

Institute of Health Science, Faculty of Public Health

Determinants of postnatal care service non-utilization in Demba
Gofa rural district, Southern Ethiopia

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Jimma, Ethiopia

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Abstract

Background: Maternal and neonatal mortality remains a major problem across much of the developing world especially Sub-Saharan Africa. In Ethiopia, even though most maternal and infant deaths occur during postpartum, it is the most neglected period of care provision. In Ethiopian rural community, utilization of postnatal care service is very low but evidence on factors contributing to non-utilization of postnatal care is insufficient.

Therefore, this study was to assess factors that deter postnatal service utilization, fill some of the gaps of previous studies and add knowledge to solve bottlenecks in postnatal service utilization.

Objective: To identify the determinants of postnatal service non-utilization among mothers who gave birth from July 1 to Dec 31/2018 in Demba Gofa rural district, Southern Ethiopia.

Methods and materials: A community based unmatched case-control study was conducted among 372 mothers (cases=186 and controls=186) who were in the 6th week to 6 months after delivery during data collection period. A pretested questionnaire was used for data collection. Complete data entered to Epi Data version 3.1 and export to SPSS version 21 for analysis. Bivariate analysis was performed; Odds Ratios (ORs) and their 95% Confidence Intervals (CIs) were calculated. Then, multivariable logistic regression was used to control for possible confounders. P-value less than 0.05 were considered statistically significant.

Result: In this study, 186 cases and 186 controls were interviewed. Ever not hearing about PNC (AOR: 5.25, 95% CI: [2.09, 13.19]), home delivery (AOR: 8.01, 95%CI: [4.23, 15.20]), women not know postnatal danger signs (AOR: 3.40, 95% CI: [1.80, 6.39]), unable to make independent decision (AOR:9.34 , 95% CI: [3.18, 27.39]), and being not model family graduate (AOR:5.65, 95 % CI: [2.84, 11.23]) were found to have higher chance of not utilizing postnatal care service.

Conclusion: Encouraging institutional delivery along with integrated health education about postnatal care and postnatal danger signs, empowering women to execute independent decision about their PNC utilization and strengthening model family graduation will improve postnatal care service utilization.

Keywords: Determinants, Postnatal care, non-utilization, Demba Gofa rural district; Southern Ethiopia

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Table of Contents

Abstract.....	iii
Acknowledgement.....	iv
Abbreviations and Acronyms	viii
CHAPTER 1: INTRODUCTION.....	1
1.1. Background.....	1
1.2. Statement of the Problem.....	2
CHAPTER 2: LITERATURE REVIEW.....	5
Conceptual Framework.....	11
Significance of the study:.....	12
CHAPTER 3: OBJECTIVE.....	13
CHAPTER 4: METHODS AND MATERIALS	14
4.1. Study area and period.....	14
4.2. Study design.....	14
4.3. Population	14
4.4. Sample size determination and Sampling technique.....	15
4.4.1. Sample size	15
4.4.2. Sampling procedures.....	16
4.5. Study variables.....	18
4.6. Operational definition	19
4.8. Data collection procedures.....	20
Data collection technique:.....	21
4.9. Data quality management.....	21
4.10. Data management and analysis	22
4.11. Ethical consideration.....	22
CHAPTER 5: RESULTS.....	24
CHAPTER 6: DISCUSSION	35
CHAPTER 7: CONCLUSION AND RECOMMENDATION	38
Annexes	42
English Version Questionnaire	42

List of tables

Table 1: Sample size result from Epi info soft software	16
Table 2 : Socio-demographic and economic characteristics of study participants in Demba Gofa rural district, 2019.....	24
Table 3 : Knowledge and attitude related factors among postnatal mothers in Demba Gofa rural District, 2019.....	27
Table 4 : Health system related characteristics in Demba Gofa rural district, 2019	27
Table 5: Reproductive and obstetric characteristics of participants in Demba Gofa rural district, 2019	28
Table 6 : Bi-variate analysis of association between socio-demographic, cultural and economic related candidate variables and postnatal care service non-utilization among mothers in Demba Gofa rural District, 2019	29
Table 7 : Bi-variate analysis of association between knowledge, attitude and reproductive related candidate variables and postnatal care service non-utilization among mothers in Demba Gofa rural District, 2019	30
Table 8 : Bi-variate analysis of association between health system related candidate variables and postnatal care service non-utilization among mothers in Demba Gofa rural District, 2019	32
Table 9 : Association between postnatal care service non-utilization and statistically significant variables in the final multiple logistic regression model among mothers in Demba Gofa rural District, 2019	34

List of figures

Figure 1 : Conceptual framework of determinants of postnatal care service utilization in Demba Gofa district, southern Ethiopia 2019	11
Figure 2 : Schematic diagram of sampling size and sampling procedure for face to face interview of women to identify determinants of postnatal service non-utilization in Demba Gofa district, 2019	17
Figure 3: Bar graph depicting power of mothers in making decision about their postnatal service utilization among postnatal service utilizers and non-utilizers in Demba Gofa district, 2019	26

Abbreviations and Acronyms

ANC	Antenatal Care
CSA	Central Statistical Agency
EDHS	Ethiopian Demographic and Health Survey
ESPS	Ethiopian Society of Population Studies
FMOH	Federal Ministry of Health
HH	Household
HSTP	Health Sector Transformation Plan
ICF	International Classification of Functioning disability and health
IRB	Institutional Review Board
LMIC	Low and Middle-Income Countries
MMR	Maternal Mortality Ratio
PMTCT	Prevention of Mother to Child Transmission
PNC	Postnatal Care
PSU	Primary Sampling Units
SDG	Sustainable Development Goal
SNNPR	Southern Nations Nationalities and Peoples Region
SPSS	Statistical software for social science
SSA	Sub-Saharan African
SSU	Secondary sampling units
TBA _s	Traditional birth attendants
UNIA	Universal Negro improvement association
WDA	Women Development Army
WHO	World Health Organization

CHAPTER 1: INTRODUCTION

1.1. Background

Postnatal care is the care provided to women and newborn in the first six weeks after birth. According to World Health Organization recommendation, after an uncomplicated vaginal birth in a health facility, healthy mothers and newborns should receive care in the facility for at least 24 hours after birth. If birth is at home, the first postnatal contact should be as early as possible within 24 hours of birth. At least three additional postnatal contacts are recommended for all mothers and newborns, on 48–72 hours, between days 7–14 after birth, and six weeks after birth (1).

The health of mothers has been regarded as an indicator of the health of the society(2). The Provision of these services to the mother and their newborn has been set up for the prevention and reduction of both maternal and neonatal deaths worldwide(3) Early visits are crucial because the majority of maternal and newborn deaths occur in the first week, particularly on the first day, and this period is also the key time to promote healthy behaviors(4). Due to many physiological and psychological changes in the postnatal period which determine future well-being and health of mothers and newborn , is critical for their survival (1)

Postnatal care services help to safeguard women from complications and provide important opportunities to assess the infant's development. Its principal objective is to support the mother and her family in the transition to a new family constellation. Some of these services are counsel on baby care, support breastfeeding, counsel on exclusive breastfeeding, maternal nutrition, contraception service, and immunization(5).

Essentially, the mother receives services like iron and folic acid supplementation, screening and treatment of infections, care for hemorrhage, postnatal depression and other conditions. In addition to the above, the mother is also taught to seek care for her neonate if she notices danger signs such as convulsions, or problems with feeding, care of the umbilical cord, screening and treatment of infections, assessment of factors predisposing to infant anemia, special care for preterm, low-birth-weight, and HIV-infected neonates among others is given to them. Despite its importance, postnatal period is generally the most neglected in developing countries like Ethiopia and most mothers and new born babies do not receive postnatal care services from a skilled health care provider during the critical first few days after delivery(6)

Factors that deter utilization of PNC services are not the same across different cultures and socioeconomic status within a society(7). Thus identifying the factors determine PNC service non-utilization in different setup area is very important to improve maternal and child health services for countries, like Ethiopia.

1.2. Statement of the Problem

The number of women who suffer and die from serious health issues during pregnancy and childbirth worldwide is still very high. In 2015, an estimated 303 000 women died due to pregnancy and childbirth related causes. Almost all of these deaths (99%) occurred in low and middle-income countries (LMIC), with almost two thirds (66%) occurring in Africa. Every day in 2015, about 830 women died and out of this 550 occurred in Sub-Saharan Africa(8). In many African countries half of maternal deaths occur during the first week after birth and majority of these occur during the first 24 hours because, women and their newborns do not have access to health care during the early postnatal period(4). Yet, each and every day in 2016, 15 000 children died before reaching their fifth birthday(8)

In Ethiopia, maternal mortality ratio is 412 per 100, 000 live births, infant and neonatal mortality rate are 48 and 29 per 1,000 live births respectively. Despite remarkable progress to reduce mortality of under five children in Ethiopia, little change has occurred in neonatal mortality, which accounts for 42% of all less than five year deaths. A large proportion of these maternal and neonatal deaths occur during the first 48 hours after delivery. These deaths are unjust and can be avoided with key health interventions, like provision of ANC and medically assisted delivery and PNC services(9). The decline in neonatal mortality rates from 2000 to 2016 is by 24% which is substantially less than the decline in infant (39%) and under five (60%) mortality over the same period(2). In Ethiopia, 61% of maternal and 58% of infant mortality takes place in postnatal period(9). A fully functioning mother-baby package intervention has been estimated to have post-natal cumulative effect of averting 75%-85% of maternal death in developing countries(10). Postnatal care is regarded as one of the most important maternal healthcare services for the prevention of impairments and disabilities resulting from childbirth(11)

Lack of postnatal care utilization may result in a number of complications which include maternal and neonatal infections, incomplete immunization for the baby, frequent and mistimed pregnancies which come as a result of lack of family planning commodity access, severe postpartum hemorrhage which claims at least 22% of maternal deaths and

which kills a woman within two hours in the absence of medical interventions. A mother may develop high blood pressure which may not be diagnosed earlier, anemia, and other life threatening complications including obstetric fistula which may result in maternal and neonatal deaths.

Millions of mothers suffer from severe illness each year, and unknown numbers are affected with lifelong disabilities. Some of the long-term maternal complications in the postnatal period include chronic pain, impaired mobility, damage to the reproductive system and infertility. Some women suffer genital prolapses after bearing several children. This condition is extremely uncomfortable and can lead to other complications in future pregnancies if not properly addressed in the postnatal period(11).

However, Postnatal care service utilization is the most neglected and under-utilized service among the fundamental elements of the continuum of maternal and child care in Ethiopia(12). According to the EDHS 2016 the national and Southern nation nationalities and peoples regional state coverage of postnatal care service utilization within the first two days after delivery is only 17%. This is significantly less than the national 62% ANC service utilization (at least one times) and 28% skilled attendants assisted deliveries(9). Substantially fewer mothers and newborns living in rural areas received postnatal care, compared to those living in urban areas (3% versus 32%)(13). According to the Demba Gofa district 2017 annual report, maternal and newborn health care services is particularly receiving at least one visit PNC (within 42 days) is 63% which is lower than other services like ANC1 (92%) and ANC4 (87%).This comes in spite of all the efforts by the government and other stakeholders to increase postnatal care service utilization in the country.

Recent studies on determinants of postnatal care utilization have been done in Sub-Saharan Africa and in different districts of Ethiopia. According to evidences from these studies: literacy, ANC attendance, place of delivery of last child, Awareness about maternal complication and delivery complication that occurred during birth were factors associated with postnatal care service utilization(7,12,14–17), However, because of their cross-sectional study design (approaches) and socio-cultural set up differences providing a general conclusion regarding the predictors of postnatal care utilization among mothers is limited. In particular, some of these studies were facility based, utilized convenience sampling approach, had small sample size, recruited the participants through the under-five clinic which only targeted mothers attending under-five clinic. Because of these,

factors that motivate or hinder mothers from utilizing postnatal care services are not well established. Additionally, despite several studies on utilization of postnatal care services, there are only few studies to identify the factors that influence their non-utilization in Ethiopia. The implication is that women who need targeted interventions have been missed and this would delay the country's SDG achievement.

Therefore, the purpose of this study is to assess the determinants of postnatal care non-utilization in Demba Gofa district, Southern Ethiopia.

CHAPTER 2: LITERATURE REVIEW

Antenatal, delivery, and postnatal care are part of the continuum of care for maternal and child survival (18) Postnatal care is critical intervention for tackling most causes of maternal and child mortality through diagnosis and management of complications that may arise at the time of labor, delivery, or early after delivery.

In Sub-Saharan African (SSA) countries including Ethiopia, poor maternal and neonatal health outcomes are caused by a combination of factors, including the level and quality of health care services provided and the health-seeking behavior of mothers(15). As to the other previously conducted studies; maternal education, marital status, occupation, antenatal follow up and appointment for postnatal, infrastructure in rural areas, maternal knowledge about problems of postnatal period, knowledge of available PNC services and place of delivery were predictors of postnatal care service utilization.

Determinants of postnatal services utilization

1. Socio-demographic factors, economic and cultural determinants

Age of the mother

Age of the mother is one of the key factors that are assumed to have an influence on postnatal service utilization among mothers in developing countries. A study conducted in Gondar Zuria (2014) Ethiopia had shown that mothers who were 35 years and above were three times more likely to utilized PNC services than mothers who were less than 35 (11).

Marital status

A study conducted in Debre Birhan, North Shoa; Ethiopia (2018) found that Single mothers were less likely to utilize postnatal care services than those mothers who are married and live together (19). Another study conducted in Gondar Zuria District, Ethiopia (2014), shown that married women were 3 times more likely to utilize PNC services than those who were single (11).

Family size

A study conducted in Gondar Zuria District, Ethiopia (2014), found that out of 46.5% of mothers who failed to attend postnatal care services 30.5% attributed to lack of time, while the remaining 16.1% said they did not have guardians for children care(11).On the other hand, one may argue that mothers from large family sizes are more likely to utilize

PNC since they are likely to have someone to take care of the home. However, the truth is not well known, hence there is a need to carry out further studies to ascertain the relationship between the two variables.

Religion

Religious belief has been found to be a push factor or source of exclusion from maternal health care utilization in India and Africa. It has been found that non-Catholic women were less likely to use maternal healthcare in Ghana, whilst Catholic women were less likely to utilize maternal healthcare in Kenya when compared to Protestants(20). Thus, religious affiliation is strong as it is usually a community head belief(21)

Place of residence

Further analysis of EDHS (2016) shown that women who are urban residents are times more likely to utilize postnatal services than rural residents(22). A study in Loma District, Southwest Ethiopia (2018): also shown that women who are urban resident are four times more likely utilize postnatal care services when compared to rural residents(16).

Education level of mother

Educational level of mother is a very important factor. When women are better educated they are more aware about their health, know more about availability of maternal health care services and use this awareness and information in accessing the health care services (10,20,23,24).

A study from Nigeria (2014) on non-utilization of postnatal care services, shown that Women who had attained primary level of education had lesser odds of not utilizing postnatal care compared with women with no formal education while women with secondary and higher education had lower odds of not utilizing postnatal care(23).

In Ethiopia, a in Loma district of SNNPR (2018) show that literate women are 3 times more likely to utilize postnatal services than the illiterate(16)

Education level of husband/partner

A study in Mongochi district (2014); Malawi shows that Women whose partner of Secondary education level are 3 times more likely to utilize postnatal services than women whose partner is illiterate(15). A study in Northern Shoa (2018); Ethiopia shows that Women whose partner of higher education level are about 2 times more likely to utilize postnatal services than women whose partner is illiterate(25)

Occupation of the mother

A study in Loma district of SNNPR (2018); Ethiopia show that being a merchant women are eight times more likely to utilize postnatal services than the housewife (16). However, a study conducted in Gondar Zuria District, Ethiopia (2014) which had shown no significant association between postnatal service utilization and occupation status of the mother. They discovered that majority of the respondents were housewives and farmers and according to them this factor might have contributed to the lack of association in these variables(11).

Occupation of the husband/partner

Postnatal care service utilization is influenced by the occupation status of the partner. A study in Mongochi district (2014); Malawi shows that Women whose partners working (self/government employee) are three times more likely to utilize postnatal services than women whose partner not working(15).

Cultural seclusion

A study conducted in Lemo Woreda (2016), Southern Ethiopia qualitative analysis shown that mothers who were prohibited by cultural practices to attend PNC services were less likely to utilize PNC service than those mothers who were not prevented by cultural practices(17).

Decision making

According to the study conducted in Gondar Zuria District, Ethiopia (2014), Mothers who were able to make decision on their own were more likely to use the services than those who couldn't make a decision on their own(11).

Household level of income

A cross sectional study in Nigeria (2014) shown that Women who belonged to the middle category had lower odds of not utilizing postnatal care. Women in the rich category also had lower odds of not utilizing postnatal care(23). In a study conducted in Debre Birhan, Noeth Shoa, Ethiopia (2015): found that when an income increases women are more likely to utilize PNC services than those who are from poor households(19). However, a study on determinants of postnatal care use at health facilities in 17 rural Tanzania (2015) found no association between household level of income and postnatal care service utilization among mothers(27)

2. Knowledge and attitude related factors

Knowledge on postnatal care service and postnatal danger signs

A case control study conducted in Diga District, East Wollega Zone, Ethiopia (2017): shown that Mothers who have information on PNC service were 28 times more likely to utilize PNC service. A mother who knows at least one maternal danger sign were more likely to utilize PNC than mothers who did not know any maternal danger sign after birth(28)

However, a study in Adwa, Tigray (2013): Ethiopia found no significant association between knowledge about PNC and utilization of PNC services (29) To ascertain the relationship between the two variables, there is a need to carry out further studies.

Mother's attitude towards health system

In a study in Namibia (2008): found that mothers' perceived attitude towards service provider can directly affect postnatal care utilization among mothers. It was reported that positive attitude promotes corporation between clients and health care workers. According to this study, if clients are well received they will listen well to what health care workers are telling them and are likely to adhere to the information given(26).

3. Health system related characteristics

Distance from nearest health facility

According to study findings from Nigeria (2014), mothers who did not perceive distance as a big problem had lower odds not- utilizing postnatal care services when compared to mothers who reported that, it was a big problem(23). Similarly, a study conducted in Gondar Zuria, Ethiopia (2014) found that one to two hours travel to the nearby health centers resulted in women being two times more likely to utilize health services than those who had to travel above two hours (11).

Place of delivery

A case control study conducted in Diga District, East Wollega Zone, Ethiopia (2017) shown that Mothers who gave birth at health institution were 4.5 times more likely to utilize postnatal care service than those mothers who gave birth at home(28)

Perceived quality of PNC service

A study in Nepal (2014) found that limited capacity in health care delivery due to lowly trained village health workers who had only a few months of training may have affected the quality of health care delivered, hence preventing women from attending postnatal care services(30). Similarly, a study in Gondar Zuria district, Ethiopia (2014) found that

majority of mothers who did not attend postnatal care complained of limited availability of health services including drugs and equipment(11). To diagnose the association, it needs to carry out further investigation in our context.

Model family

Even though there is no study indicating the association between women development and postnatal utilization, there are evidences that show association of being model and non-model family with other continuum of maternal and child health care like ANC and skilled attendance(4,31). Therefore, association between model graduation and postnatal utilization needs further investigation.

4. Reproductive related characteristics

Antenatal attendance

Evidence has been indicating that making the recommended number of ANC visits is important to increase the use of facility delivery and postnatal care(32). A study in Nigeria (2014), shown that women who received ANC had lesser odds of not utilizing PNC (23). A case control study conducted in Diga District, East Wollega Zone, Ethiopia (2017): shown that Mothers who have ANC follow up were two times more likely to utilize PNC service(28)

Parity

A study conducted by Ethiopian Society of population studies (2014) discovered that the odds of having parity four and above decreased the chance of utilizing postnatal care services about four times(33). However, a study in Addis Ababa (2015) revealed that multiparous mothers who had postnatal experience were three times more likely to utilize postnatal services for the current delivery than those primipara women(19). Therefore to ascertain the relationship between the two variables, there is a need to carry out further studies.

Desire for pregnancy

A cross sectional study in Nigeria (2014) shown that Women who stated that they would have preferred to have the child later had lesser odds of not utilizing postnatal care compared to women who wanted the child then(23)

Mode of delivery

A study in Debre Markos Town, Northwest Ethiopia (2016) shows that Women who had caesarean section are five times more likely to utilize postnatal services than women who had spontaneous vaginal delivery (7). Another study in Northern Shoa; Ethiopia (2017) shows that Women who had caesarean section are six times more likely to utilize postnatal services than women who had SVD(25).

Birth Size

According to the study in Nigeria (2014), mothers who reported the size of their children to be average were more likely not to utilize PNC services. Similarly, mothers who reported their children were smaller than average at birth had higher odds of not utilizing PNC services(23).

Generally, the literature indicate that studies have been carried out to determine the factors associated with postnatal care utilization among mothers in Ethiopia (14,24), Kenya(5), Nigeria(23), Nepal (30) and others. Place of residence, economic status, educational status of the mother, and maternal occupation, awareness on postnatal service ANC attendance and marital status were determinants of postnatal care use.

A number of studies however, not focused on community based approach. Most of the studies were institutional based and the data was collected from mothers who came for routine under-five clinics. This therefore, might have resulted in assessing only those mothers who utilized postnatal care services leaving out those mothers who did not come for the under-five clinic who are also likely not to have utilized postnatal health care services. The findings from these studies could therefore, not be generalized to all mothers in the research area.

Additionally, most of the studies in the literature used secondary data in their analysis and convenience sampling technique in identifying the study participants. Furthermore, majority of the studies done are used descriptive cross sectional design which cannot identify determinants of PNC utilization among the independent variables. Despite the several studies that have contributed to the utilization of postnatal care services, there are only few studies that identified factors influencing non-utilization. The implication of this is that the women who need to be targeted with interventions have been missed.

Therefore, the upper mentioned gaps leave the opportunity for this study; which uses a community based approach, primary data and simple random sampling technique to identify the participants.

Conceptual Framework

Adapted and modified from Anderson and Newman model (2005) of health service utilization

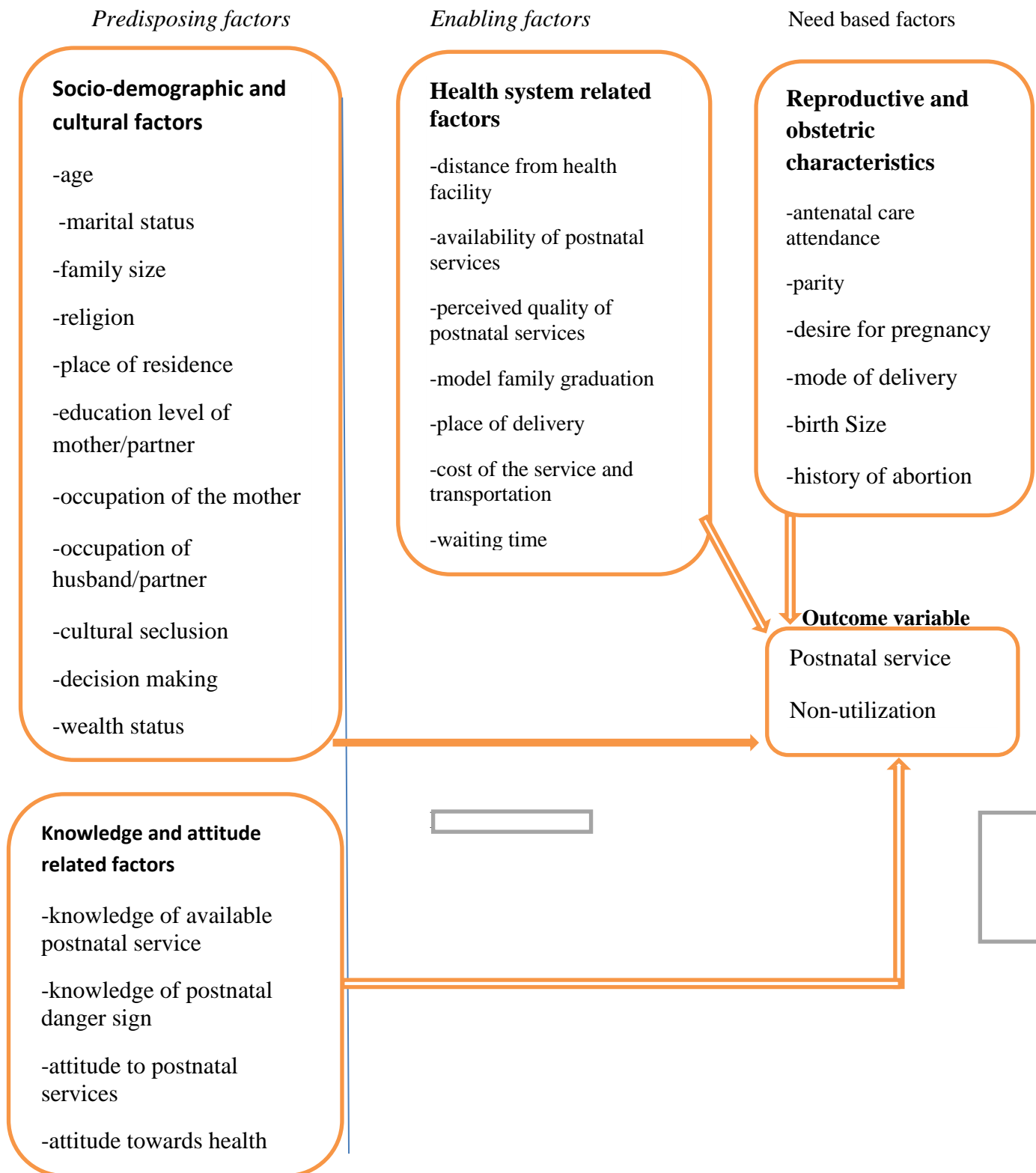


Figure 1 : Conceptual framework of determinants of postnatal care service utilization in Demba Gofa district, southern Ethiopia 2019

Significance of the study:

The findings of this study would help decision makers, programmers/higher experts, political leaders, implementers/service providers, beneficiaries and other stakeholders on understanding why women not using postnatal care and making right decisions for promotion along with other research findings. It would contribute the health sectors at different level and stake holders in designing effective plans to alleviate bottlenecks of postnatal care utilization. This would benefit Demba Gofa district health office through appropriate strategies to improve PNC utilization which will result in reduced risk of maternal and neonatal mortality and morbidity. The finding would also contribute input on achieving Ethiopia's vision 2030 target of reducing maternal and neonatal mortality through providing valid and accurate information in order to foster the national effort.

Finally, it would enhance the body of knowledge, provide evidence for researchers and pave the way for further studies on postnatal care service utilization.

CHAPTER 3: OBJECTIVES

Objective: - To identify determinants of postnatal service non- utilization among mothers who gave birth from July 1 to Dec 31/2018 in Demba Gofa rural district, Southern Ethiopia

CHAPTER 4: METHODS AND MATERIALS

4.1. Study area and period

The study was conducted in Demba Gofa rural district, SNNPR State from March 1 to April 10/2019. The district is located 515 KMs to the South of Addis Ababa, capital city of Ethiopia and 284 km from Hawassa, capital of SNNPR state. In the district there are different governmental and private institutions in different sectors. From health sector there are four health centers, and 34 health posts and 13 private clinics.

Demba Gofa district is administratively divided in to 34 kebeles (the smallest administrative unit) with a population of 96,433 (projected from 2007 Census) in the year 2018 of which 49,180 are females. The estimated number of women of reproductive age group and women who gave birth in the last six months is 22,468 and 1,630 respectively (Demba Gofa rural district health office bi-annual report, 2018). The district was chosen for the study since no study on postnatal service utilization had been carried out in the district.

4.2. Study design

A community based case control study design

4.3. Population

Source population: all mothers at Demba Gofa district who gave birth in the last six months (July 1 to Dec 31/2018).

Cases and controls

Cases: - all women at Demba Gofa district who were in the 6th week to 6 months after delivery during data collection and did not use postnatal care.

Controls: - all women at Demba Gofa district who were in the 6th week to 6 months after delivery during data collection and used postnatal care.

Study population: - all randomly selected women (cases and controls) who were in the 6th week to 6 months after delivery during data collection period and living in 14 selected kebeles of Demba Gofa rural district.

Inclusion and exclusion criteria for cases and controls

Inclusion criteria for cases

- Mothers who were living at the selected kebele for the last one year and did not use PNC services
- Mothers who gave live birth in the last six months

Inclusion criteria for controls

- Mothers who were living at the selected kebele for the last one year and utilized PNC services
- Mothers who gave live birth in the last six months

Exclusion criteria for cases and controls:

- Mothers who were too sick to participate in the study

4.4. Sample size determination and Sampling technique

4.4.1. Sample size

Sample size was calculated by double population proportion formula using Epi info-7 software. The assumption used were proportion of control who had health post-delivery 32.9 % and the Adjusted odds ratio 0.44 (which gives the largest sample size among other determinants). This proportion taken from a study done in Loma District Southwest Ethiopia(16).Using power of 80% and 95% confidence level and case to control ratio of 1:1. The total sample size calculated was 288. Because of the multi-stage nature of sampling, using the design effect of 1.5 was used(34). Since the source population (mothers who give birth in the last six months) is 1,630 (less than 10,000), the finite population correction formula was used. The final sample size was 376 (i.e. 188 cases and 188 controls) including the 10% compensation for non-response rate.

Table 1: Sample size result from Epi info soft software

Determinants	% of controls exposed	Adjusted Odds ratio	Number of cases	Number of controls	Total sample size	
Urban residence	67.5	.27	45	45	90	Yarinbab et al., 2018
Literacy of mothers	31.7	.299	80	80	160	Yarinbab et al., 2018
Occupation of mothers (Merchant)	86.3	.13	25	25	50	Yarinbab et al., 2018
Health post delivery	32.9	.444	144	144	288	Yarinbab et al., 2018
ANC visit	98	.09	64	64	128	Heyi et al., 2018
Ever heard of PNC	31.7	.299	80	80	160	Heyi et al., 2018

4.4.2. Sampling procedures

According to WHO regional office tools for assessing operational district health system in Africa; if the total number of district is 20 to 39 taking 40 % of them is enough(35). So, based on this information Demba Gofa district has 34 kebeles. 40% of kebeles i.e. 14 kebeles from the total 34 kebeles were selected by simple random sampling (lottery) method. Survey was conducted to obtain PNC service utilizers and non-utilizers in the last six months (July 1 to Dec 31/2018). A single mother selected from every household by lottery method where more than one eligible mother exist. Sampling frame was prepared from cases and controls separately. Based on the number of cases from survey, the calculated sample size (i.e. 188 cases and 188 controls) were proportionally allocated for

each kebele. Finally, the required number of cases and controls were selected from each of 14 kebeles using simple random sampling technique.

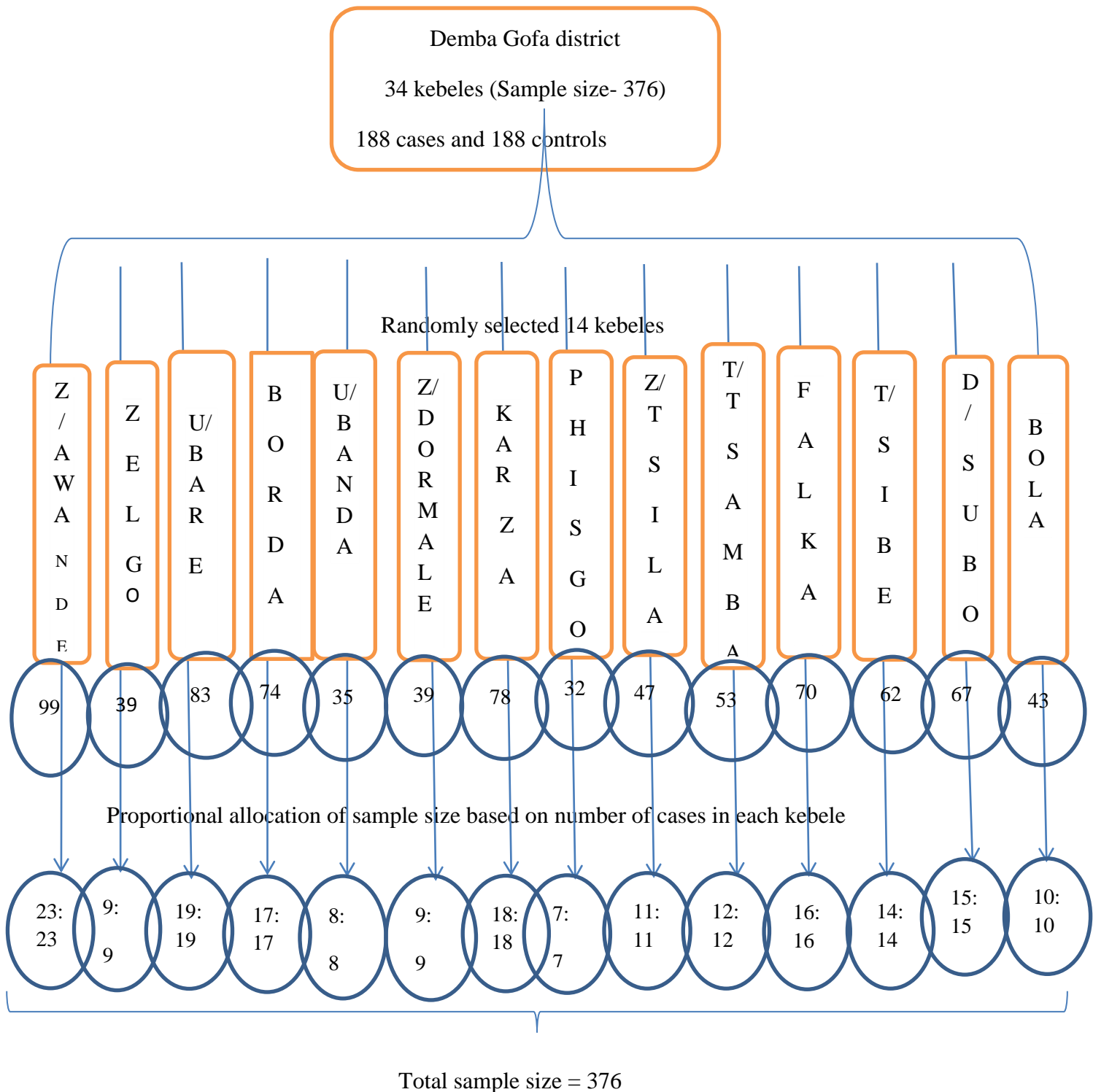


Figure 2 : Schematic diagram of sampling procedure of women to identify determinants of postnatal service non-utilization in Demba Gofa district, 2019

4.5. Study variables

Dependent variable:

Postnatal care services non-utilization

Independent variable:

1. Socio-demographic and cultural variables:

- Age
- Family size
- Educational status of mother
- Educational status of husband
- Marital status
- Religion
- Occupation of mother
- Occupation of husband
- Cultural seclusion
- Decision making
- Wealth status of household

2. Knowledge and attitude related factors:

- Ever heard about PNC
- Knowledge of availability of postnatal health services
- Knowledge of postpartum danger signs
- Attitude to postnatal services
- Attitude to health service providers

3. Health system related factors:

- Distance from health facility
- Model family graduation
- Place of delivery
- Perceived quality of postnatal services
- Cost of the service and transportation
- Waiting time

4. Reproductive and obstetric characteristics:

- ANC Follow up
- Parity
- Mode of delivery
- Desire for pregnancy
- Birth size
- History of abortion

4.6. Operational definition

1. PNC non-utilizers: are women who did not use PNC services by health care professional within 42 days of child birth. For uncomplicated vaginal delivery in health facility, a mother discharged before 24 hours is considered as non-utilizer unless she get additional visit within 42 days of delivery.(1).

2. Post-natal service: Is the service that consists of immunization, family planning and health education on child care, breast feeding, physiotherapy, physical examination, treatment and counseling service(24)

3. Institutional delivery: mother gives birth in any government or nongovernmental health facility.

4. Model family: a family having women who are graduated after attending 15 days training and implemented health extension packages (2)

5. Cultural seclusion: is a cultural/social practice that forbids mothers from going out and/or joining peoples for 40 days starting from the day of delivery(25)

6. Health care professionals: are health care providers including physicians, nurses, midwives and health extension workers(2).

7. Decision making: is the ability of the mother to make and execute independent decision pertaining to PNC service utilization.

8. ANC attendance: Mother visits health institution for pregnancy reason at least once.

9. Mode of delivery:-is a method of child birth including spontaneous vaginal delivery, instrumental delivery and caesarean section.

10. Distance from the nearest health facility: mother being no more than an hour from health facility or availability of health facility within one-hour travel by local means of transportation (foot, horse)(28).

11. Desire for pregnancy: refers to whether the mother wanted, wanted later or wanted not more the child at conception(23).

4.7 Measurement

2. Wealth Status: was derived from the wealth index (five quintiles in the data set; poorest, poor, middle, rich and the richest) for the households. The variables included to calculate the index were main material of the walls, roofing, floor, separate room for cooking, type of fuel household mainly use for cooking, kind of toilet facility household use, household's ownership of phone, radio, mattress, bed, watch, stove, table, chair, beehive, ox, cow, hen, motorcycle and Generator (23).

3. Postpartum danger sign awareness: A mother mentions at least one postpartum complication of mother and newborn occur after birth such as excess vaginal bleeding, fever, a severe headache, blurred vision, edema on face and hands, offensive uterine discharge, convulsion, unable to suck, vomiting everything etc(28)

4. Attitude about PNC service:- the sum total score of a way of thinking about PNC service or behaving towards the use of the service to health of mother, her child and recommending the service to others. The score on Likert's scale less than the mean were considered as favorable and score greater than the mean as unfavorable attitude at individual level(28).

5. Perceived quality of care:- composition of women's perception based on whether the health professionals were friendly, have respect and dignity to customers, are available when needed, privacy during examinations, the health facility is clean, the health professionals treat equally/ impartiality, availability of the Service they need, Service provided (including advice and information they give) met their need, product available in the health facility, cost of the services comfortable to them. The score on Likert's scale greater than the mean were considered as poor and score less than the mean as good quality.

4.8. Data collection procedures

Data collection instrument:

Structured questionnaire was developed on the basis of a literature review and questions adapted from previous similar studies including the EDHS.(15,36) Postnatal care utilization was assessed based on binary outcome, yes or no response. The instrument has

variables on socio-demographic and cultural characteristics, socio-economic status of household, knowledge and attitudes related factors and health system related characteristics.

Data collection technique:

Data collectors were eight midwifery nurses (degree and diploma holders), three BSc nurses. Supervisors were two senior health professionals recruited from Sawla General Hospital. Data was collected by trained data collectors who are fluent speakers of the local language through face-to-face interview. The principal supervisors and investigator supervised the data collection process on daily bases.

4.9. Data quality management

To assure the quality of the questionnaire, the following measures were under taken. The content validity of the instrument was ensured through constructive criticism from colleagues in the maternal health department of Sawla General Hospital (which is found in the administrative capital of Gofa Zone) who are expertise and have an experience in questionnaires construction. The questionnaire was revised and improved according to the advice and suggestions made. The appropriately designed data collection questionnaire was translated from English into the local language (Goofatho) & vice versa. Pre-test of the data collection tool was conducted prior to the study on 5% of the sample (10 cases and 10 controls) in Geze Gofa district which is adjacent to the study area and having similar socio-demographic population. Based on the evaluation, final version of the questionnaire modified and developed. This help to make necessary adjustments in the research instrument for easier understanding.

To ensure reliability in the measurement, data collectors and supervisors were trained for two days about the objective of the study, content of the questionnaire; ways how to keep confidentiality and privacy, on how to conduct the data collection and mechanism how to resolve the problem arise. Daily supervision held by field supervisors and the investigators. Every day the collected data was cross checked by supervisors and investigator. Comments and measures were undertaken throughout the data collection period for completeness and consistency of the response.

Any incomplete information in the data gathered was excluded from the entry. Double data entry and validation were used to check the quality of data entered. Cross checking

missing values, outliers and other inconsistencies and cleaning were also done before analysis.

4.10. Data management and analysis

After the gathered data checked for completeness, variables coded and entered into Epi-Data version 3.1 software packages, the clean data finally exported to SPSS version 21 statistical software for analysis. The descriptive data analysis was done in the first step. A Pearson Chi square (χ^2) was used to check adequacy of cells and the variable maternal occupation was removed from the analysis. Model assumption was checked by using Hosmer-Lemeshow goodness of fit test and found to be p -value >0.05 .

Variables having p value less than 0.25 in the bi-variate analysis were candidate for multi-variable analysis. Multicollinearity was checked for highly inter-correlated variables using VIF but not found. Multi-variable logistic regression model was fitted by using variables which had p value less than 0.25 in bi-variate analysis to control the effects of confounding. Adjusted odds ratio with 95% CI and p -value less than 0.05 were used in order to declare the associated factors

4.11. Ethical consideration

Ethical clearance was obtained from the Institutional Review Board (IRB) of Jimma University, College of Health Sciences. Official letter was written from the department of epidemiology to Demba Gofa Woreda health office. Permission was obtained from Gofa Zone Health Department, Demba Gofa Woreda Health Office, and finally from the administrative head of each selected Kebeles. Verbal consent was obtained from each study participant after thorough explanation of the purpose and the procedures of the study. Respondents were informed that there is no any experimental procedure that would be done on their bodies. There would be no physical or psychological injury and discomfort as a result of the study. The questionnaire coded instead of using names as identification and hence confidentiality and privacy were assured throughout the study and no one will access it apart from the researcher and the supervisors. Furthermore, the participants were informed of their right to withdrawal from the study anytime.

4.12. Dissemination plan

The findings of this study will be presented to Jimma University faculty of public health, collage of health science & medicine, and it will be disseminated to Demba Gofa district health office, Gofa Zone health department, Sawla General Hospital, health centers and SNNPR state health bureau. Effort will be made to publish on international pear review journal.

CHAPTER 5: RESULTS

1. Socio-demographic Characteristics

A total of 186 cases and 186 controls that gave birth in the last six months were interviewed with over all response rates of 98.94%. The mean age of the cases and controls were 25.68 years (\pm SD=6) and 26 years (\pm SD=5.97) respectively. From the participants, 173 (93%) cases and 176 (94.6%) controls were married. In this study, 182 (97.8%) of cases and 171 (91.9%) of controls belong to Gofa ethnic group. Concerning maternal educational status, 58 (31.2%) of cases and 32 (17.2%) of controls were unable to read and write. Among respondents, 169 (90.9 %) cases and 147 (79%) controls were housewife. Regarding husbands level of education, 58 (31%) of cases and 32 (17%) controls are unable to read and write. Regarding wealth status of households among the participants, 49.5% of cases and 30.7% of controls were poor.

Table 2 : Socio-demographic and economic characteristics of study participants in Demba Gofa rural district, 2019

Variables	Categories	No of Cases (n=186)	(%)	No of Controls (n=186)	(%)
Age of mother	15-19	32	17.2	30	16.1
	20-24	45	24.2	47	25.3
	25-29	55	29.6	53	28.5
	30-34	35	18.8	34	18.3
	>=35	19	10.2	22	11.9
Marital status	Married	173	93	178	95.7
	Divorced	7	3.8	3	1.6
	Single	6	3.2	5	2.7
Ethnicity	Gofa	182	97.8	171	91.9
	Gamo	1	.5	9	4.8
	Wolaita	3	1.6	4	2.2
	Amhara	0	0	2	1.1
Religion	Protestant	160	86	162	87.1
	Orthodox	25	13.4	21	11.3
	Muslim	1	.5	3	1.6
Maternal level of education	Unable to read and write	66	35.5	39	21
	Primary education	87	46.8	95	51.1
	Secondary education and above	33	17.7	52	28
Husband level of education	Unable to read and write	58	31.2	32	17.2

	Primary education	83	44.7	85	45.7
	Secondary education and above	45	24.2	69	37.1
Occupation of Mother	House wife	169	90.9	147	79
	Merchant	15	8.1	25	13.4
	Government employee	1	.5	9	4.8
	Others	1	.5	2	2.7
Occupation of husband	Farmer	142	76.3	118	63.4
	Merchant	17	9.1	18	9.7
	Government employee	8	4.3	21	11.3
	Others	9	10.2	29	15.6
Wealth status	Richest	27	14.5	48	25.8
	Rich	29	15.6	45	24.2
	Middle	38	20.4	36	19.4
	Poor	42	22.6	29	15.6
	Poorest	50	26.9	28	15.1

Others in occupation of mothers: maid servant, daily labourer and student.

Others in occupation of husbands: daily labourer and student.

Others in decision making: mothers, mother in law, friends and neighbours.

1.1 Socio-cultural practices

Cultural seclusion

Thirty (16.1%) of cases and 29 (15.6%) of controls reported that their culture prohibited them from attending PNC services.

Maternal autonomy

Regarding decision making, 93 (50%) of cases and 134 (72%) of controls were able to decide about PNC service utilization jointly with their spouse. Twenty nine (15.6%) cases and 36 (19.4%) of controls decided their PNC service utilization by themselves. Fifty six (30.1%) of cases' and 14 of controls' decision about health service utilization were made by their husbands, and 8 of cases and 2 of controls were by other bodies such as their mothers, mother in law, neighbours and friends. (Figure 3)

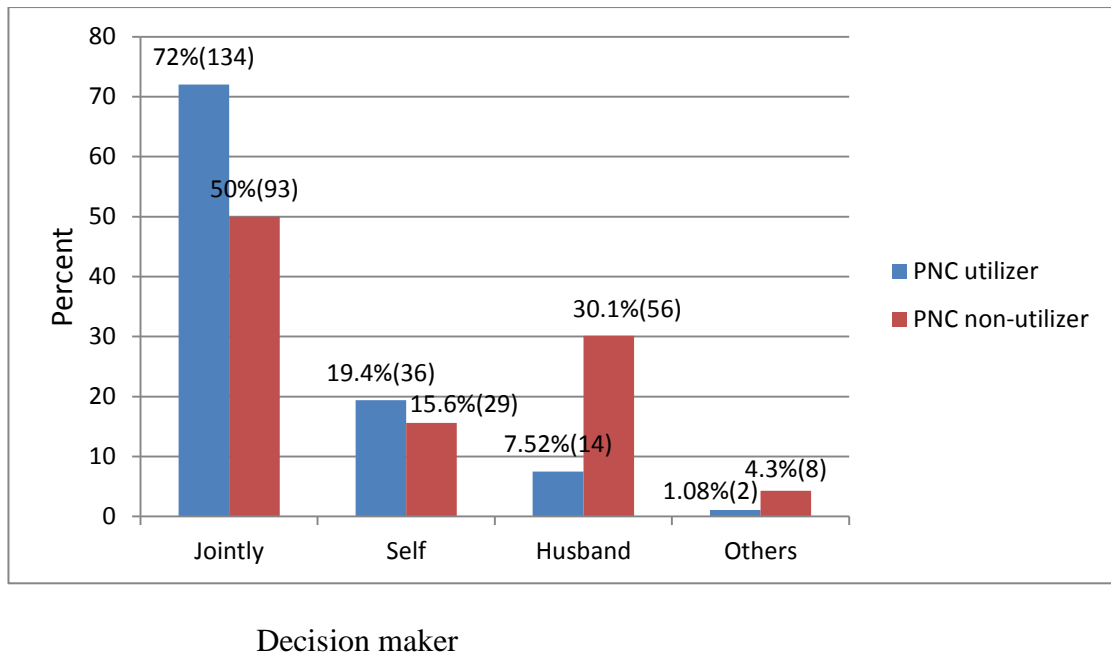


Figure 3: Bar graph depicting power of mothers in making decision about their postnatal service utilization among postnatal service utilizers and non-utilizers in Demba Gofa district, 2019

2. Knowledge and attitude related factors

2.1 Awareness of Mothers about PNC service

Among the study participants, 82(45.2%) of cases and 17 (9.1%) of controls did not hear about PNC. From the study participants, 123(66.1%) of cases and 50 (26.9%) of controls did not mention any danger sign. Regarding service availability 64 (34.4%) of cases and 9 of controls do not know availability of the service in their nearest health facility.

2.2 Mothers' attitude to PNC service utilization

In this study, 140(75.3%) of cases and 175(94.1%) of controls had favourable attitude on the importance of the PNC services.

Table 3 : Knowledge and attitude related factors among postnatal mothers in Demba Gofa rural District, 2019

Variables	Categories	Cases No (%)	Controls No (%)
Ever heard of PNC	No	84 (45.2)	17 (9.1)
	Yes	102 (54.8)	169 (90.9)
Know at least one PNC danger sign	No	123 (66.1)	50 (26.9)
	Yes	63 (33.9)	136 (73.1)
Know availability of PNC service	No	64 (34.4)	9 (4.8)
	Yes	122 (65.6)	177 (95.2)
Attitude to PNC services	Unfavorable	26 (14)	3 (1.6)
	Medium	20 (10.8)	8 (4.3)
	Favorable	140 (75.3)	175 (94.1)

2.2 Health system related characteristics

Regarding WDA network, 157 (84.4%) of cases and 97 (52.2%) of controls were not graduated model family training. (Figure 4) Regarding distance to the nearest health facility 154(82.8%) of cases and 172(92.5%) of controls travel less than one hour on foot to reach to the nearest health care facility.

Table 4 : Health system related characteristics in Demba Gofa rural district, 2019

Variables	Categories	Cases No (%)	Controls No (%)
Place of delivery	Home	126 (67.7)	44 (23.7)
	Health institution	60 (32.3)	142 (76.3)
Graduation as model family	Not graduated	157 (84.4)	97 (52.2)
	Graduated	29 (15.6)	89 (47.8)
Distance to nearest health facility	<1 hours	154 (82.8)	172 (92.5)
	>=1hours	32 (17.2)	14 (7.5)

4. Reproductive and obstetric characteristics

Regarding parity of participants, 76 (40.9%) of cases and 81 (43.5%) of controls gave birth to two to four babies (multipara). Seventy (37.6 %) of cases and 66 (35.5%) of controls gave birth to five or more babies (grand multipara) and 40 (21.5 %) of cases and 39 (21%) of controls gave birth to one baby. From the study participants, 24(12.9%) of cases and 32(17.2%) of controls had a history of previous abortion.

Regarding ANC visit, 59 (31.7%) of cases and 14 (7.5%) of controls did not attend ANC during last pregnancy. One hundred twenty six (67.7%) of cases and 44 (23.7%) of controls had home delivery. Regarding Mode of delivery, 178 (95.7%) of cases and 158 (84.9%) of controls have delivered spontaneously.

From the participants, 107 (57.5%) of cases and 130 (69.9%) of controls responded that they had plan to get pregnancy of their last child then. Thirty nine (21%) of cases and 19 (10.2%) of controls had plan to get pregnancy later. Forty (21.5%) of cases and 37 (19.9%) of controls had no plan to get their pregnancy.

Table 5: Reproductive and obstetric characteristics of participants in Demba Gofa rural district, 2019

Variables	Categories	Cases No (%)	Controls No (%)
ANC follow-up	No visit	59 (31.7)	14 (7.5)
	Once	16 (8.6)	13 (7.01)
	Twice	19 (10.2)	25 (13.4)
	Three times	39 (21.0)	63 (33.9)
	>=4 times	53 (28.5)	71 (38.2)
Abortion history	No	162 (87.1)	154 (82.8)
	Yes	24 (12.9)	32 (17.2)
Mode of delivery	Spontaneous delivery	178 (95.7)	158 (84.9)
	Instrumental delivery and caesarean section	8 (4.3)	28 (15.1)
Desire to pregnancy	Wanted no more	40 (21.5)	37 (19.9)
	Wanted later	39 (21)	19 (10.2)

	Wanted then	107 (57.5)	130 (69.9)
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Factors association with postnatal care service non-utilization

Binary logistic regression was used to see significant association between the outcome and independent variables. Variables having *p* value less than 0.25 in the binary logistic regression were fitted into a multivariable logistic regression model to control the effects of confounding. Among socio-demographic variables which were candidate for multiple regression were educational level of the mother, educational level of husband, occupation of husband, decision making and wealth status of household.

Table 6 : Bi-variate analysis of association between socio-demographic, cultural and economic related candidate variables and postnatal care service non-utilization among mothers in Demba Gofa rural District, 2019

Variables	Categories	Cases /PNC non-utilizers/ No (%)	Controls/PNC utilizers/ No (%)	COR (95%CI)	P-value
Educational level of mother	Un-able to read and write	66 (35.5)	39 (21)	2.67 (1.48, 4.81)	0.001
	Primary education	87 (46.8)	95 (51.1)	1.46 (.85, 2.44)	
	Secondary education and above	33 (17.7)	52 (28)	1	
Educational level of husband	Un-able to read and write	58 (31.2)	32 (17.2)	2.78 (1.57, 4.92)	0.001
	Primary education	83 (44.7)	85 (45.7)	1.50 (.92, 2.42)	
	Secondary education and above	45 (24.2)	69 (37.1)	1	
Occupation of husband	Farmer	142 (76.3)	118 (63.4)	1	0.09
	Merchant	17 (9.1)	18 (9.7)	.78 (.14, 1.15)	
	Government	8 (4.3)	21 (11.3)	.32 (.63, 1.15)	

	employee Others	19 (10.2)	29 (15.6)	2.58) .54 (.29, 1.67)	0.122
Decision making	Self	29 (15.6)	36(19.4)	1	0.001 0.053
	Jointly	93(50)	134 (72)	.86 (.49, 1.50)	
	Husband	56(30.1)	14(7.5)	4.96 (2.31, 10.65)	
	Others	8(4.3)	2(1.1)	4.96(.98, 25.21)	
Wealth status	Poorest	50 (26.9)	28 (15.1)	3.17 (1.64, 6.15)	0.001
	Poor	42 (22.6)	29 (15.6)	2.57 (1.32, 5.02)	0.006
	Middle	38 (20.4)	36 (19.4)	1.88 (.97, 3.62)	0.06
	Rich	29 (15.6)	45 (24.2)	1.15 (.59, 2.22)	
	Richest	27 (14.5)	48 (25.8)	1	

COR: crude odds ratio: odds ratio by bivariate analysis. 95% CI: confidence interval at the 95% level.

AOR-Adjusted OR: odds ratio by multiple logistic regression

1: Referent category

Among knowledge and attitude related factors, variables which were candidate for multiple regression were ever heard about PNC, knowledge of postnatal service available, knowledge of postnatal danger sign, perception to service providers. Among reproductive and obstetric characteristics ANC follow up, desire for pregnancy, abortion history and mode of delivery were candidate variables for multivariate logistic regression.

Table 7 : Bi-variate analysis of association between knowledge, attitude and reproductive related candidate variables and postnatal care service non-utilization among mothers in Demba Gofa rural District, 2019

Variables	Categories	Cases /PNC non-utilizers/ No (%)	Controls/PNC utilizers/ No (%)	COR (95%CI)	P-value
Ever Heard about PNC	No	84 (45.2)	17 (9.1)	8.19 (4.60, 14.57)	<0.001

	Yes	102 (54.8)	169 (90.9)	1	
Knows at least one PNC danger sign	No	123 (66.1)	50 (26.9)	5.31 (3.41, 8.28)	<0.001
	Yes	63 (33.9)	136 (73.1)	1	
Know PNC service availability	No	64 (34.4)	9 (4.8)	10.32 (4.95, 21.51)	0.001
	Yes	122 (65.6)	177 (95.2)	1	
Attitude	Unfavourable	26 (14)	3 (1.6)	10.83(3.21, 36.53)	0.001 0.009
	Medium	20 (10.8)	8 (4.3)		
	Favourable	140 (75.3)	175 (94.1)	3.12 (1.34, 7.31)	
				1	
Perception to provider	Selfish	12 (6.5)	7 (3.8)	2.07(.79, 5.36)	0.14 0.001
	Rude	29 (15.6)	5 (2.7)		
	Friendly	145 (78)	174 (93.5)	6.96 (2.63, 18.44)	
				1	
ANC follow-up	No ANC	59 (31.7)	14 (7.5)	5.64 (2.85, 11.17)	0.001 0.228 1
	One visit	16 (8.6)	13 (7.01)		
	Two visit	19 (10.2)	25 (13.4)	1.65 (.73, 3.72)	
	Three visit	39 (21.0)	63 (33.9)	1.02 (.51, 2.04)	
	Four and above	53 (28.5)	71 (38.2)	.83 (.49 1.42)	
				1	
Desire for pregnancy	Wanted no more	40 (21.5)	37 (19.9)	1.31 (.78, 2.20)	0.003
	Wanted later	39 (21)	19 (10.2)		
	Wanted then	107 (57.5)	130 (69.9)	2.49 (1.36, 4.57)	
				1	
Mode of delivery	Spontaneous delivery	178 (95.7)	158 (84.9)	3.94 (1.75, 8.90)	0.006

	Instrumental delivery and caesarean section	8 (4.3)	28 (15.1)	1	
Abortion history	No	162 (87.1)	154 (82.8)	1.40(.79,2.49)	0.247
	Yes	24 (12.9)	32 (17.2)	1	

COR: crude odds ratio: odds ratio by bivariate analysis. 95% CI: confidence interval at the 95% level.

AOR-Adjusted OR: odds ratio by multiple logistic regression

1: Referent category

Among health system related factors variables such as place of delivery, Perceived quality, distance to the nearest health facility, cost of service and transportation, waiting time and model graduation were candidates. Using backward regression decision making, ever heard about PNC, knowledge of postnatal danger sign, knowledge about PNC service availability, place of delivery, cost of service and transportation, Desire to pregnancy and model graduation were identified.

Table 8 : Bi-variate analysis of association between health system related candidate variables and postnatal care service non-utilization among mothers in Demba Gofa rural District, 2019

Variables	Categories	Cases /PNC non-utilizers/ No (%)	Controls/PNC utilizers/ No (%)	COR (95%CI)	P-value
Place of delivery	Home	126(67.7)	44(23.7)	6.78 (4.29,10.70)	<0.001
	Health institution	60 (32.3)	142(76.3)		
Distance to the nearest health facility	<1 hours	154 (82.8)	172 (92.5)	1	0.006
	>=1hours	32 (17.2)	14 (7.5)	2.55 (1.31,4.96)	
Cost of service and transportation	Big problem	10 (5.4)	4 (2)	2.92(1.26, 27.19)	0.024
	Medium				
	Not big problem	52 (28) 124 (66.7)	37 (20) 145 (78)	1.64 (.96, 2.52)	0.053
Waiting time	<1 hour	141 (75.8)	161 (86.6)	1	

	1-2 hours	29 (15.6)	20 (10.8)	1.65 (.91, 3.10)	0.107
	>2 hours	16 (8.6)	5 (2.7)	3.65 (1.31, 10.23)	0.014
Quality of service	Poor	20 (10.8)	5 (2.7)	5.32 (1.95, 14.56)	0.001
	Medium	36 (19.4)	8 (4.3)		0.001
	Good	130 (69.9)	173 (93)	5.98 (2.69, 13.31)	
				1	
Graduation as model family	No	157 (84.4)	97 (52.2)	4.96 (3.04,8.10)	<0.001
	Yes	29 (15.6)	89 (47.8)	1	

COR: crude odds ratio: odds ratio by bivariate analysis. 95% CI: confidence interval at the 95% level.

AOR-Adjusted OR: odds ratio by multiple logistic regression

1: Referent category

After adjusting for other variables, there was a significant association between the socio-cultural variable women being unable to make independent decision and postnatal service non utilization. Among knowledge and attitude related factors, women ever not heard of PNC, women not know postnatal danger sign and postnatal service non utilization were significantly associated with postnatal service non utilization. Among health system related factors, home delivery and being not a model family graduate had statistically significant association with postnatal care service non-utilization. Among reproductive and obstetric characteristics no variable had shown statistically significant association after entry to the final multiple logistics regression model. Adjusted odds ratio with 95% CI and p-value less than 0.05 were used in order to declare the associated factors

Table 9 : Association between postnatal care service non-utilization and statistically significant variables in the final multiple logistic regression model among mothers in Demba Gofa rural District, 2019

Variables	Categories	Cases /PNC non-utilizers/ No (%)	Controls / PNC utilizers/ No (%)	COR (95%CI)	AOR (95%CI)
Decision making	Self	29 (15.6)	36(19.4)	1	1
	Jointly	93(50)	134 (72)	.86 (.49, 1.50)	.92 (.42, 2.01)
	Husband	56(30.1)	14(7.5)	4.96 (2.31, 10.65)	9.34 (3.18, 27.39)*
	Others	8(4.3)	2(1.1)	4.96(.98, 25.21)	3.21 (.45, 23.10)
Ever Heard of PNC	No	84 (45.2)	17 (9.1)	8.19 (4.60, 14.57)	5.25 (2.09, 13.19) *
	Yes	102 (54.8)	169 (90.9)	1	1
Knows at least one PNC danger sign	No	123 (66.1)	50 (26.9)	5.31 (3.41, 8.28)	3.41 (1.80, 6.39)*
	Yes	63 (33.9)	136 (73.1)	1	1
Place of delivery	Home	126(67.7)	44(23.7)	6.78(4.29, 10.70)	8.013 (4.23, 15.20) *
	Health institution	60 (32.3)	142(76.3)	1	1
Graduation as model family	No	157 (84.4)	97 (52.2)	4.96 (3.04, 8.10)	5.65 (2.84, 11.23) *
	Yes	29 (15.6)	89 (47.8)	1	1

COR: crude odds ratio: odds ratio by bivariate analysis. 95% CI: confidence interval at the 95% level.

*: p –value significant at < 0.05, AOR-Adjusted OR: odds ratio by multiple logistic regression

1: Referent category

CHAPTER 6: DISCUSSION

Postnatal care is one of the most important maternal health care interventions for prevention of illnesses and deaths during the postnatal period. Postnatal service non-utilization causes mortality and morbidity of postnatal mothers.

Odds of PNC care non-utilization was about nine times higher among women whose postnatal service utilization decided by their husband compared to women who made decision by themselves. The finding is supported by local studies conducted in Gondar Zuria District(11) and Jabitena District, Amhara region(33). This is also in agreement with a study conducted in Mangochi district, Malawi(15). The possible reason might be women who are unable to make independent decision and have dependency on husbands about their own health could miss the opportunity to contact with the health professionals, develop level of awareness about PNC services hence to utilize the postnatal care services.

However, a contradictory result with this research was identified in a study in Afar, Ethiopia (37). This could be due to the difference in the area which has critical cultural belief, attitude and practice. Therefore, targeted intervention on culturally dominant bodies such as husband, senior family members and religious leaders might be important to enhance their service utilization.

Odds of PNC care non-utilization was about five times more likely among women who ever not heard about PNC compared to those who heard about PNC. This finding is in line with studies conducted Diga district, East Wollega, Oromiya region(28). It is also supported by a study conducted in Mangochi district, Malawi(15). This could be because women who had not ever heard about PNC may have lower/no awareness and would not be motivated to use the service.

Odds of PNC care non-utilization was 3.4 times higher among women who fail to mention at least one potential postnatal danger sign and symptom compared to those who had mentioned any postpartum danger signs and symptoms. This finding is supported by other studies conducted in Diga district, East Wollega(28), Jabitena District, Amhara region(33); and in addition, it is similar with a study conducted in Uganda(38) and Mangochi district, Malawi(15). This could be since they lack knowledge on postnatal danger signs and symptoms; women might not be motivated to attend postnatal care

service with the intention of prevention, early detection and management of danger signs and symptoms.

However, a study in Adwa town, Tigray (2013): Ethiopia found no significant association between knowledge about PNC and utilization of PNC services(29). Since the study area is urban, this could be due to the set up difference.

Odds of PNC care non-utilization was eight times higher among women who gave birth at home compared to women who gave birth in health institution. This finding is in agreement with studies conducted in Gondar Zuria, Amhara region(11) and Diga district, East Wollega, Oromiya region(28). This finding is also supported by a study conducted in Nigeria(23). The possible reason could be if a mother gave birth at home, the probability of receiving advice and knowing the importance of postnatal care is low. This may be attributed to the fact that women who gave their last birth at home have lesser opportunity to get exposed to health education related on PNC services at the time of delivery and thus get no access to learn about the types, benefits and availabilities of PNC services.

Odds of PNC care non-utilization was 5.6 times higher among women who were not model family graduate compared to model family graduates. Even though there is no study indicating the association between postnatal care service utilization and model family graduation. It is in agreement with findings from studies conducted on continuum of maternal and child health care like ANC and skilled attendance in Abuna Gindeberet, Oromiya region(31). The possible explanation could be women from non-model family might have lesser exposure to the theoretical and practical training on health extension package related to MNCH services; hence they were less likely to be motivated to use postnatal care services.

Even though variables such as educational level of the mother, educational level of husband, occupation of the mother, awareness about delivery complication, abortion history, desire for pregnancy, mode of delivery, complication of pregnancy and delivery, perception to service providers, distance to the nearest health facility, cost of service and transportation, waiting time, attitude to the postnatal service, perceived quality of postnatal services had significant association in some other studies, are not statistically supported in this study. This could be due to the difference in methodology and variations in the set up i.e. majority of other studies are cross-sectional, facility based and focused on urban semi-urban area.

Strength of the study

Data were collected from women who gave birth in the last six months; this might reduce recall bias among respondents. The study addressed some of gaps like decision making power of women on health service utilization and model family graduation which were not much addressed by the previous studies. Since it is a community based case control study that might addresses the determinants of PNC non-utilization.

Limitation of the study

The source of the data for this study was based on the self-reporting of respondents, this might have some limited validation of information obtained from the subjective source.

CHAPTER 7: CONCLUSION AND RECOMMENDATION

This study revealed that, home delivery, ever not heard about PNC, failure to mention at least one postnatal danger sign, women unable to make independent decision about postnatal service utilization and being not model family graduate were found to be determinants for PNC service non-utilization. Encouraging institutional delivery along with integrated health education about postnatal danger signs and improving awareness on postnatal care services, empowering women to execute independent decision about their PNC utilization and strengthening model family graduation will reduce postnatal care service non-utilization.

Therefore, the district health office in collaboration with other stakeholders should focus on empowering women to improve decision making power and strengthen model graduation programme which would enhance PNC service utilization.

The health facilities should work hard on improving institutional delivery, awareness on postnatal care and postnatal danger signs and strengthen model graduation programme to enhance PNC service utilization among women living in rural area.

Health extension workers and health professionals working at maternal and child health care units of health facilities should strongly work on institutional delivery, health education, information dissemination on postnatal danger signs in order to improve women postnatal service utilization.

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Annexes

English Version Questionnaire

TITLE: DETERMINANTS OF POSTNATAL CARE UTILIZATION IN DEMBA GOFA DISTRICT, SNNPR

Invitation:

Dear mam/ sir,

My name is ----- I am working as a data collector on determinants of postnatal care non-utilization among mothers in Demba Gofa District, on the behalf of Mr Markos Manote from Jimma University for his Master of General public health.

Postnatal care is one of the Maternal and Child Health care interventions that can help in preventing Maternal, Neonatal and Infant mortality rates which are still high in our country. Therefore, it is important that we find some of the factors that affect its utilization in order to help the health care providers and other stakeholders including the government to develop ways of improving its uptake. You are required to answer the questions below regarding the topic voluntarily. Your participation is highly valued.

Are you voluntary to participate?

1. Yes
2. No

(if yes proceed, otherwise say thanks and go to the next participant?)

Instruction to the research assistant: Circle the participants' responses, write code of the participant's response appropriately in the box provided and where applicable write the required responses in the spaces provided.

PARTICIPANT CODE:.....

DATE / /

KEBELE CODE:.....

SECTION A: SOCIO-DEMOGRPHIC INFORMATION

1. Socio-demographic characteristics of study participants			
No	QUESTIONS	CODING CATEGORIES	Remark
101	Age at last birth?	Age in complete years	
102	What is your marital status?	1. Married 2. Single 3. Living together 4. Divorced 5. Widowed	
103	How many times have you become pregnant?	Specify-----	
104	What is your religion?	1. Orthodox 2. Muslim 3. Protestant 4. Other (specify).....	
105	What is your ethnicity?	1. Gofa 2. Gamo 3. Wolaita 4. Amhara 5. Other (specify).....	
106	How many people live in this house?	Specify-----	
2. Socio-economic characteristics of study participants			
107	What is your highest level of education?	1. Unable to read and write 2. Read and write 3. Primary education 4. Secondary education and above	
108	What is the education level of your spouse?	1. Unable to read and write 2. Read and write 3. Primary education 4. Secondary education and above	
109	What is your occupation status?	1. Merchant 2. Government employee 3. Housewife 4. Others (specify).....	
110	What is the occupation status of your spouse?	1. Merchants 2. Government employees 3. Farmers 4. Others (specify).....	
111. Wealth index status questionnaire			
Does your household have the following items? (READ ALL)			
Items	If yes 'Y' or if no 'N'	Quantity	
1. Stove (gas/ kerosene)			

2. Chair			
3. Table			
4. Bed			
5. Mattress			
6. Watch (hand/wall)			
7. Generator			
8. Caw			
9. Ox			
10. Donkey			
11. Goat/sheep			
12. Hen			
13. Bee hive			
14. Motorcycle			
15. Telephone/mobile			
16. Radio			
17. Separate room for cooking			
18	Main material of the floor; record observation.	1.earth/sand 2.wood planks 3.Concrete	
19	Main material of the roofing; record observation.	1. Grass 2.Corrugated iron	
20	Main material of the walls record observation	1. wood 2. Stone/ blocket	
3. Socio-cultural factors			
112.	Who makes final decision regarding health care utilization?	1. Self 2. Jointly 3. Husband 99. Others (specify).....	
113	Place of delivery	1. Hospital 2. Health Center 3. Health Post 4. Private health facility 5. Home	
114	Seclusion to PNC	1. No 2. Yes	If no skip to

			201
115	What socio-cultural reason prevents your PNC attendance (possible to tick more than 1 answer)	<ol style="list-style-type: none"> 1. Inflammation (MICH) will kill the mother 2. Evil eye kill the mother 3. Mother wouldn't have enough ability to go out 4. Other (Specify)----- 	
<p>Section B</p> <p>4. Knowledge and attitude related characteristics</p>			
<p>1. POSTNATAL CARE KNOWLEDGE</p>			
201	Have you ever heard of Postnatal care?	<ol style="list-style-type: none"> 1. Yes 2. No 	If no skip to 206
202	Are postnatal services available in the nearest health facility to you?	<ol style="list-style-type: none"> 1. Yes 2. No 	
203	What services are offered at postnatal clinic?	<ol style="list-style-type: none"> 1. Child immunization 2. Family planning 3. Breast feeding counseling 4. Growth monitoring 5. Assessment of mother 6. Assessment of baby 7. Assessment of mother and baby 8. HIV counseling 9. Treatment of illnesses 99. Others (specify)..... 	
204	How many times should a mother and the baby have to attend Postnatal care clinic	Specify-----	
205	When should mother start PNC	<ol style="list-style-type: none"> 1. Within 24 hours 2. Within 2-3days 3. Within 7 days 4. Within 14 days 5. Within six weeks 	
206	Have you ever heard of PNC danger sign and symptom?	<ol style="list-style-type: none"> 1. Yes 2. No 	

207	What postnatal danger signs do you know?	1. Bleeding 2. Convulsions 3. Lower Abdominal Pains 4. Severe headache 5. Fever 6. Failing to breastfeed 7. Umbilical cord infection 8. Edema of face and hands 9. Others (specify).....	
-----	--	--	--

2. Attitude to PNC services:
 From your opinion rate the following statements: where 1 indicates strongly disagree and 5 strongly agree

208 A	It is recommended for you to follow PNC within 42 days after delivery	Strongly agree (1)	2	3	4	Strongest disagree(5)	
B	Post-natal services are useful to your health	1	2	3	4	5	
C	Post-natal services are important for the child's health	1	2	3	4	5	
D	You would attend Post-natal services in future	1	2	3	4	5	
E	You would recommend the post-natal services to others	1	2	3	4	5	
F	PNC service can minimize the morbidity and mortality of mothers	1	2	3	4	5	

Section C
Health system related factors

5. Obstetric and reproductive health service

301	Did you attend ANC during last pregnancy?	1. Yes 2. No	If no skip to Q no 307
302	How many times did you attend ANC	1. 1 visit 2. 2 visit 3. 3 visit 4. 4 and above visit	
303	If YES, starting which month did you attend your ANC?	1. 1-3 2. 4-6 3. 7-8 4. 9	
304	Place of ANC	1. Hospital 2. Health Center 3. Health Post	

		4. Home 5. Other(specify) -----	
305	ANC providers	1. Doctor/nurse/midwife 2. Health extension worker 3. Traditional birth attendants	
306	Who assisted you with the delivery of your last baby?	1. Health professional 2. Traditional birth attendance 3. Relative 4. Friend 5. No one assisted	
307	Place of delivery	1. Hospital 2. Health center 3. Health post 4. Home (all out of health facility)	
308	Sex of the last child	1. Male 2. Female	
309	How many times have you had an abortion	Specify	
310	Desire for the recent child birth	1. Wanted then 2. Wanted later 3. Wanted no more	
311	Mode of last delivery	1. Instrumental delivery 2. spontaneous vaginal 3. Caesarean section	
312	Weight of last child at birth	1. Small 2. average 3. big	
POSTNATAL CARE UTILIZATION			
313	Did you attend PNC?	1. No 2. Yes	If no skip to 323
314	Who influence your utilization of postnatal care services?	1. Mother 2. Friends 3. Neighbor 4. Church members 5. Others (specify).....	
315	How many postnatal visits did you use?	1. once 2. 2 3. 3 3. ≥ 4	

316	Who attended you during the PNC visits?	1. Health officer/Doctor 2. Nurse/Midwife Health extension worker 3. Other (specify).....					
317	What time after delivery was your first PNC visit?	1. within the 1 st 24 hours 2. within 48 - 72 hours 3. within 1 st 7 days 4. within 7 to 14 days 5. within 42 days					
318	What services were you seeking at postnatal clinic? (more than one item can be ticked) (Specify).....	1. To seek treatment 2. Child's immunization 3. Family planning 4. Check-up for mother 5. Check-up for baby 6. Health care provider advice 99. Others					
319	What was the most reason that made not to utilize PNC services?	1. No/little knowledge 2. Being healthy 3. Being busy 4. Long waiting time 5. other (specify)					
320	What was your perception to the health care provider in your nearest facility	1. Friendly 2. Rude 3. Selfish 4. Others (specify).....					
6. Other health system related factors							
321	What is the distance from your home to the nearest health facility by local means of transportation (foot, horse)?	1. <1hr 2. 1-2hr 3. >2hr					
322	Cost including direct fees and the cost of transportation, drugs and supplies	1. Not big problem 2. Medium 3. Big problem					
323	How long did you wait before you were attended?	1. <1 hour 2. 1- 2 hours 3. 2-5 hours 4. Half day 5. 12-24 hours					
324	Your model graduation status	1. graduated 2. not graduated					
325. perceived quality of care (If utilized health services) Think of previous visits to the nearest health facility and rate the following statements, where 1 represents strongly disagree and 5 represents strongly agree.							
		Strongly agree(1)	2	3	4	Strongest dis-agree(5)	
A	The Staffs are friendly/ respect and dignity	1	2	3	4	5	

B	The Staff listened to you	1	2	3	4	5	
C	The Staffs are available when needed	1	2	3	4	5	
D	There is privacy during examinations	1	2	3	4	5	
E	The hours that the health facility is open are reasonable	1	2	3	4	5	
F	The health facility is clean	1	2	3	4	5	
G	Service in first come basis	1	2	3	4	5	
H	Do the health professionals give/spend enough time at the visits	1	2	3	4	5	
I	The health professionals treat you equally/ impartiality	1	2	3	4	5	
J	Involvement in deciding on service provided to you	1	2	3	4	5	
K	Provide timely service/attend fast	1	2	3	4	5	
L	Service you need is availability	1	2	3	4	5	
M	Service provided met your need including advice and information they give	1	2	3	4	5	
N	Health facility premises friendly for you	1	2	3	4	5	
O	Product you need including drugs and equipment in the health facility available	1	2	3	4	5	
P	Confident and trustfulness in the health professionals providing services	1	2	3	4	5	
Q	Cost of the services comfortable to you	1	2	3	4	5	

Thank you for your cooperation!!

Data collector's Name.....

Data collector's signature..... Date.....

English to Goofatho translated version of questionnaire

Demba Goofa woradan yeloppe sima aayetas imettiya fayatetha hagazuwa go77etonna mela teqqiya gaasota filganaw giigida oysha

Ta sunthay-----geetetees.

Jimma yunverestiyan maabara fayatetha 2tho digree tamaare Marqoosa Manote baggara yelida aayetas imetiya hagazuwa go77etonna mela teqqiya gaasota filganaw maraja shiishiya budunetappe taani issuwa

Nubiita tophiyan yeloppe guye aayeta hayquwappe ashanaw ha hagazoy daro maaddiyaba gidikkka aayete ha hagazuwa go77etonna mela teqqiya gaasota shaakkanawne koshiya kifiletas oge mallanaw ha filgethay oosettishe dees. Ha filgethan geliya oonikka fafiqadeppe karera wolqan gelonnayssa erisanaw koyayoos. Hessa gisho neeni nu shoobetha ekkidaba gidikko oyshaako gelanaw dandaos. 1.Ero 2. Akay

Qofiso yelo aayeti oyshaas immiya dooro zaaruwas gidin imettida facan xaafeteysa keeha xomoosada xaafa.

KIFLE 1.

Aaye Shaaho Qooday----- Qabale Shaho Qooday -----

Qooda	Oysha	Coode	xaalo
101	Laythay aapunee?		
102	Gelo/ekoy ay melee?	<ol style="list-style-type: none"> 1. azinara daysi 2. gelabiike 3. wolla doos 4. azinappe biletas 5. am77o/azinay hayqis 	
103	Amanoy aybee?	<ol style="list-style-type: none"> 1. Orthodoxe 2. Islama 3. Amano 4. Kaatolike 5. Haraa----- 	
104	Biiresebey aybee?	<ol style="list-style-type: none"> 1. Goofa 2. Gamo 3. Wolaythi 4. Amaara 5. Haraa----- 	
105	Ha keethan aapun asi dii?	Qoncissa -----	
106	Ne timirte dethay ay melee?	<ol style="list-style-type: none"> 1. Xaafonne nababo 2. Koyro detha 	

		3. 2tho dethaa 4. Kolloojenne yunivereste 5. Xaafokka nababo dandaikke	
107	Azina timirte dethay ay melee?	1. Xaafonne nababo 2. Koyro detha 3. 2tho dethaa 4. Kolloojenne yunivereste 5. Xaafokka nababo dandaikke	
108	Ne oosoy aybee?	1. Za77ancho 2. Kawo oosancho 3. Goshancho 4. Gulbata oosancho 5. Tamaare 6. Asa soo oosancho 7. Keethaayo 8. Haraa-----	
109	Azinaa oosoy aybee?	1. Za77ancho 2. Kawo oosancho 3. Tamaare 4. Gulbata oosancho 5. Goshancho 6. Haraa-----	
110	De77o oyshata		
	De77iyabata	Dees/baawa	Qooda
	Stoove		
	Oyde		
	Xarpheeza		
	Alga		
	Firaashe		
	Saate		
	Jeneratere		
	Macca miizi		
	Boori		
	Hare		
	Dorse/deeshe		
	Kutto		
	Hoothe		
	Motoore		
	Silke		
	Eraado		
	Shaaketida koshina		
	Keethaa sa77ay		
	1. Biitta		
	2. sanqa		
	3. siminto		

	Keethaa kaaray		
	1. maata		
	2. qorqoro		
	Keetha goday		
	1. mithi		
	2. shuchi		
	Oyshay	Coode	Xaalo
111	Fayatetha agazuwa ekkana mala wursetha wusaane athgey oonee?	1. Tana 2. Azinaara issippe 3. Azinaa 4. Ta aayiw 5. Ta azinaa aayiw 6. Haraa-----	
112	Wursetha naa awan yeladii?	1. Hospitaalena 2. Xeena xaabana 3. Xeena keellana 4. Soona 5. Gille kilinikena	
113	Kare keyonna mala fiila wogi de7ii?	1. Akay 2. Ee	Zaaroy akay gidikko 201thokko ba
114	Kare kessona gaasoy aybee?	1. Miche 2. asa ayfe 3. wolqa dhayo 4. haraa -----	
KIFILE 2 Eratethaanne qofara gakida oyshata			
201	Yeloppe guye imettiya hagazuwaaba si7a eray?	1. Ee 2. akay 3. hassayikke	
202	Si7ida gidikko awan si7adii?	1. fayatetha oosanchatappe 2. limaate buduneppe 3. eraadoppe 4. laggefe 5. daboppe 6. hudugeeppe 7. haraappe-----	
203	New mata fayattha ooso keethan yeloppe guye imettiya hagazoy de7ii?	1. Ee 2. akay 3. hassoyikke	
204	Yeloppe guye fayatetha keethan aybi imetii?	1. Kitibaate 2. yelo haasiya dhale 3. dhantha dhantho 4. nayta dicha bagga 5. nayta fayatetha filgethaa 6. aayeta fayatetha filgethaa	

		7. HIV filgethaa 8. Saho made 9. Haraa----					
205	Aayeti yeloppe guye aapun too hagazuwa kaalanaw bessii?	-----					
206	Yeloppe guye aaya hagazo doomanaw bessey awdee?	1. 24 saatena 2. 48-72 saatena 3. 7 qamma giddona 4. 14 qamma giddona 5. 6 saaminhta gidona					
207	Yeloppe guye imettiya hagazuwaabaa si7a eray?	1. Ee 2. Akay 3. Hassayikke					
208	Yeloppe guye de77iya iita mallati ayba aybee?	1. daro suuthi 2. kokkorsi 3. gul77appe garsa saho 4. huu7e qoxo 5. misha 6. na7i dhantha ixo 7. gura maduntha 8. kushenne sintha kixa 9. haraa-----					
209	Wodthinne yeloy ehiya meto eray?	1. Ee 2. Akay					
210	Yeloppe guye hagazuwa go7ettona ixiko ay meto ehii?	1. yelora gakkida harge 2. aaypi hayqo 3. na7a hayqo					
211	Qofa metota	Keehi like (1)	2	3	4	Keehippe like gidena (5)	
A	Yeloppe guye 42 qamman hagazuwa ekanaw bessees	1	2	3	4	5	
B	Yeloppe guye hagazoy aayi fayatethaas lo77o	1	2	3	4	5	
C	Yeloppe guye hagazoy na7a fayatethaas lo77o	1	2	3	4	5	
D	Yeloppe guye hagazoy hizappe go77etanee	1	2	3	4	5	

E	Harati Yelophe guye hagazoy go77etanaw bessees	1	2	3	4		
F	Yelophe guye hagazoy aayeta hayqophe ashes	1	2	3	4		
KIFILE 3 Fayatethara gakkida oyshata							
301	Yelophe sinthe hagazuwa ekkadii?	1. Ee 2. Akay				Zaroy akkay gidikko 307thokko ba	
302	Aappun too yelophe sinthe hagazuwa ekkadii?	1. 1 2. 2 3. 3 4. >=4					
303	Ay ageenappe doomada Yelophe sinthe hagazuwa ekkadii?	1. 1-3 2. 4-6 3. 7-8 4. 9					
304	Yelophe sinthe hagazuwan yelophe guye hagazuwabaa tamaaradii?	1. Ee 2. Akay					
305	Yelophe sinthe hagazuwa awan ekkadii?	1. Hospitaalena 2. xeena xaabana 3. xena keelana 4. soona					
306	Yelophe sinthe hagazuwa immiday oonee?	1. Dktore/nerse/yelo nerse 2. Xeena ekistenshine 3. Hudugetappe					
307	Wursetha yelison maadiday oonee?	1. Xeena moyara de77iya ase 2. Hudugo 3. Dabo 4. Lage 5. Oonikka maadibeenna					
308	Wursetha na77ay matumatethay aybee?	1. Atuma 2. Macca					
309	Aappun too na77i iitettidee?	-----					
310	Wursetha yeluwa halchadii?	1. Halchettidaba 2. Haroodes halchettis 3. Halchettibeenna					
311	Wursetha yeloy	1. masarera madetin yeletis 2. coo yeletis 3. shuhan yeletis					
312	Wursethan yeletida	1. guutha					

	na77a kiloy	2. gidigiddo 3. gita	
313	Yelophe guye hagazuwa go77etadii?	1. Ee 2. Akay	Zaaroy akkay gidikko323thokko ba
314	Yelophe guye hagazuwa ooni minthethii?	1. Aayeya 2. lagetii 3. shooroy 4. wosa keethay 5. haray-----	
315	Yelophe guye hagazuwa aapun too go77etadii?	1. 1too 2. 2 too 3. 3 too 4. >=4 too	
316	Yelophe guye ooni nena be7idee?	1. Doctore/xeena morkone 2. Nersey/yelo nersey/xeena extenshiney 3. Haray-----	
317	Yelophe simmin koyro kaalo doomiday awdee?	1. 24 saatena 2. 48-72 saatena 3. 7 qamma 4. 7-14 qamma gidonna 5. 42 qamma	
318	Yelophe guye ay kocha hagazuwaa ekadii? (issoppe daro zaaroy danda7etees)	1. Saho made/dhale koshi 2. Na77a kitibaatessa 3. Yelo haaso maadessa 4. Aayee fayatetha filgettanaassa 5. Na7a fayatetha filgettanaassa 6. Haraa-----	
319	Yelophe guye hagazuwa ekkonna mala digiday aybee?	1. Eratetha dhayo 2. Bollay saro/lo77o gidida gisho 3. Gaso ixina 4. Naago saatey darida gisho 5. Hara---	
320	Hagazuwa immiya moyara de77iya assay kandoy ay daanii?	1. Keehi lo77o 2. Kandoy iita 3. Asas gidonna Fanta kanches qoppoosona 4. Haray---	
321	Nesoope mata xeena keella/xaaba gakanaw gedan ay mela saate ekii?	1. 1 saate 2. 1-2 saate 3. >2 saate	
322	Biray gidin ogiya	1. Gita meto gidenna	

	haahotethay ay melee?		2. Gid giddo 3. Gita meto				
323	Ha xeenaa keellan/xaaban hagazuwa immanaw aapun saate gam77ethii?		1. < 1 saaten 2. 1-2 saaten 3. 2-5 saaten 4. ½ saaten 5. 12-24 saaten				
324	Module timirtayaninne pakejeta folada anjettadii?		1. Anjettas 2. akay anjetabiike				
325	Tiraate baggara giigida oyshata						
		Keehi like (1)	1	2	3	Keehippe like gidena (5)	
A	Hagazuwa immiya nayta kanddoy/ase bonchoy ne be77in ay daanii?	1	2	3	4	5	
B	Hagazuwa immiya assay hintena hayzoona?	1	2	3	4	5	
C	Hagazuwa immiya assay hinte koyishin beettoona?	1	2	3	4	5	
D	Hagazuwa immiya assay hinte xuura naagoonaa?	1	2	3	4	5	
E	Xeena keellay/xaabay ubba wode oosos dooyee?	1	2	3	4	5	
F	Xeena keellay/xaabay xeellin geeshee?	1	2	3	4	5	
G	Hagazuwa immiya assay hinte yida maaran hagazuwa immoonaa?	1	2	3	4	5	
H	Hagazuwa immiya assay hinte xeenaa filgethaas gidiya saate immoonaa?	1	2	3	4	5	
I	Hagazuwa immiya assay ubaaka issi ayfen xeelloonaa?	1	2	3	4	5	
J	Ne fayatethas wusaane imon neera zoretoonaa?	1	2	3	4	5	

K	Wodera hagazo immoonaa?	1	2	3	4	5	
L	Ne koyida hagazuwa demadii?	1	2	3	4	5	
M	New imettida hagazooy wozana kumidee?	1	2	3	4	5	
N	Xeena kella/xaaba gidoy new injetii?	1	2	3	4	5	
O	Koyettiya dhaley xeena kellan/xaaban de7ii?	1	2	3	4	5	
P	Agazuwa immiya asaanhinte wozanay shempii?	1	2	3	4	5	
Q	Hagazwaas cigetiya gatey ay daanii?	1	2	3	4	5	

Wodiya yarshada nu koyida maraja immida gisho keehidi galatoos!!

Maraja shiishey----- Firmay-----

Qammay-----/-----/-----

DECLARATION

I, the undersigned, declare that this thesis is my original work, has not been presented for a degree in this or any other university and that all sources of materials used for the thesis have been fully acknowledged.

Name: _____

Signature: _____

Name of the institution: _____

Date of submission: _____

This thesis has been submitted for examination with my approval as University advisor

Name and Signature of the first advisor _____

Name and Signature of the second advisor _____
