother and father may be well prepared and will be more likely to welcome the newborn in joy and more preoccupied by its health and survival.

The other major factor predicting postnatal care service utilization was maternal complication faced after delivery. Women who have faced maternal complications that can occur during postpartum period were 3 times more likely to use postnatal care services than mothers who did not have maternal complications. This finding is similar with the studies done in Deberemarkos town, Amhara region(34) and in Adigrate, Tigray region(48). And also this study was supported by a study in rural western Ethiopia indicated that women who had experienced postnatal complications after their last birth were much more likely to visit health facility for PNC services than those who had not encountered any complications(28). This might be because those mothers who faced complication while giving birth were given special emphasis by health personnel regarding health education and could be scheduled more seriously for postnatal care follow-up. Furthermore it might be due to exposure of complication increase fear of additional health complication and increase interest in checkup.

The other major factor predicting postnatal care service utilization was provision of PNC appointment. Women who were given appointment for postnatal care utilization had 3 times more likely to utilize postnatal care than those women who didn't given appointment by the health care providers. This finding is supported by the studies done in Arsi, Oromia region found that those women who were counseled and given appointment for postnatal care service were

utilized the PNC service higher than those who did not given appointment about the PNC service(37), in Shebe Sombo district, Oromia region (26) and Addis Ababa (40). This could be explained as a positive effect of health information on postnatal care appointment during counseling sessions for postpartum mothers on changing behavior and practice for health care service utilization.

The last factor predicting postnatal care service utilization was mothers' awareness of postnatal care. Those mothers who had awareness about postnatal care service were 4 times more likely to use postnatal care service than mothers who had not awareness. Similarly a study done in Mertule Mariam District, Amhara region found that mothers who have knowledge of PPC were more likely to utilize postpartum care uptake than those who have not(35), and in Debrebrhan town, Amhara region found that Women who had awareness of the postnatal services did utilize the PNC service two times higher than those women who were not adequately informed about the PNC service(45).

This finding is also consistent with studies done in Shebe Sombo district, Oromia region(26), in East Wolega Zone(32), in Lemo Woreda, Hadiya Zone(41), in Tigray region(33) and in rural western Ethiopia(28). This was also supported by the reason given by the women who did not utilize during this study. This finding can be justified that the PNC service utilization is strongly influenced by the awareness of women on postnatal care benefits. This is due to the fact that mothers with good awareness about postpartum care would have perception of benefits of PNC than those who did not have. They seek postnatal care because they know the advantage of receiving PNC for their health.

This finding is also in agreement with results from various developing countries (52-54). This could be explained by the role of awareness in increasing demand of basic health services and health risks, leading to improved health-seeking behavior in postnatal care utilization(6).

Age, occupational status of participants and husbands, religion, marital status, place of residence, ANC utilization these factors and others were not the determinant factors of PNC utilization during this study.

7. LIMITATIONS OF THE STUDY

Mothers who gave birth in the last 12 months are included in the study; due to this reason there might be a possibility of some recall bias.

8. CONCLUSION

The proportion of PNC service utilization in this study was low as compared to the Ethiopian government Health Sector Transformation Plan or National target of postnatal care coverage by the year 2020. Educational status of primary school and above, time travelling to get access of health facility, types or wantedness of last pregnancy, maternal complication faced after delivery, provision of postnatal care appointment, and awareness of postnatal care was found to be statistically significant for the current postnatal care service utilization.

9. RECOMMENDATIONS

To health professionals

- Should be provided awareness about postnatal care utilization for women and should be provided the service at home level through home to home visit especially by health extension workers.
- Should be provided awareness about PNC for mothers, even if they did not have maternal complications after the gave birth.
- Health professionals should give PNC appointment and counsel about postnatal care service and its benefit during ANC and delivery.

To Health facilities and Woreda health office

- Should give emphasize for the improvement of PNC utilization
- Should give focus or strengthen health care providers on PNC appointment

To Regional Health Bureau

- Should give emphasize for the improvement of PNC utilization.

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11. APPENDIXES

11.1 Appendix i. Information sheet

Deep greetings, my name is -----

I temporarily represent Bahir Dar University, College of Medicine and Health Science, School of Public Health, Department Of Health System Management And Health Economics here the mission justified below why I am here.

Title of the research project: Assessment of Postnatal care service utilization and Associated Factors among Women Who Gave birth in the last 12 months prior to the study in Fogera Woreda, North West Ethiopia

Name of Investigator: Tekle Gedefaw Abera

Name of the Organizations: Bahir Dar University

Purpose of the study: To determine the prevalence of postnatal care service utilization and to identify associated factors among women who gave birth in the last 12 months prior to the study in Fogera Woreda. The study is helpful in determining the prevalence of postnatal care utilization and to find out its predictors in those women who gave birth in Fogera Woreda. It helps to design appropriate intervention strategies. The study will provide base line information for concerned bodies and for further research. .

Procedure: To assess the prevalence and factors associated with postnatal care utilization, we invite you to take part in this project. If you are willing to participate in this project, you need to understand and give us your written consent. Then after, you will be interviewed by the data collector to give your response. You do not need to tell your name to the data collector and all your responses and the results obtained will be kept confidentially by using coding system whereby no one will have access to your response.

Potential risk/discomfort: By participating in this research project, you may feel that it has some discomfort especially on wasting time about 15 minutes during interview with the data collection. We hope you will participate in the study for the sake of the benefit of the research result. There is no risk in participating in this research project.

Benefits of the study: If you participate in this research project, there may not be direct benefit to you but your participation is likely to help us in assessing prevalence and factors of post natal care utilization in Fogera woreda. Ultimately, this will help us to work on it.

Incentives: You will not be provided any incentives or payment for participation in this project.

Confidentiality: The information collected from this research project will be kept confidential and information about you that will be collected by this study will be stored in a file, without your name, but a code number assigned to it and it will not be revealed to anyone except the investigators and will be kept locked with key.

Right to Refuse or Withdraw:

You have full right to refuse from participating in this research. You can choose not to respond to some or all questions. If you do not want to give your response, you have also the full right to withdraw from this study at any time you wish, without losing any of your right.

Person to Contacts: If you want to know more information about this study, you can contact the following organization and individuals at any time.

Organization - Bahir Dar University, Department of Health System Management and Health Economics P.Box-----Bahir Dar, Ethiopia

Individuals Tekle Gedefaw Abera phone no....0960783724 [Email..tekle.gedefaw@yahoo.com](mailto:tekle.gedefaw@yahoo.com)

11.2 Appendix ii: Consent sheet

Code No-----

Bahirdar University, College Of Medicine and Health Sciences, School Of Public Health, Department Of Health System Management and Health Economics Questionnaire for Assessment of Postnatal Care Utilization and Associated Factors among Women who gave birth in the last 12 months in Fogera woreda, Northwest Ethiopia.

Good Consent form morning /afternoon My name is----- , I am working as data collector in this study that assess postnatal care service utilization and associated factors in Fogera woreda for an investigator doing his thesis for the partial fulfillment of Master's degree in General Master of Public at Bhirdar University, Ethiopia. It is my pleasure to notify you that you have been identified to participate in this study. I am doing the research on those mothers who gave birth in the last twelve months. I am going to ask you few questions which are very important and related to postnatal care utilization. Your name will not be written in this form and the information you will give to us is kept confidential. If you do not want to answer all or some of the questions, you do have the right to do so. However, your willingness to answer all of the questions would important to the organization and the mother be appreciated. It doesn't take more than 15 minutes.

Would you participate in study? Yes -----No-----If the answer is yes, Thanks!
Conduct If the answer is no, Thanks! Transfer to the next respondent.

Signature of participant _____

Name and Signature of the data collector who sought the consent _____

Date of interview _____

Name and signature of the supervisor _____

Date _____

11.3 Appendix iii: Questionnaires (English version)

Bahirdar University, College of Medicine and Health Sciences, School Of Public Health,
Department of Health System Management and Health Economics

This checklist is prepared to assess prevalence of postnatal care service utilization and associated factors among women who gave birth in the last 12 months in Fogera woreda

Data collector name ----- signature----- date-----

Supervisor name -----signature-----date-----

Women's Code No-----

Part I. Socio-Demographic Characteristics of the Mother

S.N	Questions	Response	Skip/go
101	age of the mother	-----	
102	Marital status	<ol style="list-style-type: none"> 1. Married 2. single 3. Divorced 4. Widowed 	
103	Religion	<ol style="list-style-type: none"> 1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Other, specify 	
104	Educational status	<ol style="list-style-type: none"> 1. cannot read and write 2. can read and write 3. elementary school level 4. secondary school level 	

		5. college and above	
105	Occupation	<ol style="list-style-type: none"> 1. house wife 2. government employed 3. farming 4. private employed 5. merchant 6. daily laborer 7. other, specify 	
106	Husband educational status	<ol style="list-style-type: none"> 1. Cannot read and write 2. Can read and write 3. Elementary school level 4. Secondary school level 5. College and above 	
107	Husband occupation	<ol style="list-style-type: none"> 1. Farmer 2. Government employed 3. Merchant 4. Private employed 5. Daily laborer 6. Other,specify 	
108	Place of residence	<ol style="list-style-type: none"> 1. Urban 2. Rural 	
109	How much time you will be travelled to get access of health facility	<ol style="list-style-type: none"> 1. <1hour 2. 1-2 hours 	

		3. >2 hour	
Part II Reproductive, Obstetrics, health facility and postnatal knowledge Characters of Mother			
110	Parity	<ol style="list-style-type: none"> 1. paraI 2. paraII-III 3. paraIV and above 	
111	Nature of last pregnancy	<ol style="list-style-type: none"> 1. planned and wanted 2. unplanned and wanted 3. unplanned and unwanted 	
112	History of ANC visit	<ol style="list-style-type: none"> 1. yes 0. no 	0 skip 113
113	Number of ANC visit	<ol style="list-style-type: none"> 1. one times 2. two times 3. three times 4. four times 5. five times and above 	
114	Maternal obstetric or medical complication during last pregnancy	<ol style="list-style-type: none"> 1.yes 0. no 	0. skip 115
115	Type of Maternal obstetric or medical complication during last pregnancy	<ol style="list-style-type: none"> 1. APH 2. Preeclampsia/Eclampsia 3. Cardiac illness 4. Other, specify 	

116	Maternal complication faced after delivery	1. yes 0. no	0.skip 117
117	Type of maternal complication faced after delivery	1. Heavy vaginal bleeding 2. Severe headache 3. High grade fever 4. Offensive vaginal discharge	
118	Place of delivery	1. Health Institution 2. Home	
119	Delivery attended by	1. Health professional 2. Traditional birth attendant/family 3. By herself	
120	Mode of delivery	1. spontaneous vaginal delivery 2. instrumental delivery 3. cesarean section delivery	
121	Advice given for any danger signs during post natal period	1. yes 0. no	
122	Did Mother stay for 24 hours after delivery in the health facility	1. yes 0. no	
123	Did you given appointment for PNC based on the schedule within 42 days of delivery	1. yes 0. no	

124	Did you have awareness about postnatal care service	1. yes 0. no	
125	Did you have awareness about danger signs and complication come after give birth	1. yes 0. no	
Part III outcome variables			
126	Did you have PNC visit	1. yes 0. no	0 skip 128-136 1.skip 127
127	If the answer for QNO 126 is no what was the reason	1. culture 2. being busy 3. pregnancy unplanned 4. lack of information(advice) about PNC 5. being apparently healthy 6. health professionals were not good for clients	
128	If the answer for QNO 126 is yes where did you get the service	1. hospital 2. health center 3. private clinic 4. by health extension worker 5. other	

129	Postnatal care within 24 hours after delivery	1. yes 0. no	
130	Postnatal care visit from 25-48 hours after delivery	1. yes 0. no	
131	Postnatal care visit from 49-72 hours after delivery	1. yes 0. no	
132	Postnatal care visit from 3 days to 7 days after delivery	1. yes 0. no	
133	Postnatal care visit from 8 days to 6 weeks after delivery	1. yes 0. no	
134	Number of postnatal care visit	1. one times 2. two times 3. three times 4. four times and above	
135	What was done during the postnatal care visit, more than one answer is possible	1. Physical examination 2. Laboratory investigations 3. Advise on danger signs 4. Family planning 5. measuring vital signs 6. Advise on nutrition 7. treatment of complications 8. other, specify	

136	Did your baby was with you during your postnatal care visit	1.yes 0.no	0.skip 137
137	If yes for QNO-138 what was done for your baby	<ol style="list-style-type: none"> 1. Physical examination 2. Laboratory investigation 3. Advise on danger signs of the baby 4. Immunization 5. Other, specify 	

11.4. Appendix iv: Amharic version tools

ቅጽ 1. ስለ ጥናታዊ ጽሁፍ ገላጭ ሁኔታዎች

እኔ -----በባህር ዳር ዩኒቨርሲቲ የህብረተሰብ ጤና ትምህርት ክፍል የሁለተኛ ዲግሪ የጠቅላላ ህብረተሰብ ጤና ተማሪ ስሆን የመመረቂያ ጥናታዊ ጽሁፍ በመስራት ላይ እገኛለሁ። ዛሬም ከዚህ የተገኘሁበት ምክንያት ይህን ጥናታዊ ጽሁፍ በተመለከተ ግልጽ ለማድረግና ተገቢውን መረጃ ለማጠናቀር ነው። የጥናታዊ ጽሁፉን በተመለከተ እንደሚከተለው ተብራርቷል።

የጥናቱ ርዕስ፡- በፎገራ ወረዳ የሚወልዱ እናቶች ስንቶቹ የድህረ ወሊድ ክትትል እንደሚያደረጉ ለማወቅና ከዚህ ጋር ተያያዝ ነገሮችን ለማወቅ ጥናት ማድረግ ነው።

ጥናቱን የሚያካሂደው ባለሙያ- አቶ ተክሌ ገደፋው አበራ ይባላል።

የተቋሙ ስም፡- ባህር ዳር ዩኒቨርሲቲ ይባላል

የጥናቱ አላማ፡- በፎገራ ወረዳ የሚወልዱ እናቶች ስንቶቹ የድህረ ወሊድ ክትትል እንደሚያደረጉ ለማወቅና ከዚህ ጋር ተያያዝ ነገሮችን ለማወቅ/መለየት ሲሆን ጥናቱም ጉዳዩ ለሚመለከታቸውና ለተጨማሪ ጥናትና ምርምር መነሻ መረጃ የሚሰጥ ይሆናል።

የጥናቱ ቅደም ተከተል፡- ለዚህ ጥናት እርሰው መስፈርቱን አሟልተው በመገኘታዎ ተመርጠዋል። በጥናቱ ለመሳተፍ ፈቃደኛ ከሆኑ የጥናቱን አላማ በተገቢው ከተረዱ በኋላ ፈቃደኛ ስለመሆነዎ በፊርማዎ የሚያረጋግጡልን ይሆናል። የተለያዩ መረጃዎችን ለማተናቀር የተደራጁ ቃለመተይቶች የተዘጋጁ ሲሆን እነኝህን ቃለመጠይቶች በተቻለ መጠን እርሰው በአግባቡ እንዲመልሱልን በትህትህና እንጠይቀውታለን።

የጥናቱ የጎንዮሽ ጉዳትን በተመለከተ፡-ጥናቱ ምንም አይነት ጉዳት የለውም። ምን አልባት ቆይታዎ 15 ደቂቃ ሊወስደበዎት ይችላል

የጥናቱ ጥቅም እርሰው በጥናቱ ለመሳተፈው በቀጥታ የሚከፈለው የማካካሻ ክፍያ የለም ።

የመረጃው ታማኝነት፡- ከዚህ ጥናት የሚገኙ ማንኛውም መረጃ ሙሉ በሙሉ ታማኝ ይሆናል። አጠቃላይ መረጃው የሚተነተነው ፣ ግብረመልስ የሚሰጠውና ውጤቱን የሚያሳውቀው ጥናቱን

በሚያካሂደው ሰው ብቻ ሲሆን የግል መረጃዎች በሙሉ በተሳታፊው እና ጥናቱን በሚያካሂደው ሰው መካከል የሚጠበቁ ይሆናል።

በጥናቱ የመቀጠልና ጥናቱን የማቋረጥ መብት፡- በዚህ ጥናት መሳተፍ በሙሉ ፈቃደኝነት ላይ የተመሰረተ ሲሆን በጥናቱ ላይ የመቀጥል፣ በማንኛውም ጊዜ በጥናቱ ከመሳተፍ በከፊልም ሆነ ሙሉ-በሙሉ የማረጋገጥ፣ ካቋረጡ በኋላ የመቀጠል፣ ለጥናቱ የሚሆኑ ቃለ መጠይቆችን ያለመመለስ ሙሉ መብት አለው።

ትክክለኛ መረጃ መስጠት ለጤና መሻሻል እንዲረዳ ለማሳሰብ እወዳለሁ።

ተጨማሪ መረጃ የሚፈልጉ ከሆነ በሚከተለው አድራሻ የሚፈልጉትን ሰው ማነጋገር ይችላሉ።

በባህር ዳር ዩኒቨርሲቲ የህብረተሰብ ጤና ትምህርት ክፍልን

ግለሰብ፣- አቶ ተክሌ ገደፋው አበራ ስልክ- 0960783724

ኢ. ሜል- tekle.gedefaw@yahoo.com

የተሳታፊ የመጨረሻ ዉሳኔ

ተቀብየዋለሁ

አልተቀበለኩትም

Consent Form (Amharic Version)

ቅጽ 2 የሚስጥር አጠባበቅ ስምምነት

የተሳታፊ መለያ ቁጥር-----

ጤና ይስጥልኝ

እኔ _____ እባላለሁ። በባህር ዳር ዩኒቨርሲቲ የህብረተሰብ ጤና ትምህርት ክፍል የሁለተኛ ዲግሪ የጠቅላላ ህብረተሰብ ጤና ተማሪ ስሆን የመመረቂያ ጥናታዊ ጽሁፍ በመስራት ላይ እገኛለሁ። ፤እርስዎም በዚህ ጥናት ላይ እንዲሳተፉ በትህትና ይጠየቃሉ። ይህም የእናቶችን የጤና አሰጣጥ አገልግሎት ለማሻሻል ይረዳል። ይህ የጥናት ጥያቄ ቃለመጠየቅ 15 ደቂቃዎችን ይፈጃል። በዚህ ጥናት ለመሳተፍ ፈቃደኝነትዎን እንጠይቃለን። ከዚህም በተጨማሪ በዚህ ጥናት ላይ በከፊልም ሆነ በሙሉ ያለመሳተፍ መብትዎ የተጠበቀ ነው። በዚህ ጥናት ላይ ለመሳተፍ ፈቃደኛ ከሆኑ ጥያቄዎችን በአጠቃላይ ነጥቦች በማንሳት እጀምራለሁ። ትክክለኛ መረጃ መስጠት ለጤና መሻሻል እንዲሚረዳ ለማሳሰብ እወዳለሁ።

በጥናቱ ለመሳተፍ ፈቃደኛ ነዎት?

- 1. አዎ- መልሱ አዎን ከሆነ ወደ ሚቀጥለው ጥያቄ እለፍ/ፊ
- 2. የለም- መልሱ የለም ከሆነ አመስግነለሁ ብለህ/ሽጥያቄውን አቋርጧል/ጥ/

ለጥናቱ ፈቃደኝነቱን ያረጋገጠው ፊርማ በሚስጥር አጠባበቅ ስምምነት እንደሰጠ ያረጋግጣል።

ፊርማ-----ቀን-----

መረጃ ሰብሳቢ ስም-----ፊርማ-----ቀን-----

ተቆጣጣሪ ስም-----ፊርማ-----

የአማርኛ መጠይቆች

ቅጽ 3 መረጃ መሰብሰቢያ ቅጽ

በጥናቱ ለመሳተፍ ፈቃደኛ ነዎት? መልሱ አዎን ከሆነ ወደ ሚቀጥለው ጥያቄ እለፍ/ፊ መልሱ የለም ከሆነ አመስግነለሁ ብለህ/ሽጥያቄውን አቋርጫ/ጥ/

መረጃውን የሞላው ስም-----ፊርማ-----ቀን-----

ያረጋገጠው ሱፐርቫዥር ስም-----ፊርማ-----ቀን-----

ኮድ -----

ተ.ቁ	ጥያቄ	ምላሽ	እለፍ
	ክፍል አንድ		
101	የእናት እድሜ	-----	
102	የጋብቻ ሁኔታ	1. ያገባች 2. ያላገባች 3. የተፋታች 4. በሞት የተለያዩ	
103	ሀይማኖት	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላ ካለ ይገለጽ	

104	የእናት የትምህርት ደረጃ	<ol style="list-style-type: none"> 1. ማንበብና መጻፍ የማትችል 2. ማንበብና መጻፍ የምትችል 3. አንደኛ ደረጃ የተማረች 4. ሁለተኛ ደረጃ የተማረች 5. ዲፕሎማና ከዛ በላይ የተማረች 	
105	የእናት የስራ ሁኔታ	<ol style="list-style-type: none"> 1. የቤት እመቤት 2. የመንግስት ሰራተኛ 3. አርሶ አደር 4. የግል ተቀጣሪ 5. ነጋዴ 6. ሌላ ካለ 	
106	የባለቤትነት የትምህርት ደረጃ	<ol style="list-style-type: none"> 1. ማንበብና መጻፍ የማይችል 2. ማንበብና መጻፍ የሚችል 3. አንደኛ ደረጃ የተማረ 4. ሁለተኛ ደረጃ የተማረ 5. ዲፕሎማና ከዛ በላይ የተማረ 	
107	የባለቤትነት የስራ ሁኔታ(ያገቡ ከሆነ)	<ol style="list-style-type: none"> 1. አርሶ አደር 2. የመንግስት ሰራተኛ 3. ነጋዴ 4. የግል ተቀጣሪ 5. የቀን ሰራተኛ 	

108	የምትኖረበት ቦታ	1. ከተማ 2. ገጠር	
109	ከምትኖረበት ቦታ እስከ ጤና ኤላወ ያለው ርቀት በእግር ጉዞ ምን ያህል ነው(ምን ያህል ጊዜ ይፈጃል)	1.ከ 1 ሰአት በታች 2.ከ 1-2 ሰአት 3.ከ 2 ሰአት በላይ	
	ክፍል ሁለት		
110	ምን ያህል ጊዜ ወልደሻል	1. 1 ጊዜ 2. ከ2-3 ጊዜ 3. 4 እና ከዛ በላይ	
111	ለመጨረሻ ጊዜ የነበረሽ የእርግዝና ሁኔታ	1. የታቀደና የሚፈለግ 2. ያልታቀደ ግን የሚፈለግ 3. ያልታቀደና የማይፈለግ	
112	የቅድመ ወሊድ አገልግሎት ክትትል ነበረሽ	1. አዎ 0. አልነበረኝም	0.ከሆነ 1137 አለፍ
113	የቅድመ ወሊድ ክትትል ካላሽ ለምን ያህል ጊዜ ነው	1. አንድ ጊዜ 2. ሁለት ጊዜ 3. ሶስት ጊዜ 4. አራት ጊዜ 5. ከአምስት ጊዜ በላይ	
114	በእርግዝና ወቅት ከእርግዝና ጋር የተያያዘ	1.አወ	0.ከሆነ 1157

	ወይም ሌላ የጤና ችግር ነበረብሽ	0. አልነበረብኝም	እለፍ
115	በእርግዝናሽ ወቅት ምን አይነት የጤና ችግር ነበር	1. የደም መፍሰስ 2. ደም ግፊት 3. የልብ ህመም 4. ሌላ ካለ ይጠቀስ	
116	ከወለድሽ በኋላ የተከሰተ የጤና ችግር ነበር	1. አወ 0. አልነበረም	0. ከሆነ 117ን እለፍ
117	ከወለድሽ በኋላ ያጋጠመሽ የጤና ችግር ምን ነበር	1. በማህጸን የሚወጣ ከባድ የሆነ የደም መፍሰስ 2. ከባድነ ራስ ምታት 3. ከፍተኛ የሆነ የሰውነት ትኩሳት 4. ሽታ ያለው በማህጸን የሚወጣ ፈሳሽ 5. ሌላ ካለ ይገለጽ	
118	ስትወለጅ የት ነበር የወለድሽ	1. በጤና ተቋም 2. ከቤት 3. ወደ ጤና ተቋም በመሄድ ላይ እያለች	
119	ስትወለጅ በማን ነው የተዋለድሽ	1. በጤና ባለሙያ 2. በልምድ አዋላጅ/ በቤተሰብ ድጋፍ 3. በራሴ	
120	እናት የወለደችበት ሁኔታ	1. በቀጥታ በብልት በኩል 2. በመሳሪያ የታገዘ በብልት በኩል 3. በአፕራሲ/በቀዶ ጥገና	

121	ከወሊድ በኋላ ስለሚከሰቱ አደገኛ ምልክቶች ምክር ተሰጥቶቻል	1. አዎ 0. አልተሰጠኝም	
122	ከወለድሽ በኋላ ለ24 ሰዓት በጤና ተቋሙ ቆይተኛል	1. አዎ 0. አልቆየሁም	
123	ከወለድሽ በኋላ በ42 ቀናት ውስጥ በተቀመጠው የክትትል ፕሮግራም መሰረት የድህረ ወሊድ ክትትል እንድታደርገው ቀጠሮ ተሰጥቶቻል	1. አዎ 0. አልተሰጠኝም	
124	ስለ ድህረ ወሊድ አገልግሎትና ክትትል እውቅና አለሽ(ተነግሮኛል)	1.አዎ 0.የለኝም	
125	ከወሊድ በኋላ ስለሚከሰቱ የጤና ችግሮች እውቅና አለሽ	1.አዎ 2.የለኝም	
	ክፍል ሶስት		
126	የድህረ ወሊድ ክትትል አለሽ	1. አዎ 0. የለኝም	0.ከሆነ ከ128-136ን እለፍ 1.ከሆነ 127ን

			እለፍ
127	ለጥያቄ ቁጥር 126 መልሱ የለኝም ከሆነ ምክንቱ ምንድን ነው.	<ol style="list-style-type: none"> 1. የባህል ተጽእኖ 2. በስራ ብዛት ምክንያት 3. ያልታቀደ እርግዝና ስለሆነ 4. ስለ ድህረ ወሊድ ክትትል እውቅና ስለሌለኝ 5. ጤነኛ ነኝ ብዬ ሰለማስብ 6. የጤና ባለሙያዎች አገልግሎት አሰጣጥ ጥሩ ስላልሆነ 	
128	ለጥያቄ ቁጥር 126 መልሱ አዎ ከሆነ የት ነበር ክትትል ያደረግሽ	<ol style="list-style-type: none"> 1. ሆስፒታል 2. በጤና ጣቢያ 3. በግል ክሊኒክ 4. በጤና ኤክስቴንሽን 	
129	ከወለዱ በኋላ በ24 ሰዓት ውስጥ የድህረ ወሊድ አገልግሎት አግኝተሻል	<ol style="list-style-type: none"> 1. አዎ 0. አላገኘሁም 	
130	ከወለሽ በኋላ ከ25-48 ሰዓት የድህረ ወሊድ አገልግሎት አግኝተሻል	<ol style="list-style-type: none"> 1. አዎ 0. አላገኘሁም 	
131	ከወለድሽ በኋላ ከ49-72 ሰዓት የድህረ ወሊድ አገልግሎት አግኝተሻል	<ol style="list-style-type: none"> 1. አዎ 0. አላገኘሁም 	

132	ከወለሽ በኋላ ከ3-7ኛው ቀን የድህረ ወሊድ አገልግሎት አግኝተሻል	1. አዎ 0. አላገኘሁም	
133	ከወለሽ በኋላ ከ8-42ኛው ቀን የድህረ ወሊድ አገልግሎት አግኝተሻል	1. አዎ 0. አላገኘሁም	
134	እናት ጠቅላላ ስንት ጊዜ የድህረ ወሊድ አገልግሎት አግኝተሻል	1. አንድ ጊዜ 2. ሁለት ጊዜ 3. ሶስት ጊዜ 4. አራት ጊዜና በላይ	
135	በድህረ ወሊድ ክትትል ጊዜ የተሰጠሽ አገልግሎት ምንድን ነው ከአንድ በላይ መልስ መስጠት ይቻላል	1. ሙሉ የሰውነት ምርመራ 2. የላቦራቶሪ ምርመራ 3. ስለአደገኛ ምልክቶች ምክር 4. ስለእርግዝና መከላከያ ይደመጠቀም 5. የደም ግፊት፣ ሙቀት፣ አተነፋፊ ስና የልብ ምት ልኬታ 6. ስለእናትና ህጻን አመጋገብ ምክር 7. ከወለድ በኋላ ባጋጠመ የጤና ችግር ህክምና አገ/ት 8. ሌላካለ ይገለጽ	
136	በአንች ክትትል ጊዜ ህጻኑ/ኗ አብሮ ነበር	1. አዎ 0. አልነበረም	0. 137ን እለፍ

137	ህጻኑ አብሮ ከነበረ ምን አገልግሎት ተሰጠዉ	<ol style="list-style-type: none"> 1. ሙሉ የሰውነት ምርመራ 2. የላቦራቶሪ ምርመራ 3. ልጅ ላይ ሊከሰቱ የምችሉ አደገኛ ምልክቶች ምክር 4. ክትባት 5. ሌላካለይ ግለፅ..... 	
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እሽ ቃለ መጠይቁን ጨሻለሁ ለነበረን ቆይታ አመሰግናለሁ፡፡

11.5 Appendix v: Declaration

I, the under signed, declared that this is my original work, has never been presented in this or any other University, and agrees to accept responsibilities for the scientific ethical and technical conduct of the research project and for provision of required progress report.

Principal investigator

Name: Tekle Gedefaw Abera

Signature: _____

Date: _____

BAHIR DAR UNIVERSITY
COLLEGE OF MEDICINE AND HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH, DEPARTMENT OF
HEALTH SYSTEM MANAGEMENT AND HEALTH ECONOMICS
APPROVAL OF THESIS REPORT FOR DEFENSE

I hereby certify that I have supervised, read, and evaluated this thesis titled “ **postnatal care service utilization and associated factors among women who gave birth in the last 12 months in Fogera woreda, North west Ethiopia**” by Tekle Gedefaw prepared under my guidance. I recommend the thesis to be submitted.

_____	_____	_____
Advisor’s name	Signature	Date
_____	_____	_____
Co-Advisor’s name	Signature	Date
_____	_____	_____
Department Head	Signature	Date

EXAMINER’S APPROVAL FORM

BAHIR DAR UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

DEPARTMENT OF HEALTH SYSTEM MANAGEMENT AND HEALTH
ECONOMICS

Approval of thesis for defense result

We hereby certify that we have examined this thesis entitled **“Postnatal care service utilization and associated factors among women who gave birth in the last 12 months in Fogera woreda, North west, Ethiopia”** by Tekle Gedefaw (BSC)

We recommend and approve the thesis a degree of “_____”

Board of Examiners

_____	_____	_____
External examiner’s name	Signature	Date
_____	_____	_____
Internal examiner’s name	Signature	Date
_____	_____	_____
Chair person’s name	Signature	Date

