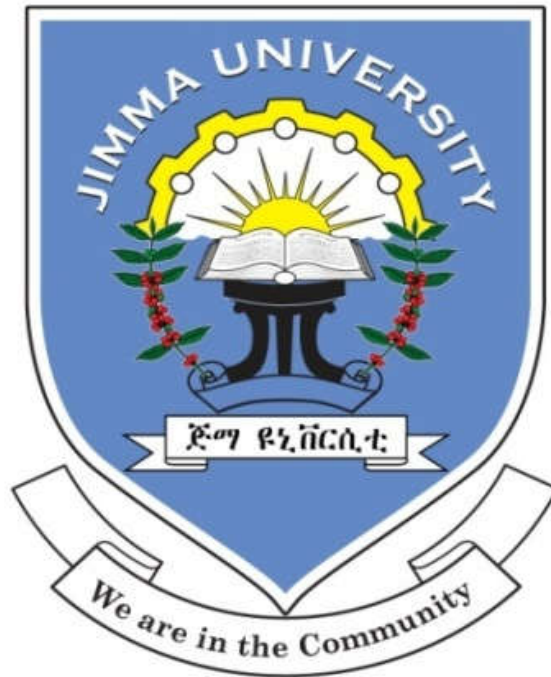


**DETERMINANTS AND PREVALENCE OF COMPLETE POSTPARTUM  
CARE UTILIZATION IN METTU TOWN, ILLUABABORA ZONE,  
OROMIYA REGIONAL STATE, SOUTHWEST ETHIOPIA, 2019**



**BY: ARAGAW MOLLA (BSC)**

**A THESIS REPORT TO BE SUBMITTED TO JIMMA UNIVERSITY, INSTITUTE  
OF HEALTH, RESEARCH AND GRADUATE STUDIES COORDINATING  
OFFICE FOR THE PARTIAL FULFILLMENT OF THE DEGREE OF MASTER  
OF SCIENCE IN INTEGRATED EMERGENCY SURGERY (OBSTETRICS,  
GYNECOLOGY AND GENERAL SURGERY)**

**MARCH, 2019**

**JIMMA, ETHIOPIA**

DETERMINANTS AND PREVALENCE OF COMPLETE POSTPARTUM CARE UTILIZATION IN METTU TOWN, ILLUABABORA ZONE, OROMIYA REGIONAL STATE, SOUTHWEST ETHIOPIA, 2019: FACILITY BASED CROSS SECTIONAL STUDY

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## **List of Abbreviations and Acronyms**

ACOG American College of obstetricians and Gynecologists

ANC Antenatal Care

CSA Central Statistics Authority

EDHS Ethiopia Demographic and Health Survey

ETB Ethiopian Birr

GP General Practitioner

HCW Health Care Worker

IESO Integrated Emergency Surgical Officer

MCH Maternal and Child Health

NGO Non-Governmental Organization

NICU Neonatal Intensive Care Unit

OPD Outpatient Department

PNC Postnatal Care

PNP Postnatal Period

PPC Postpartum Care

SPSS Statistical Package for Social Science

WHO World Health Organization



## **Abstract**

**Background:** The postnatal period is a critical phase in the lives of mothers and their infants, setting the stage for long-term health and well-being. In Ethiopia, Most maternal and infant deaths occur during this time. Optimal postpartum care is recommended to prevent these deaths; however uptake of the service is low and institutional based studies on postpartum care are also limited.

**Objective:** To determine the determinants and prevalence of complete postpartum care utilization among women who gave birth /received PNC in Mettu Karl Referral Hospital, Southwest Ethiopia in 2019.

**Methods:** Facility based cross-sectional study was conducted in sample size of 216 in Mettu Karl Referral Hospital, Southwest Ethiopia in 2019. Fifteen women who received PNC within March to September 2019 and 8 HCW currently working in the hospital were interviewed for qualitative study. Participants were selected by systematic random sampling technique for quantitative study and purposive sampling technique was applied to select participants for qualitative study. The data was coded and entered to Epi Data version 3.1 and was exported to, cleaned and analyzed by using SPSS version 24. Bivariate and multivariate logistic regression tests were carried out to identify determinant factors at p value threshold < 0.05. Thematic analysis was applied for qualitative study.

**Results:** A total of 216 participants were included in the analysis with the response rate of 100%. The prevalence of complete postnatal care service utilization in this study was 15.75%. Maternal educational status of preparatory (grade 11-12) level (P value 0.041, AOR: 2.69, 95% CI: 1.34-7.76), ANC visits at least three times (P value 0.023, AOR: 3.66, 95% CI: 1.196-11.213), and mode of delivery by Caesarean section (P value 0.032, AOR: 3.04, 95% CI: 1.101-8.368) were found to be significantly associated with complete postpartum care utilization.

**Conclusion:** This study showed that the overall complete utilization of PNC service in Mettu town is low. Mothers' education, ANC visits at least three times and caesarian deliveries were associated with complete postnatal care service utilization. It is worthwhile for policies to focus on postpartum period. More rigorous studies are needed to identify factors with causal association with complete postpartum care service utilization.

**Key words:** Postpartum Care, Utilization, Postnatal, Mettu Town

# **1. Introduction**

## **1.1. Background**

The postpartum period (PPP) is the time beginning immediately following the delivery of the placenta and extending through the six weeks (42 days) of birth. This period represents a critical phase in determining the health and survival of the mother and her newborn (1). The well being and chance of staying free of morbidity or mortality are much dependent upon the care given during pregnancy, delivery, and most importantly after delivery, the time when many maternal and neonatal deaths take place. Therefore, lack of care during postnatal period may end up in death or morbidity as well as missed opportunities to various healthy behaviors benefiting the mother and her newborn(2). For both newborns and mothers, the highest risk of death occurs at delivery, followed by the first hours and days after childbirth. It has been shown that more than two-thirds of newborn deaths would occur by the end of the first week after delivery, with up to one-half of all newborn deaths occurring in the first 24 hours. Similarly, approximately two-thirds of all maternal deaths occur in the postnatal period (3). Although some countries have made a dramatic progress, half of the maternal deaths in the world still take place in Sub-Saharan Africa where little or no progress has been made. Even though there is no single, simple, straightforward intervention that will significantly decrease maternal mortality, several studies have shown that majority of these maternal and neonatal problems could be reduced if women receive appropriate postnatal care(4–6). In spite of proven benefits of postnatal care on maternal and neonatal health, most newborns and mothers do not receive this service from a skilled health care provider during the first few days after delivery. Similarly, rates of provision of skilled care are much lower during postnatal period when compared to rates before and during childbirth(2,7). According to ACOG committee opinion on postpartum care released on April 23, 2018, 40% of women do not attend a postpartum visit. Under utilization of postpartum care impedes management of chronic health conditions and access to effective contraception, which increases the risk of short interval pregnancy and preterm birth. Attendance rates are lower among populations with limited resources, which contribute to health disparities(8). Likewise, the coverage of postnatal care (PNC) in Ethiopia remains alarmingly limited with only 7% increment over the last one and half decade (9). Hence, this study aimed at providing contemporary evidence about the level of PNC coverage and various determinant factors in South western, Ethiopia.

## 1.2. Statement of the Problem

The provision of postpartum care services to the mother and their newborns within the first 42 days of life has been set up both with the objective to prevent and reduce maternal and neonatal deaths worldwide (1). Care during this period is critical for the health and survival of both the mother and her newborn. Postnatal care is preeminently about the provision of a supportive environment in which a woman, her baby, and the wider family can begin their new life together. Many physiological and psychological changes that occur during the postnatal period determine their future well-being and health (10).

After childbirth, most women are not scheduled for follow-up care for 6 weeks, and this visit is poorly attended. Many new mothers feel unprepared for the common health issues they encounter and are uncertain of whom to contact(11).

Globally, more than half a million women die each year from complications of pregnancy and childbirth. A large proportion of maternal and neonatal deaths occur during the first 48 hrs after delivery. Every year, four million infants die within their first month of life, representing nearly 40% of all deaths of less than 5 years age children (12).

According to ACOG committee opinion on postpartum care released on April 23, 2018, currently 40% of women do not attend a postpartum visit. Under utilization of postpartum care impedes management of chronic health conditions and access to effective contraception, which increases the risk of short interval pregnancy and preterm birth. Attendance rates are lower among populations with limited resources, which contribute to health disparities(8).

In Ethiopia 61% of maternal death takes place in the postpartum period and 58% of infant mortality rate occur in postnatal period (4). A large proportion of maternal and neonatal deaths occur during the first 24 hours after delivery. The 2016 EDHS found that among women age 15-49 giving birth in the 2 years before the survey, 17% had a postnatal check during the first 2 days after birth. Four in five women (81%) did not receive a postnatal check(9). It is an incontrovertible fact that PNC services help to safeguard women from complications following delivery and provide important opportunities to assess the infant's development. Moreover, PNC services help to offer newborn care and other services like immunization and family planning which are crucial for both the mother and the infant (5). Thus, the principal objectives of PNC services are to support the mother and her family in the

transition to a new family constellation, prevent, early diagnose and treat complications of the mother and infant, refer the mother and infant for specialist care when necessary, counsel on baby care, support breast feeding, counsel on maternal nutrition, and supplementation if necessary, counsel and provide contraception service (10). Despite its importance, this period is generally the most neglected in developing countries 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 (10). Neonatal mortality of Ethiopia was 37 per 1000 live births which is the highest in sub Saharan African countries (6). Thus identifying the factors deter PNC service utilization is crucial for countries, like Ethiopia, with alarmingly high maternal and neonatal mortality rates. The present study is therefore aimed at assessment of determinants and prevalence of complete postpartum care utilization among women who gave birth and / receive PNC in Mettu Karl Referral Hospital, Southwest Ethiopia in 2019.

### **1.3. Significance of the Study**

PNC services utilization is affected by several factors including maternal age, educational level of the women, occupational status of women and husbands, place of delivery, mode of delivery, number of pregnancies, awareness about obstetric related danger sign, and awareness about PNC services (7,9,13,14). However, the determinants of utilization of PNC services are not the same across different cultures and socioeconomic status within a society. Thus, assessing factors affecting utilization of postpartum care service in different setup area is very important to improve maternal and child health services.

The postnatal period is a critical phase in the lives of mothers and newborn babies. Major changes occur during this period which determines the well-being of mothers and newborns. Yet, this is the most neglected time for the provision of quality services. Lack of appropriate care during this period could result in significant ill health and even death. Rates of provision of skilled care are lower after childbirth when compared to rates before and during childbirth. Most maternal and infant deaths occur during this time.(7) There is no institutional based study on PPC utilization in the study area and this study aimed to assess determinants and prevalence of complete postpartum care utilization among women who gave birth in Mettu Karl Referral Hospital, Southwest Ethiopia in 2019. The finding of this study will help to improve postpartum care utilization in the region.

## 1.4. Conceptual Frame Work

This conceptual framework (Figure 1) is developed from different research literatures. These were categories of independent variables: Socio demographic characteristics, Obstetric characteristics and availability of services provided on postnatal care. The dependent variable of the study was complete postpartum care utilization.

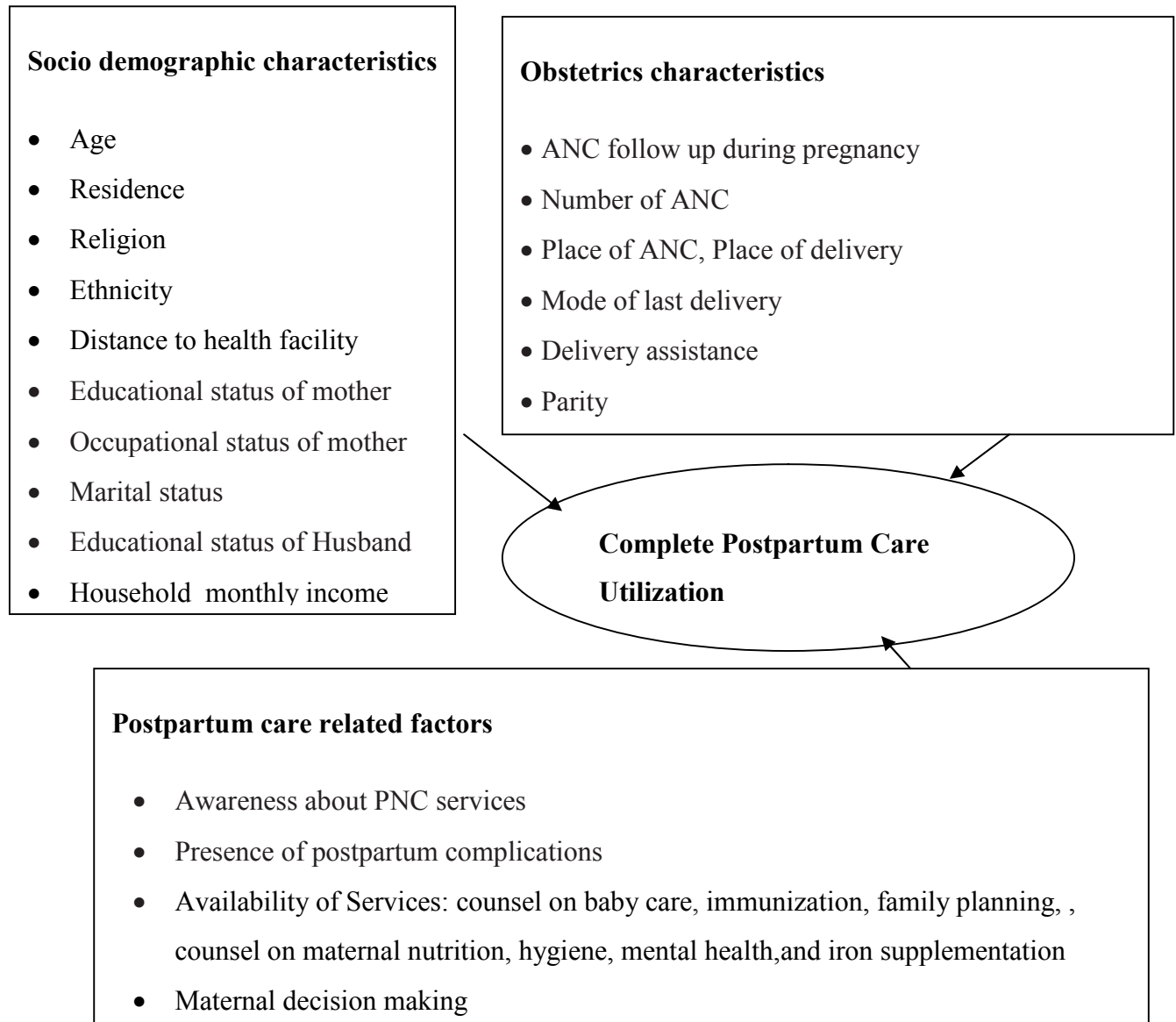


Figure 1: Conceptual framework explaining the relationship between the independent and the outcome variable

## 2. Literature Review

The weeks following birth are a critical period for a woman and her infant, setting the stage for long-term health and well-being. To optimize the health of women and infants, postpartum care should become an ongoing process, rather than a single encounter, with services and support tailored to each woman's individual needs. It is recommended that all women have contact with their obstetrician-gynecologists or other obstetric care providers within the first 3 weeks postpartum. This initial assessment should be followed up with ongoing care as needed, concluding with a comprehensive postpartum visit no later than 12 weeks after birth. The comprehensive postpartum visit should include a full assessment of physical, social, and psychological well-being, including the following domains: mood and emotional well-being; infant care and feeding; sexuality, contraception, and birth spacing; sleep and fatigue; physical recovery from birth; chronic disease management; and health maintenance (8).

The days and weeks following childbirth – the postnatal period – is a critical phase in the lives of mothers and newborn babies. Major changes occur during this period which determines the well-being of mothers and newborns. Yet, this is the most neglected time for the provision of quality services. Lack of appropriate care during this period could result in significant ill health and even death. Rates of provision of skilled care are lower after childbirth when compared to rates before and during childbirth. Most maternal and infant deaths occur during this time (7).

Postnatal period presents the highest risk of death for mothers and newborns. Although progress has been made in expanding the coverage for most of maternal health services, national prevalence of postnatal care service utilization in Ethiopia is still extremely limited.(15)

According to a study in Kenya, 47 percent of the women received PNC services. Factors associated with PNC use were mothers' age at delivery of the last child, 4 ANC visits, urban residence, and skilled delivery. However, lack of education and unskilled delivery were associated with low use of PNC services (16).

A study done Nepal found that mothers who were from urban areas, from rich families, who were educated, whose partners were educated, who delivered in a health facility, who had attended a four or more antenatal visits, and whose delivery was attended by a skilled attendant were more likely to report attending at least one postnatal care visit (17).

In Ethiopia, maternal health service utilization is very low, especially postnatal care. The percentage of mothers who receive care within two days of childbirth has shown little progress, from 2.4% in 2000 to 13% in 2014. However, it is very far below the expected level as compared to other sub-Saharan regions(18).

The level of postnatal care service utilization was found to be only a-third. Postnatal care utilization was positively associated with place of residence, educational status, occupational status and place of delivery. Accordingly; living in rural area, low literacy status, engaged in laborious government office works and home delivery were found to be determinants of postnatal care utilization.(19)

Postnatal period presents the highest risk of death for mothers and newborns. Although progress has been made in expanding the coverage for most of maternal health services, national prevalence of postnatal care service utilization in Ethiopia is still extremely limited. The prevalence of complete postnatal care utilization was found to be 28.4% in a study in Northern Shewa (15).

In the study done in Fiche Town , Oromiya Region, 28% of mothers didn't get postnatal services and the main reasons for not utilize postnatal services were lack of awareness about the presence of services and waiting time in health institutions is very long(20).

In a study in Afar regional state in 2016, 27.7% of women had attended at least one postnatal care follow up. Women who attended antenatal care visit, who mentioned at least one pregnancy danger sign and who gave birth at health facility were more likely to utilize postnatal care service (21).

A large proportion of maternal and neonatal deaths occur during the first 24 hours after delivery. For both the mother and infant, prompt postnatal care is important for treating complications that arise from delivery and providing the mother with important information on caring for herself and her baby. The 2016 EDHS found that among women age 15-49 giving birth in the 2 years before the survey, 17% had a postnatal check during the first 2 days after birth. Four in five women (81%) did not receive a postnatal check (9). Women who delivered in a health facility were much more likely to receive a within 2 days of delivery than those who delivered elsewhere (42% versus 2% Forty-five percent of urban women received a postnatal check-up within 2 day rural women.

The 2019 Mini EDHS found that among women age 15-49 giving birth in the 2 years before the survey, 34% had a postnatal check during the first 2 days after birth (31).



The proportion of women who received postnatal check-ups in the 2 days after by region is a low of 9% in Oromiya, 16.9% in SNNPR and a high of 55% in Addis Ababa (9).

Each year, 287,000 women die from complications related to pregnancy and childbirth, and about 99% of these deaths occur in developing countries. The first hours, days and weeks after childbirth are a dangerous time for both the mother and newborn infant. Post natal care prevents the great majority of maternal and child morbidity and mortality. Despite its importance, this period is generally the most neglected in developing countries (13).

The postnatal period is critical to the health and survival of a mother and her newborn. Lack of care in this period may result in death or disability as well as missed opportunities to promote healthy behaviors, affecting women and newborn children (22).

According to WHO, the optimal number of PNC visits are four and timing of postnatal contacts to improve neonatal survival and maternal health are: first 24 hours, day 3 (48–72 hours), between days 7– 14 and 6 weeks after birth. These contacts can be made at home or in a health facility, depending on the context and the provider. Additional contacts may be needed to address issues or concerns(7).

Utilization of modern contraceptive during the postpartum period was significantly decreased placing women at risk for a pregnancy in the extended postpartum period. The prevalence of modern contraceptive use among women in the extended postpartum period was 45.8% (23).

In a study in Arsi Zone, South East Ethiopia in 2016, the level of early postnatal care service utilization was 23.7%. The reasons for not to use early PNC services were: Having no information on the importance of early PNC services 140 (48.5%) followed by lack/no transportation access 76 (26.3%) (24).

63 % of the women did not utilize postnatal care within 42 days after delivery and only 4 % of the women utilized the appropriate care. The remaining 33 % of the women had some level of care which means that they had one or two of the three essential components of postnatal care. Among the postnatal care non-users, majority of them were aged 25–34 at birth of the child, Muslims, live in rural areas, married, had no formal education, delivered in non-health facility or were poor(25).

In a study done in Asela town, Arsi Zone, Oromiya Regional State, Ethiopian, in 2017, the overall prevalence of PNC service utilization in this study was 72.8%. The quarter claimed did not know PNC service. About 74.2% heard about PNC while 152 (72.7%) reportedly used postnatal care

service. Mothers with better education, antenatal follow up and appointment for postnatal care showed better proportion of postnatal care use(26).

According to a study in wolayita zone, the prevalence of postnatal care service utilization in this study was 34.9%. This study showed that younger mothers, [AOR = 1.82, (95% CI = 1.23, 2.69)]; those mothers who followed antenatal care service in their last pregnancy, [AOR = 10.39, (95% CI = 4.99, 21.60)]; who delivered their last child in health facilities, [AOR = 2.66, (95% CI = 1.75, 4.03)]; who have good knowledge on postnatal care service utilization, [AOR = 7.25, (95% CI = 4.30, 12.21)]; and whose couples' have good attitude towards postnatal care service utilization, [AOR = 1.76, (95% CI = 1.16, 2.69)] were more likely utilized postnatal care service than their counterparts(27).

According to the study done in Shebe Sombo Woreda , Jimma Zone ,the magnitude of PNC utilization Of the total respondents, 318 (58.5%) were utilized postnatal care service after delivery within six weeks of their last birth. Most of the mothers 252 (79.2%) received family planning services followed by child immunization 243 (76.4%) services during their postnatal care visit(28).

In the study of Further Analysis of the 2016 Demographic and Health Survey analysis, among mothers who delivered at home, 2.6% (95% CI: 2.2%–3.0%) received timely postnatal care (PNC) versus 5.3% (95% CI: 4.6% – 6.2%) among all mothers with a recent birth. Among women who gave birth at home after attending four or more ANC visits, 8% (95% CI: 6.1%–11.5%) attended postnatal care. The proportions of women, who received PNC, though very small, varies across different socio demographic characteristics. About 24% of urban residents attended PNC compared with 8% of rural residents. Twelve percent of mothers who completed secondary and above education reported attending PNC versus 9% of mothers with no education. Ten percent of Christian women attended PNC versus 6% of other religions. Among the richest women, 21% attended PNC compared with 7% of the poorest women. In terms of working status, 11% of mothers working outside the home had postnatal care versus 8% of nonworking women(29).

Considering birth order, mothers of only 8%, 45%, and 36%, respectively, of first, second-to-fourth, and fifth-or-more births attended postnatal care. Among mothers who said their recent birth was not wanted, 13% attended PNC. Eight percent of mothers whose birth was wanted then attended PNC, as well as 11% of mothers whose birth was wanted(29).

Of all the variables included in the multivariate logistic regression mode, only one variable showed a statistically significant association with using postnatal care services after attending antenatal care and delivering at home—receiving more components of antenatal care. An increase of one component in receiving antenatal care improves the odds of using postnatal care by 40% (95% CI: 1.1-1.8) (29).

Surveys and focus groups tell us that women feel unprepared for the emotional, biological, and social changes that occur postpartum and less than half of women report receiving adequate information regarding postpartum depression, nutrition, physical activity and weight loss, or changes in sexuality and emotional response. By listening to and anticipating women's needs, the client-provider relationship is strengthened, increasing the likelihood of postpartum follow-up. This commitment to patient-centered care should improve both maternal health outcomes and maternal and infant well-being throughout the life course(30).

Prior to discharge from the hospital, all women should receive counseling on warning signs and symptoms postpartum that should prompt medical attention and written instructions should be provided on who to contact with common postpartum problems. In qualitative studies, women report being unsure who to contact with questions or concerns, particularly when questions arise that overlap provider expertise, such as those pertaining to lactation and medication use(30).

According to the study in in Addis Ababa,the proportion of postnatal care visit across 48hrs of discharge, after one week of discharge and at six weeks of postpartum were 28(10.1%), 199(71.9%) and 143(51.6%) respectively. With regard to the frequency of postnatal care visit, 159(57.4%) of participants had visited once, 112(40.4%) women had two time, and the remaining 6(2.2%) were having three or more (32).

### **3. Objectives**

#### **3.1. General Objective**

To determine the determinants and prevalence of complete postpartum care utilization in Mettu Town, Oromiya Regional State, Southwest Ethiopia in 2019

#### **3.2. Specific Objectives**

- ▶ To describe the prevalence of complete postpartum care utilization in Mettu Town
- ▶ To identify predictors of complete postpartum care utilization in Mettu Town

## **4. Methodology**

### **4.1. Study Area and Period**

This study was conducted at Mettu Karl Referral Hospital which is found in Mettu Town, Illuababor Zone. Mettu Town is found 600 km southwest of Addis Ababa. Its catchment population is 1.6 million of which 51.2% females and 48.8 % males. Mettu town has 1 Health Center and Mettu Karl Referral Hospital serves as referral center. This hospital has 160 beds in four wards which give 24 hours services and it has multidisciplinary staffs (two general surgeons, one internist, two obstetrician/gynecologists, two emergency surgical officers, 20 GPs, 10 pharmacists, 6 pharmacy technicians, 2 radiographer, 3 psychiatry nurses, 2 optometrist, 10 lab technologist, 4 lab technicians, 64 Bsc and 48 clinical nurses, 22 midwives, 8 anesthetists and 131 supporting staffs). The study was conducted from March to September 2019.

### **4.2. Study Design**

Facility based cross-sectional study was conducted with 216 mothers who received PNC within March 2019 to September 2019 and qualitative study using the client exit interview and HCW interview was conducted.

### **4.3. Source Population**

All women who gave birth /received PNC within March 2019 to September 2019 and come for postpartum maternal and neonatal care

### **4.4. Study Population**

Sample of women who gave birth /received PNC within March 2019 to September 2019 at MCH clinic and obstetrics/ gynecology ward were the study population. Sample of health care providers were interviewed as part of study subjects.

## **4.5. Inclusion and Exclusion Criteria**

### *4.5.1. Inclusion criteria:*

All women who delivered in the facility and coming with their delivery charts to receive PNC within March 2019 to September 2019 were included for the purpose of accuracy.

### *4.5.2. Exclusion criteria:*

Mentally and/or physically incapable mothers were excluded from the study due to difficulty of obtaining accurate information.

## **4.6. Study Variables**

*The dependent variable* is complete postpartum care utilization which refers to postpartum care service uptake at least three of WHO's recommendations for PNC visit within first day (24 hours), day 3 (48–72 hours), between days 7–14, and Six weeks after delivery subsequently. The outcome variable was measured by asking the practice of at least one of maternal and/or neonatal components of PNC and timing of postpartum care visit with four possible responses (i.e., (1) only received postnatal care once after delivery, (2) received twice (3) received three times and (4) received four times subsequent postnatal care within the recommended time frame (successive or interrupted)). This self-reported visit was cross-confirmed by reviewing postpartum registration records. Finally, the outcome variable was categorized as 1: complete PPC utilization and 0: sporadic PPC utilization.

*The independent variables:* Socio demographic factors (age, educational status, income, and marital status, occupational status, ethnicity, religion, decision on maternal health care, distance from health facility, residence, facility set up), obstetrics related factors (parity, ANC use, place of ANC, place of delivery, delivery assistance, mode of delivery,) and postpartum care health service related factors (awareness about PNC services, source of information, counsel on baby care, immunization, family planning, counsel on maternal care and postpartum condition treatment).

#### 4.7. Sample Size Determination and Sampling Techniques

The sample size for the current study was calculated using single population proportion formula with the assumption of 95% confidence level, 17% of women received a postnatal check within the first 2 days of birth(9)

$$n = \frac{Z(\alpha/2)^2 P(1-P)}{d^2} \quad \text{Where: } n = \text{Sample size; } Z(\alpha/2) = 95\% \text{ confidence interval}$$

which is 1.96; P = proportion of postnatal care utilization (17%); d = marginal of error which is 5%. The final sample size (216) was obtained. About 15 women who received PNC within March 2019 to September 2019 and 8 HCW currently working in the hospital were interviewed for qualitative study.

Finally, systematic random sampling technique for quantitative study and purposive sampling technique for qualitative study was conducted to obtain the study subjects.

#### 4.8. Operational Definitions

**Complete Postpartum care utilization:** It is for every mother and baby who have been provided at least three of a total of four postnatal visits on first day (24 hours), day 3 (48–72 hours), between days 7–14 and six weeks after delivery subsequently and received at least one of maternal and/or neonatal PNC components.

**Postpartum Care:** refers to the assistance or care given to mother and baby by health workers during the postpartum follow up period.

**Seclusion** It is a cultural/social practice that forbids mothers from going out and/or joining peoples for 40 days starting from the day of delivery.

**Early postpartum care:** post natal care at least once during the early postpartum period (within 7 days after delivery).

**Autonomous:** woman who can decide by herself or jointly with her husband on maternal health services

**Skilled personnel:** Is a health professional that is trained in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns.

#### **4.9. Data Collection Material and Methods**

The study had both quantitative and qualitative components.

For quantitative component, data was collected prospectively using a structured questionnaire via a face-to-face interview which is developed based on objectives of this study from different literatures and EDHS 2016. The questionnaire contains three parts. The first part is socio demographic characteristics; the second part is obstetrics characteristics of the mother and the third part is PNC service utilization related factors.

For qualitative component, data was collected prospectively by applying client exit interview on quality of overall care and satisfaction with the care provision, health care worker interview (HCW) about the quality of PNC and provider attitude and skill in providing all the components of PNC, and chart review. Health care workers for interview were purposefully drawn from the staffs, based upon their current responsibility involving postpartum women. Clients who have stayed in the hospital for 24 hours after delivery and returned for checkup between 3 days and 42 days for PPC were interviewed at the exit of PPC service.

The principal investigator gave training for data collectors on how to fill the prepared checklist, the importance of data quality and the relevance of the study. One nurse supervised the daily activity, consistency and completeness of the checklist alternatively and appropriate support was given during the data collection process and was checked the daily activities of data collectors. Four midwives were involved in the data collection. Two-day training was given to the data collectors.

#### **4.10. Data Quality Management**

Before data collection, the prepared checklists in English was assessed and commented by research advisor. During data collection, in order to avoid the interpersonal variation between data collectors, data was collected by the same data collectors throughout the data collection. Regular, twice per week supervision was taken place for checking the consistency and completeness of checklist by the principal investigator. Before starting data analysis, completeness was rechecked.



#### **4.11. Data Processing and Analysis**

The data was coded and entered to EpiData version 3.1 and was exported to, cleaned and analyzed with SPSS version 24. The data was described using frequency and/or cross-tabulation for categorical variables. Bivariate and multivariate logistic regression tests were carried out to identify determinant factors at p value threshold  $< 0.05$ . Thematic analysis was applied for qualitative study. The data was presented using tables, charts and graphs.

#### **4.12. Ethical Considerations**

Before the actual data collection; the proposal was submitted to Jimma University, Institute of Health, Department of Obstetrics and Gynecology, and then ethical clearance letter was obtained from the Institutional Review Board (IRB) of Jimma University, Institute of Health. A formal letter was obtained from the coordinator of Integrated Emergency Obstetrics (Obstetrics, Gynecology and General surgery) to be given to the hospital administrator office. The participants were well informed about the purposes of the study, and oral consents were obtained accordingly. The participants' rights to refuse or withdraw from participating in the study and confidentiality issues were respected.

#### **4.13. Dissemination Plan of Study Findings**

After completing, the result of the study will be presented to Jimma University community as part of IESO thesis; and the result will be submitted to Jimma University, Institute of Health, Department of Obstetrics and Gynecology and documents will be given to targeted health facility and NGOs working on this area. Further attempt will be made to publish it on national and international scientific journals

## 5. Results

### 5.1 Socio demographic Characteristics.

A total of 216 mothers participated in the study making a response rate of 100%. Nearly two-third (73.1%) of respondents were found within the age group of 20–29. Majority of the participants 209 (96.8%) were married. Majority of the participants were from Oromo (74.5%) ethnic group and Muslim (57.9%) religious background (Table 1). One-quarter (23.1%) of the mothers attended second cycle primary education and 21 women (9.7%) had never been in school (Figure 2).

Table 1: Socio demographic characteristics of the study participants attending Mettu Karl Referral Hospital, Illuababor Zone, Southwest Ethiopia, 2019

Characteristics		Frequency	Percent (%)
Age Group	15 – 19	8	3.7
	20 -24	79	36.6
	25-29	79	36.6
	30 -34	41	19
	35 and above	9	4.2
Marital Status	Single	2	0.9
	Married	209	96.8
	Divorced	3	1.4
	Widowed	2	0.9
Occupational Status of Mother	Civil servant	45	20.8
	Farmers	38	17.6
	Merchant	18	8.3
	House wife	111	51.4
	Others( Students)	4	1.9
Residence Place	Rural	107	49.5
	Urban	109	50.5
Religion	Orthodox	45	20.8
	Muslim	125	57.9
	Protestant	46	21.3
Ethnicity	Oromo	161	74.5
	Amhara	42	19.4
	Other (Gurage 3, silte 4, Masha 3, Gambella 3)	13	6

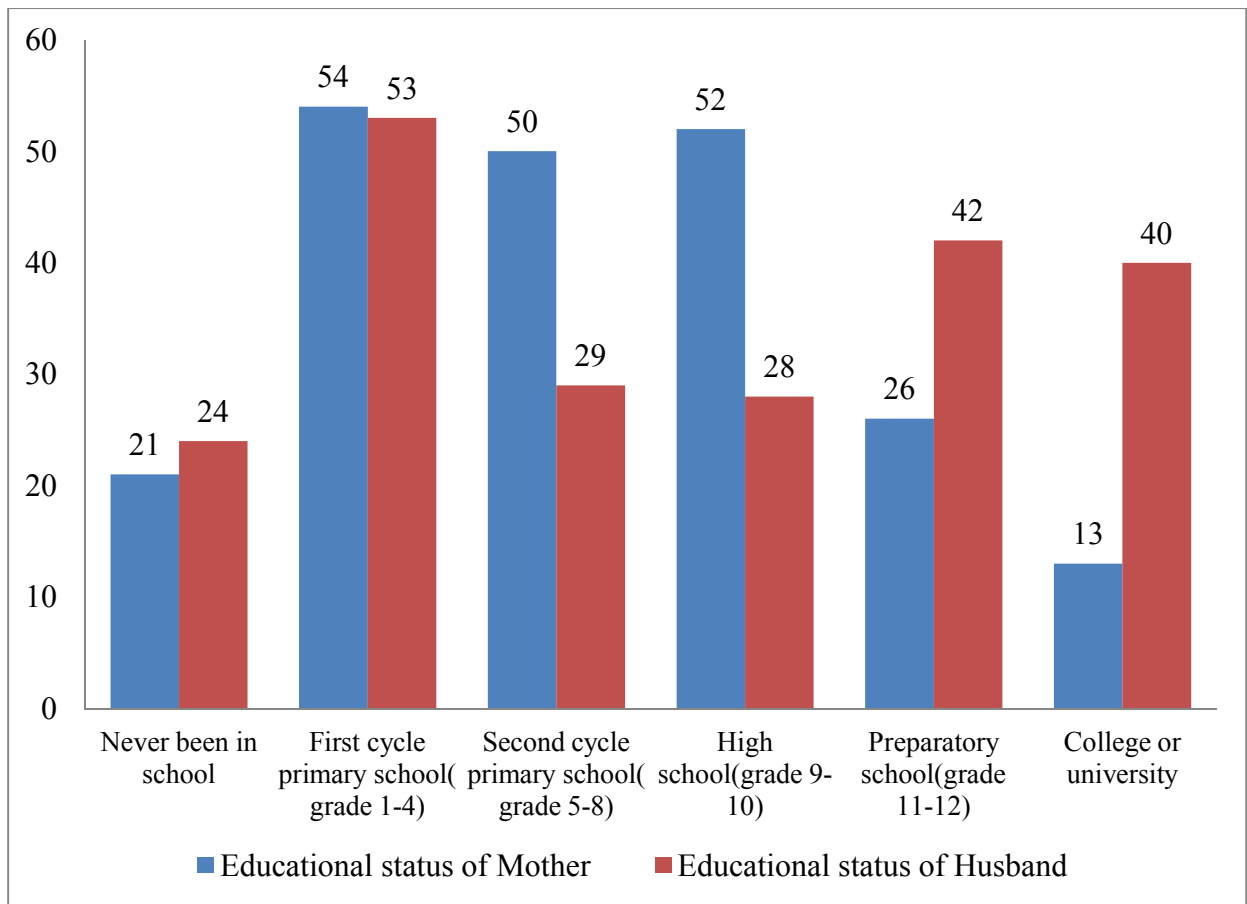


Figure 2: Educational status of the mother and husband of the study participants attending Mettu Karl Referral Hospital, Illuababor Zone, Southwest Ethiopia, 2019

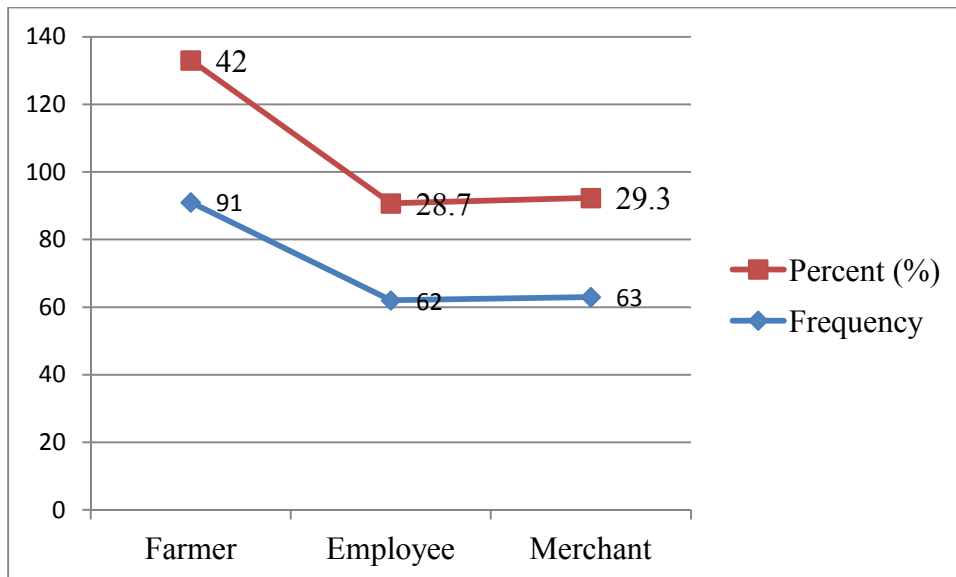


Figure 3: Occupational status of husband of the study participants attending Mettu Karl Referral Hospital, Illuababor Zone, Southwest Ethiopia, 2019

Regarding their decision making power, majority 188(87%) of the respondents reported that decision regarding PNC service utilization was made jointly with husband and while 25 (12%) by themselves.

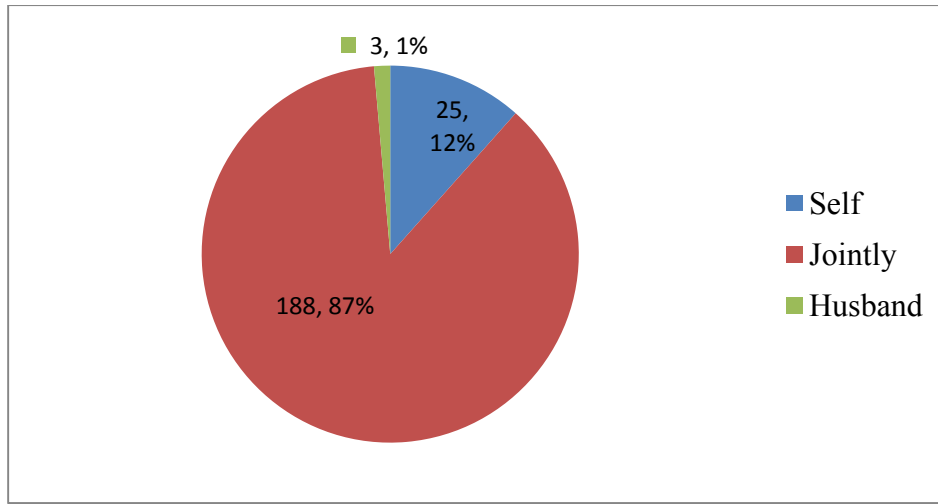


Figure 4 : Decision on maternal health services of the study participants attending Mettu Karl Referral Hospital, Illuababor Zone, Southwest Ethiopia, 2019

## 5.2. Obstetrics Related Characteristics of Mother

Among respondents, 200 (92.6%) mothers had ANC follow while 16 (7.4%), of the mothers had no antenatal care follow-up during recent pregnancy. Regarding ANC visits 12 (6%) mothers had only one ANC visit, 53(26.5) mothers had only two ANC visits, 68(34%) mothers had only three ANC visits and 67(33.5%) mothers had four ANC visits. About 157(78.5%) had ANC follow-up at health center while 43(21.5%) had at hospital.

Majority of mothers (82.9%) had delivered at hospital and 37(17.1%) had delivered at health center. As to the mode of delivery, about 141 respondents (65.3%) delivered by spontaneous vaginal delivery, 33(15.3%) by instrumentally assisted vaginal delivery and 42 (19.4%) delivered by caesarian section.

Among respondents, 46 (21.3%) mothers were para one, , 79(36.6%) mothers were para two, , 62 (28.7%) mothers were para three, , 15 (6.9%) mothers were para four and about 14 (6.5%) mothers were para five and above.

Twenty seven (12.5%) mothers faced pregnancy and delivery complication while they gave a recent birth. Among these fourteen mothers had CPD, eleven mothers had preeclampsia and two mothers had APH. (Table 2)

Table 2: Obstetrics related characteristics of the study participants attending Mettu Karl Referral Hospital, Illuababor Zone, Southwest Ethiopia, 2019

Characteristics	Frequency	Percent (%)
ANC follow up during current pregnancy		
Yes	200	92.6
No	16	7.4
Number of ANC visits		
Only one	12	6
Only Two	53	26.5
Only Three	68	34
Four	67	33.5
Place of ANC		
Health center	157	78.5
Hospital	43	21.5
Place of last delivery		
Health center	37	17.1
Hospital	179	82.9
Mode of last delivery		
Spontaneous vaginal delivery	141	65.3
Instrumentally assisted vaginal delivery	33	15.3
Caesarian delivery	42	19.4
Parity		
Para one	46	21.3
Para two	79	36.6
Para three	62	28.7
Para four	15	6.9
Para five and above	14	6.5
Complications faced during current pregnancy and delivery		
CPD	14	51.9
Preeclampsia	11	40.7
APH	2	7.4

### **5.3. Postpartum care related characteristics of the study participants**

#### **5.3.1. Awareness of mothers and barriers to PPC service utilization**

From total respondents, 172 (79.6%) mothers got information about postnatal care services from health personnel. Concerning the benefits of postpartum care, 84 (38.9%) mothers said it is important to check conditions of infants. Majority (92%) of mothers said there are no cultural practices about use of PPC.

Before discharge from the health facility, 187 (86.6%) mothers were told about danger signs of maternal health after delivery and 29(13.4%) were not told; while 192 (88.9%) mothers were told and 24 (11.1%) were not told about danger signs of newborn health after delivery. (Table 3)

#### **5.3.2. Package (timing, place and number) of postpartum care visits**

The prevalence of complete postpartum care utilization is 15.7 %. The prevalence of postpartum check up of two times is 44.9%. Majority 189 (87.5%) of participants claimed that the starting time of utilization of PPC was on the first 24 hours after delivery. Majority 197 (91%) of postpartum care providers were midwives and the rest were nurses. (Table 3)

#### **5.3.3. Contents of postnatal care for the mother and newborn**

Significant number of mothers and newborns did not receive appropriate counseling and care per recommended components for the mother and newborn. About 26 (12%) mothers were not Counseled on maternal postpartum complications; 87 (40%) were not Counseled on nutrition and about 119(55%) mothers were not Counseled on personal hygiene including hand wash except to take shower at the time of discharge.

On the other hand, about 37 (17.1%) of newborns were not vaccinated with OPV0 and BCG. about 18 (8.3%) of mothers were not Counseled about exclusive breastfeeding. About 75(35%) mothers were not counseled about umbilical cord care. (Table 4)

Table 3: Postpartum care related characteristics of the study participants attending Mettu Karl Referral Hospital, Illuababor Zone, Southwest Ethiopia, 2019

<b>Postpartum care related characteristics of mothers</b>		Frequency	Percent (%)
Source of information about use of PPC	Health institution/ care provider	172	79.6
	Radio/TV	36	16.7
	Family	8	3.7
Benefits of postpartum Care	For family planning	72	33.3
	To check conditions of infants	84	38.9
	how to feed their infant	39	18.1
	Vaccination of infant and mother	21	9.7
Cultural practices and beliefs about use of PPC	Yes	18	8.3
	No	198	91.7
PNC visits received after final delivery	One	85	39.4
	Two	97	44.9
	Three	25	11.6
	Four	9	4.1
Starting time of utilization of PPC	Day one (24 hours),	189	87.5
	Day 3 (48–72 hours),	27	12.5
Postpartum care provider	Nurse	19	8.8
	Midwife	197	91.2

Table 4: Contents of postnatal care for the newborn and mother in the study participants attending Mettu Karl Referral Hospital, Illuababor Zone, Southwest Ethiopia, 2019

<b>Contents of Postnatal Care for The Newborn</b>		<b>Frequency</b>	<b>Percent</b>
General assessment and identifying signs of severe illnesses done for newborn	Yes	193	89.4
	No	23	10.6
Counseled about exclusive breastfeeding	Yes	198	91.7
	No	18	8.3
Counseled about umbilical cord care	Yes	141	65.3
	No	75	34.7
Vaccination for your neonate provided	Yes	179	82.9
	No	37	17.1
<b>Contents of Postnatal Care for The Mother</b>			
General assessment and identifying signs of severe illnesses done for the mother	Yes	191	88.4
	No	25	11.6
Counseling on maternal postpartum complications	Yes	190	88
	No	26	12
Counseling on birth spacing and family planning	Yes	198	91.7
	No	18	8.3
Counseling on nutrition	Yes	129	59.7
	No	87	40.3
Counseling on hygiene	Yes	97	44.9
	No	119	55.1
Counseling about emotional well being	Yes	56	25.9
	No	160	74.1
Iron and folic acid supplements provided	Yes	157	72.7
	No	59	27.3



#### **5.4. Factors Associated with Postnatal Care Service Utilization**

After generating factors that were identified to be associated in bivariate analysis ( $p < 0.05$ ), they were taken through multiple logistic regression model analysis by first reference category. This generated three determinant factors associated with complete postpartum care utilization ( $P$  value  $< 0.05$ ).

Maternal educational status of preparatory (grade 11-12) level ( $P$  value 0.041, AOR: 2.69, 95% CI: 1.34- 7.76), ANC follow up of three visits ( $P$  value 0.023, AOR: 3.66, 95% CI: 1.196-11.213), and mode of delivery by Caesarean section ( $P$  value 0.032, AOR: 3.04, 95% CI: 1.101-8.368) were found to be significantly associated with complete postnatal care service utilization in multivariate logistic regression analysis.

Mothers with educational status of preparatory (grade 11-12) level were about 2.7 times more likely to get complete postpartum care utilization compared to those never having been in school ( $P$  value 0.041, AOR: 2.69, 95% CI: 1.34- 7.76).

Mothers who have ANC follow up of three visits were 3.6 times more likely to get postnatal care service utilization when compared with those mothers having ANC follow up only once ( $P$  value 0.023, AOR: 3.66, 95% CI: 1.196-11.213).

Mothers who gave birth by cesarean section were 3 times more likely to get postnatal care services than mothers who gave birth by spontaneous vaginal delivery ( $P$  value 0.032, AOR: 3.04, 95% CI: 1.101-8.368) (Table 5).

Table 5: Bivariate and multivariate analysis of factors associated with complete postpartum care service utilization in Mettu Karl Referral Hospital, Southwest Ethiopia, 2019.

Variables		Complete PPC		P value	COR	AOR	95 % Confidence Interval	
		Yes	No				Lower	Upper
Educational status of mother	Never been in school	1	20	3.031	2.50	1.255	4.461	5.031
	first cycle primary school( grade 1-4)	6	48	2.025	5.00	1.229	20.339	26.025
	second cycle primary school( grade 5-8)	7	43	2.055	3.83	.972	15.162	26.055
	high school(9-10)	7	45	1.047	4.018	1.019	15.845	28.047
	preparatory school(11-12)	8	18	<b>.041</b>	3.67	2.691	1.342	7.761
	college or university	5	8	0.067	4.018	2.019	15.845	28.047
number of ANC visit	Only one	0	12	.202			-----	-----.
	Only two	2	51	.063	3.179	2.079	3.397	17.826
	Only three	7	61	<b>0.023</b>	5.187	3.663	1.196	11.213
	Four	25	42	0.35	3.804	1.632	2.902	12.145
Mode of last delivery	Spontaneous vaginal delivery	12	129	.060	6.877	1.088	.250	4.743
	Assisted vaginal delivery	5	28	.256	2.121	.579	7.768	9.256
	Caesarean delivery	17	25	<b>0.032</b>	3.405	3.035	1.101	8.368

## 5.5 Qualitative Study results

Qualitative data was collected through semi structured interviews for 15 clients and 8 health care workers currently working at MCH and obstetrics ward and the data was analyzed in the following steps.

- 1: All questionnaires were taken and all answers listed for a particular question.
- 2: To establish categories, codes were given for the answers belong together in one category.
- 3: Answers were again, grouped with the same code together.
- 4: Then each category of answers was given a label that covers the content of all answers.
- 5: All questionnaires checked then categories and labels adjusted.
- 6: The final list of labels for each category made and each label given a code (number).
- 7: All data was coded and entered to SPSS version 24 then the content of each answer given in each categories were analyzed.

The number and percentage of respondents that fall into each theme were reported and different opinions and/or reasons were quoted.

### 5.5.1. Awareness and perceptions of mothers and barriers to complete PPC utilization

The total of 15 mothers came for postpartum care to MCH clinic at Mettu Karl referral Hospital were interviewed about their awareness and perceptions about what postpartum care is and its importance and about postpartum visits.

When asked about what postpartum care is, 4 respondents attributed it to the care given baby alone, 9 respondents attributed it to the care given for mother and baby after delivery up to 42<sup>nd</sup> day and 2 respondents attributed it to the care given for the mother alone after delivery up to 42<sup>nd</sup> day. The following responses best illustrated these assertions:

*“In my opinion postpartum care is the care given for mother and baby after delivery up to 42<sup>nd</sup> day and specific cares are counseling about family planning and infant immunization. (26 years old mother, client exit interview)”*

Another respondent shared her opinion thus:

*“Postpartum care is the care given for baby alone after delivery. (32 years old mother, client exit interview)”*

When asked about importance of postpartum care 8 mothers responded for check up for both mother and newborn, 4 mothers responded for prevention of maternal and newborn illness, 2 mothers responded for family planning, one mother responded for child vaccination. One client responded as:

*“Postpartum visit after delivery is important for check up for both mother and newborn. Health care workers checked my blood pressure, weight baby, check my breast attachment and asked me about vaginal bleeding and fever. (30 years old mother, client exit interview)”*

Another client responded as:

*“Postpartum visit after delivery is important for prevention of maternal and newborn illness. The midwives assessed for vaginal bleeding, temperature, Blood pressure and heart rate during the postpartum visit. New born was assessed during each postnatal care contact if any of these signs is present: stopped feeding well, fast breathing, fever, any yellow palms and soles. They encouraged us to seek health care early if we identify any problem of new born in-between postnatal care visits. (24 years old mother, client exit interview)”*

When asked about postpartum visits, clients had different responses. Hence, 9 mothers responded as two visits at 1st 24 hr and 42nd day, 4 mothers responded as three visits on first 24 hr, 3rd day and 42nd day, one mother responded as two visits on first 6 hr and 6th day and one mother responded as one visit at 42nd day.

When interviewed if there are any changes to be implemented in postpartum care provision, one client discussed as: *“In my opinion, there is an intense focus on women’s health prenatally but care during the postpartum period is infrequent and late. Yes, just like ANC service, there should be a separate room with room number for postpartum care provision so that mothers can easily and freely accessed it. (28 years old mother, client exit interview)”*

### **5.5.2. Provider's perception about facility location and set up**

A total of eight (8) midwives working in MCH and obstetrics/gynecology ward were participated in health care provider's interview as study subjects to assess provider attitude and skill in providing all the components of PNC and their practices and perceptions about complete PPC utilization.

Providers were interviewed about timing of discharge from a health facility after birth, whether there a separate postnatal care provision room in the facility, the need for improving the set-up of the facility for PPC and home PNC visits provided by health workers.

Six Bsc midwives responded that timing of discharge from a health facility after birth was after six hours after vaginal delivery and two midwives said after 72 hours after non complicated caesarean delivery. All midwives said there is no separate postpartum care room in the facility. All midwives said there is no home PPC visit by midwives but it is provided by health extension workers.

Regarding the need for improving the set-up of the facility for PPC service provision, one Bsc midwife discussed as:

*"In my opinion, the major focus on women's health is during pregnancy and delivery but care during the postpartum period is not satisfactory. Thus, we should work on postpartum care and there should be a separate room for postpartum care provision so that mothers can easily and freely access it."*

(Provider code 3, Health care provider's interview)

### **5.5.3. Provider's practices and perceptions about complete PPC utilization**

Providers were interviewed about their practices and perceptions about postpartum care; PPC services the facility offer and the optimal number and timing of postnatal contacts to improve neonatal survival and maternal health.

One Bsc midwife explained postpartum care as: *"It is a care provided for both mother and her newborn starting after delivery up to 42 days of postpartum period."* (Provider code 2, health care provider interview)

When providers asked what PPC services the facility offers, two midwives said immediate postpartum care like v/s check, see bleeding and cord care; three midwives said counseling and managing immediate postpartum maternal and neonatal complications to improve survival and the other three midwives said family planning, counseling on danger signs, giving BCG and OPV<sub>0</sub>

When providers asked about the optimal numbers and timing of postnatal contacts, each of them responded different answers.

One midwife said

*“It is four visits on 1<sup>st</sup> 24 hours, 3<sup>rd</sup> day, 7-14<sup>th</sup> days and 42<sup>nd</sup> day.”* (Provider code 5, health care provider interview)

The other midwife said

*“It is on immediate 6 hours and 6th day.”* (Provider code 3, health care provider interview)

Another midwife said

*“It is at 0-48hour, 2-3 days, and 4-7 days.”* (Provider code 4, health care provider interview)

Other two midwives said

*“It is on the first 24 hour, 72 hour and 7<sup>th</sup> day.”* (Provider code 6 and 7, health care provider interview)

When the midwives interviewed about their perceptions about women who had utilized PPC, they discussed in their own ways.

One participant discussed as: *“It is important to check maternal status and neonatal status. It is very important to decrease maternal and neonatal mortality and morbidity during the postnatal period.”* (Provider code 1, health care provider interview)

Another participant discussed as:

*“PPC service utilization enables to be well aware of the danger signs; so it is easy for them to identify and seek help.”* (Provider code 4, health care provider interview)

## 6. Discussions

This study was conducted on the determinants and prevalence of complete postpartum care service utilization in Mettu Town, Southwest Ethiopia. The current study revealed that only 34 (15.7%) of mothers have utilized complete postpartum care as per the standard recommendation. To make the details, in this study, with regard to the frequency of postnatal care visit, 85(39.4%) of participants had visited once, 97(44.9%) women had two time, and the remaining 34 (15.7%) were having three (25 (11.6%) or four (9 (4.1%). This is slightly different from a study done in Addis Ababa in which with regard to the frequency of postnatal care visit, 159(57.4%) of participants had visited once, 112(40.4%) women had two time, and the remaining 6 (2.2%) were having three or more. Furthermore; the findings of this study are higher than the findings of study conducted in Gondar Zuria District, in which, among mothers who utilize the postpartum care service, 67.70 % utilized once, 27.92 % twice and 4.38 % three and or more times within 6 weeks after delivery (34).

In this study, the prevalence of postpartum check up of two times is 44.9%. This finding is higher than the findings of studies conducted in Loma District, Southwest Ethiopia 36.7% (19), the national PNC utilization of twice check up 34% (31) and other locally conducted studies in Ethiopia; 11% of Abi-Adi Town in Tigray (14) and 20.2% of Jabetine district in Amhara region (13). Also, the finding is higher than studies conducted abroad of Ethiopia such as 25.1% of the western district of Nepal (33).The difference might happened due to the fact that majority of the participants were rural settings; who might have less access to health facilities with integrated maternal health services.

But the finding is lower than 66.8% of a study conducted at Gondar Zuria district Ethiopia (34) and 78.3% of Adwa town, North Ethiopia (35). The difference might be due to the difference in study setting, method used and the time difference that there could be improvement in accessing and utilizing health care service through time.

Regarding components of PPC for the mother and her newborn, this study revealed that significant number of mothers and newborns did not receive appropriate counseling and care per recommended components for the mother and newborn. About 26 (12%) mothers were not Counseled on maternal postpartum complications; 87 (40%) were not Counseled on nutrition and about 119(55%) mothers were not Counseled on personal hygiene including hand wash except to take shower at the time of discharge. On the other hand, about 18 (8.3%) of mothers were not Counseled about exclusive breastfeeding. About 75(35%) mothers were not counseled about umbilical cord care. These findings are higher than a study done in Jimma Zone (28).

In this study about 198 (91.7%) mothers received family planning services followed by child immunization 179 (82.9%) services during their postnatal care visit which is slightly higher than a study done in Shebe Sombo Woreda, Jimma Zone, in which about 252 (79.2%) mothers received family planning services followed by child immunization 243 (76.4%) services during their postnatal care visit(28).

The current study has shown that mothers who attended preparatory education were three times more likely to receive complete postnatal care service than illiterate women (AOR: 2.69, 95% CI: 1.34-7.76). This finding was in agreement with results from Benchimagi Zone, Southwest Ethiopia (18). This could be explained by the notion that education is a key factor in empowering maternal decision making towards health-care service, increasing awareness of basic health services, and being informed about health risks, with all of these eventually leading to the improved health seeking behavior.

Cesarean delivery resulted in increased odds of having complete postnatal service. This finding has also been supported by different studies from Ethiopia and India (20–22). This could be because mothers who had operative delivery are tending to have greater perceived susceptibility to a wide range of postoperative complications; therefore, frequent return to the health institution would be the strategy to minimize these perceived risks.

Having ANC follow up at least three times was another obstetrics determinant for complete postpartum care utilization. Studies in Ethiopia and Nepal have shown consistent finding (15, 19, 33). This might be justified by the fact that women who received ANC services are more likely to have been counseled on postpartum care, deliver at health institution and come for check up after delivery.

The qualitative component of this study revealed that there were significant discrepancy in understanding of the optimal number and timing of recommended postpartum checkups. Indeed, in this qualitative study, women have noted that there is an intense focus on women's health prenatally but care during the postpartum period is infrequent and incomplete. This is consistent with other reports (8).



## **7. Limitations of the study**

Despite the fact that the necessary actions were made to minimize or avoid the possible shortcomings of this study, the result of this study should be interpreted cautiously considering the following inevitable limitations. Causality cannot be inferred due to the cross-sectional nature of the study. Use of health professionals as data collectors may create bias as they might direct the respondents during the data collection. The other limitation is that results are a hospital based study in urban setup which might not be representative and applicable to general population. However, it is the first study which will try to assess determinants and prevalence of complete postpartum care at facility level in the study area and primary data were collected prospectively, recall bias was less likely to occur.

## **8. Conclusions and Recommendations**

The finding of this study revealed that the level of complete postpartum care service utilization is low. Maternal educational statuses, ANC follow up at least three visits and mode of delivery by caesarean section were found to be significantly associated with complete postpartum care service utilization.

Based on the findings of this study, the following recommendations were made. This study revealed that level of postpartum care service utilization is low and was not continuous per recommendations. Therefore; it is worthwhile for policies to focus on postpartum period. Moreover, as women's education is an important factor to promote institutional delivery, policy should also focus on encouraging women to pursue education to beyond the primary school level. Furthermore, women should also be encouraged to have been informed about postpartum care during their ANC visit. Finally, more rigorous studies are needed to identify factors with causal association with postpartum care service utilization.

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## Appendix-1 Questionnaire

### Introduction

I am a graduating student of Master of Science in Integrated Emergency Surgery (Obstetrics, Gynecology and General Surgery) at Jimma University, Institute of Health. I am here to collect a data on determinants and prevalence of complete postpartum care utilization in Mettu Town. You are selected for the study so that I kindly request you to answer the questions that I have prepared for you. Your response will be very useful to this study and it needs your patience, full cooperation and sincerity. All information will be kept confidential. You have full right to participate, not to participate in the interview or to refuse at any stage of interviewing. Your decision to participate or not to participate doesn't affect the quality of medical service you may get in this hospital. However, your participation in giving the right information is quite important for this study.

Do you agree to participate?

1. Yes \_\_\_ continue

2. No \_\_\_ Thank her and leave

Interviewer signature \_\_\_\_\_

Date \_\_\_\_\_

<b>Part I. Socio-demographic characteristics</b>		
No	Questions	Coding category/response/
1.	Age in years	_____
2.	Marital status	1. Single 2. Married 3. Divorced 4. Widowed
3.	Educational status of mother	1. Never Been in school 2. First cycle primary school (Grade 1-4) 3. Second cycle primary school (Grade 5-8) 4. High school (grade 9-10) 5. Preparatory school (11-12) 6. College or university
4.	Occupational status of mother	1. Civil servant(gov't) 2. Farmers 3. Merchant 4. House wife 5. Others (specify _____)
5.	Residence place	1. Rural 2. Urban
6.	Distance to health facility in Km	_____
7.	Educational status of Husband	1. Never Been in school 2. First cycle primary school (Grade 1-4) 3. Second cycle primary school (Grade 5-8) 4. High school (grade 9-10) 5. Preparatory school (11-12) 6. College or university
8.	Occupational status of Husband	1. Farmer 2. Employee 3. Merchant 4. Others(specify _____)

9.	Religion	<ol style="list-style-type: none"> <li>1. Orthodox</li> <li>2. Muslim</li> <li>3. Protestant</li> <li>4. Other (specify _____)</li> </ol>
10.	Ethnicity	<ol style="list-style-type: none"> <li>1. Oromo</li> <li>2. Amhara</li> <li>3. Other (specify _____)</li> </ol>
11.	Monthly income in birr	_____ ETB
12.	Decision on maternal health services/ autonomy/	<ol style="list-style-type: none"> <li>1. Self</li> <li>2. jointly</li> <li>3. Husband</li> </ol>

### Part II. Obstetrics Related Characteristics of Mother

13.	Do you have ANC visit for the last pregnancy?	<ol style="list-style-type: none"> <li>1. Yes</li> <li>2. No (skip to Q 17)</li> </ol>
14.	If yes to Q 13, What are/is the number of ANC follow up visit/s during the last pregnancy?	_____
15.	Where was the place of ANC visit?	<ol style="list-style-type: none"> <li>1. Health post</li> <li>2. Health center</li> <li>3. Hospital</li> <li>4. Private clinic</li> </ol>
16.	Who were the ANC providers? More than one is possible when applicable.	<ol style="list-style-type: none"> <li>1. Health extensions</li> <li>2. Nurse or midwife</li> <li>3. General practitioner</li> <li>4. Emergency surgical officer</li> </ol>
17.	Where was place of delivery for the last pregnancy?	<ol style="list-style-type: none"> <li>1. Home</li> <li>2. Health post</li> <li>3. Health center</li> <li>4. Hospital</li> </ol>
18.	What was mode of last delivery?	<ol style="list-style-type: none"> <li>1. Spontaneous vaginal delivery</li> <li>2. Instrumentally assisted vaginal delivery</li> <li>3. Caesarian delivery</li> </ol>
19.	Who was the delivery assistance?	<ol style="list-style-type: none"> <li>1. No assistance</li> <li>2. Nurse or midwife</li> <li>3. Other _____</li> </ol>
20.	What is your Parity?	_____

21.	Did you have complication of pregnancy and delivery in your last delivery?	1. Yes 2. No (skip to Q 23 )
22.	If yes to Q 21, what are/is the complication of pregnancy and delivery?	_____

**Part III. Awareness of mothers and barriers to PPC service utilization**

23.	Source of information about use of PPC	1. Health institution/ care provider 2. Radio/TV 3. Family/Relatives 4. Other(specify _____ )
24.	What are the benefits of postpartum Care?	1. For family planning 2. To check conditions of infants 3. To information how to feed their infant 4. Vaccination of infant and mother 5. Other(specify _____ )
25.	Are there any cultural practices and beliefs about use of PPC?	1. Yes (mention _____ ) 2. No

**Part IV. Package (Timing, place and number) of postnatal care contacts**

26.	How many PNC visits have you received after your final delivery?	_____
27.	What was the starting time of utilization of PPC?	1. Day one (24 hours), 2. Day 3 (48–72 hours), 3. Between days 7–14, 4. At six weeks after delivery
28.	Who provide you postpartum care?	1. Nurse 2. Midwife 3. Other(specify _____ )
29.	Is there a separate postnatal care provision room in this facility?	1. Yes 2. No

**Part V. Contents of Postnatal Care for The Newborn**

30.	Was general assessment and identifying signs of severe illnesses done for your newborn?	1. Yes 2. No
31.	For your neonate, are you counseled about exclusive breastfeeding?	1. Yes



		2. No
32.	Did you counseled about umbilical cord care?	1. Yes 2. No
33.	Was vaccination for your neonate provided?	1. Yes 2. No
<b>Part VI. Contents of Postnatal Care for The Mother</b>		
34.	Was general assessment and identifying signs of severe illnesses done for you?	1. Yes 2. No
35.	Did you get counseling on possible maternal postpartum complications?	1. Yes 2. No
36.	Did you get counseling on birth spacing and family planning?	1. Yes 2. No
37.	Did you get counseling on nutrition?	1. Yes 2. No
38.	Did you get counseling on hygiene?	1. Yes 2. No
39.	Did you get counseling about your emotional well being, what family and social support you have, changes in mood, emotional state and behavior that are outside of your normal pattern?	1. Yes 2. No
40.	After delivery, does iron and folic acid supplements provided to you?	1. Yes 2. No

**THANK YOU SO MUCH!!!**

## Appendix II: Client Exit Interview Checklist

Client code: \_\_\_\_\_ Date of interview: \_\_\_\_\_

Interviewer (Name): \_\_\_\_\_

Health Facility (Name ): \_\_\_\_\_

This interview was administered to the clients who gave birth /received PPC services in the study facility. The aim was to gather information on quality of overall postpartum care, satisfaction with the care provision and their perceptions about complete PPC utilization.

Time Interview Began: -----

1. What is postpartum care? \_\_\_\_\_
2. What is the importance of postpartum care? \_\_\_\_\_
3. What common complications do women encounter during this period? \_\_\_\_\_
4. Are there any cultural practices and beliefs associated with use of PPC?  
1. Yes (mention \_\_\_\_\_) 2. No
5. What are postpartum visits? \_\_\_\_\_
6. Have you ever visited this site for PPC before today? 1. Yes 2. No
7. What was the reason for your visit today? \_\_\_\_\_
8. Are HCW helpful and friendly towards you while giving you the care? 1. Yes 2. No
9. How long do you wait for these services this time? \_\_\_\_\_
10. Are you required to pay for the services given above? 1. Yes 2. No
11. Are there any changes you would propose that will benefit or improve PPC? \_\_\_\_\_

**Time Interview Ended:** -----

### **Appendix III: Health Care Providers Interview Checklist**

This interview was administered to the health providers of PPC services in the study facility. The aim was to gather information about the quality of PNC, provider attitude and skill in providing all the components of PNC and their practices and perceptions about complete PPC utilization.

Date of Interview: \_\_\_\_\_, Provider's code \_\_\_\_\_

Provider's Designation/Title \_\_\_\_\_

Interviewer's Name \_\_\_\_\_

#### **A: Facility Location and Set up**

1. When was Timing of discharge from a health facility after birth? \_\_\_\_\_
2. Is there a separate postnatal care provision room in this facility? 1. Yes 2. No
3. Do you think there is a need for improving the set-up of the facility for PPC? 1. Yes 2. No  
please explain your answer \_\_\_\_\_
4. Do home PNC visits provided by health workers? 1. Yes 2. No

#### **B: Provider's practices and perceptions about complete PPC utilization.**

1. What is postpartum care? \_\_\_\_\_
2. What PPC services does this facility offer? \_\_\_\_\_
3. What are the optimal number and timing of postnatal contacts to improve neonatal survival and maternal health?
4. Who are/is the provider/s of PPC services in this facility by profession? \_\_\_\_\_
5. Are PPC providers in this facility adequate in number? 1. Yes 2. No
6. How do you perceive/think of women who have had PPC in terms of neonatal and maternal health?
7. Do Women who attended PNC deserve equal attention like any other patients? 1. Yes 2. No

## **Appendix IV: Assurance of Principal Investigator**

The undersigned agrees to accept responsibility for the scientific ethical and technical conduct of the research project and provision of required progress reports as per terms and conditions of the college of Public Health & Medical Sciences in effect at the time of grant is forwarded as the result of this application.

Name of the Student: Aragaw Molla (Bsc in Public Health)

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

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### **APPROVAL OF THE ADVISOR**

Name of the Advisor:

1. Dr Demisew Amenu (Consultant Obstetrician/Gynecologist, Associate Professor)

Date: \_\_\_\_\_ Signature: \_\_\_\_\_