



WOLDIA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

DEPARTMENT OF PUBLIC HEALTH

**MATERNAL CONTINUUM OF CARE AND ITS DETERMINANTS
AMONG MOTHER WHO GAVE BIRTH IN HABRU DISTRICT, NORTH
WOLLO NORTHEAST ETHIOPIA, 2024: A MIXED METHOD STUDY**

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Abbreviation and acronyms

ANC	Antenatal care
CoC	Continuum of Care
EDHS	Ethiopian Demographic Health Survey
EmONC	Emergency Obstetric and Newborn Care

MNCH	Maternal, newborn and child health
MNH	Maternal and Newborn Health
MMR	Maternal Mortality Ratio
PNC	Postnatal care
SSA	Sub-Saharan Africa

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Abstract

Introduction: The continuum of care during pregnancy, childbirth, and the postnatal period is essential for improving maternal and neonatal health. However, Ethiopia has one of the lowest completion rates for the maternal continuum of care compared to other sub-Saharan African countries. This shows the need for targeted interventions to improve maternal and newborn health outcomes.

Objective: To assess maternal continuum of care and its determinants among mothers who gave birth in Habru district, North Wollo, northeast Ethiopia, in 2024.

Methodology: A community-based cross-sectional study was conducted with 429 mothers who gave birth in the last six months, selected using multistage sampling and simple random sampling. Data were analyzed using binary logistic regression, with statistical significance declared at $p < 0.05$. For the qualitative component, a phenomenological study design was employed, using key informant interviews and focus group discussions (FGDs). Thematic analysis was applied to identify determinants of maternal continuum of care.

Results: The study revealed that only 92 (45.8%) mothers completed the maternity continuum of care. Factors associated with higher CoC completion included being older than 24 years (AOR = 1.6, 95% CI: 1.1–2.4), having secondary or higher education (AOR = 2.5, 95% CI: 1.6–4.0), planned pregnancies (AOR = 2.0, 95% CI: 1.4–3.0), and exposure to mass media (AOR = 1.7, 95% CI: 1.1–2.7) were factors associated with maternal continuum of care. Qualitative findings highlighted transportation challenges, long distances to health facilities, and indirect costs as major barriers to completing the maternal continuum of care.

Conclusion and Recommendations: The study identified a low rate of maternal continuum of care completion in the district. To address this, targeted interventions are recommended, including improving access to maternal education, promoting family planning, enhancing health communication through mass media, and addressing financial and transportation barriers. Strengthening health service delivery and fostering respectful, culturally sensitive care are also crucial to improving maternal and newborn health outcomes.

key words: Maternal continuum of care, determinants, antenatal care, postnatal care, Ethiopia.

1. Introduction

1.1. Background

The concept of the continuum of maternity care refers to the seamless provision of healthcare services that a woman receives throughout her pregnancy, childbirth, and postnatal period [1]. It is a critical strategy for reducing maternal mortality and morbidity [2]. This framework encompasses two dimensions time, emphasizing the need for care throughout the stages of pre-pregnancy, antenatal, intra- and postnatal periods for women, as well as from the newborn period through adolescence for children; and place, emphasizing the importance of integrated service delivery across communities, primary healthcare facilities, and referral centers [3]. The primary goal of the continuum of care is to offer women reproductive health services and ensure that newborns have the opportunity for a healthy childhood [4]. Additionally, the framework emphasizes the importance of integrated service delivery to enhance efficiency, control costs, and minimize maternal and neonatal mortality [5].

Even though, there were great improvements over the last two decades, insufficient or non-existent care during pregnancy and delivery was fundamentally accountable for an estimated 287,000 maternal death in 2023 [6]. Most of these deaths occurred in low and lower-middle-income countries, where access to skilled health professionals and quality care is often limited. Specifically, Sub-Saharan Africa and Southern Asia accounted for around 87% of these deaths. Addressing the gaps in maternal healthcare services in these regions is essential to reducing mortality rates further. Implementing a comprehensive continuum of care (CoC) approach not only has the potential to save maternal lives but also holds the promise of saving up to 160,000 newborn lives through improved coverage of antenatal care (ANC) and a focused package of interventions. Additionally, an estimated 390,000 newborn lives can be saved by ensuring high coverage of skilled childbirth care, while postnatal care has the potential to save an additional 310,000 lives [4].

Child and maternal survival have been one of the most important advances and worldwide health priorities in recent decades, as evidenced by their adoption as the fourth and fifth Millennium Development Goals, respectively [7] and, later, the third Sustainable Development Goals [8]. However, improvements in coverage of life-saving interventions for maternal, newborn, and child health (MNCH) have not consistently translated into reductions in mortality from preventable conditions. In 2019, 295,000 maternal deaths [9, 10], 2.5 million neonatal deaths [11] and 2 million stillbirths were reported [12]. In 2019, Ethiopia maternal mortality rate (MMR) per 100,000 live births was 205 [13]. The majority of these deaths occur during labor, childbirth, and the early postnatal period [14].

1.2.Statement of problem

Reducing the global burden of preventable maternal, newborn and child mortality and morbidity is a key focus for public health. Every day in 2020, almost 800 women died from preventable causes related to pregnancy and childbirth worldwide. The majority of these deaths (95%) occurred in low- and middle-income countries [6].

Sub-Saharan Africa (SSA) bears a significant burden of maternal mortality, accounting for 62% of global maternal deaths. Additionally, in this region, approximately 1 in 30 mothers experience complications related to pregnancy [15]. Furthermore, the risk of neonatal morbidity and mortality is particularly high in SSA, with a rate of 92 deaths per 1000 live births, which is approximately 15 times greater than that observed in developed countries [16]. It is important to note that the majority of these maternal and neonatal deaths are preventable, underscoring the urgent need for targeted interventions and improved healthcare systems in the region [6].

The implementation of the continuum of care (CoC) for maternal and child health services has been recognized as a crucial strategy in reducing maternal and newborn deaths and achieving the global target of reducing maternal mortality to 70 deaths per 100,000 live births [17]. Evidence suggests that effective maternal healthcare provided throughout pregnancy, delivery, and postpartum periods could potentially prevent around 80% of maternal deaths and two-thirds of neonatal deaths[18]. Furthermore, achieving more than 99% coverage of the complete continuum of maternal healthcare services utilization has the potential to prevent 41% to 72% of neonatal deaths worldwide. These findings highlight the importance of comprehensive and continuous care for improving maternal and child health outcomes [19].

A well-functioning continuum of care can improve the satisfaction of client and provider and maximize efficiency [20]. Although much of the literature on care seeking across the continuum of care is especially important for maternal health, since timely linkages to referral care are necessary to reduce maternal morbidity and mortality [3, 4]. The availability of trained birth attendant services is the best strategy for reducing intrapartum and postpartum-related death [21, 22]. Professional birth attendants are estimated to avert between 13 to 33 % of maternal deaths and 25 % of newborn deaths [14, 23].

The evidence reveals that the completion rate of a continuum of care in maternal health services in South Asia 25%; Sub-Saharan Africa 14% [24]; Cambodia 60% [25]; Ratanakiri Cambodia 5% [26]; Northern Ghana 8% [27]; Ghana 10.3% [28]; Pakistan 27% [29]; Tanzania 10% [30]. According to the Ethiopian Demographic and Health Survey (EDHS) 2019 report, 74% of women in Ethiopia received at least one antenatal care (ANC) visit, while 43% had the recommended four or more ANC visits. Additionally, 50% of mothers gave birth attended by a skilled birth attendant, and 34% of women received postnatal care (PNC) within the first two days after delivery[31]. Various studies conducted in rural areas of Ethiopia have shown a range in the utilization of the complete continuum of maternal healthcare services, varying from 9.7% [32] to 47% [19]. These findings highlight the varying levels of access and utilization of maternal healthcare services in Ethiopia's rural communities.

In Ethiopia, the Federal Ministry of Health has implemented several impactful interventions in recent years to enhance Maternal and Newborn Health (MNH) services. These efforts have resulted in a significant reduction in the Maternal Mortality Ratio (MMR). For instance, data from the Ethiopian Demographic and Health Surveys (EDHS) indicate that the MMR decreased from 420 per 100,000 live births in 2016 to 353 per 100,000 live births in 2019, reflecting a reduction of approximately 16% over this period. However, despite these improvements, successive reports show that progress in various aspects of MNH services remains slow, highlighting the need for continued and targeted interventions [33]. Compared to other Sub-Saharan African countries, Ethiopia has one of the lowest completion rates for the continuum of maternal care services, including antenatal care (ANC), skilled birth attendance, and postnatal care (PNC). For instance, while other countries in the region have varying completion rates, Ethiopia's rates are notably lower. In recent studies, it has been reported that only about 10% to 47% of women in rural Ethiopia complete the full continuum of care [19]. This contrasts sharply with higher completion rates observed in neighboring sub-Saharan African countries, such as Kenya (55%) and Ghana (53%) [34, 35]. Among these countries, Ethiopia has the lowest completion rate, highlighting the urgent need for targeted interventions and improved healthcare strategies to enhance maternal and newborn health outcomes [36].

Unlike other regions in Ethiopia, including north wollo, there is limited data on the proportion of mothers who complete the continuum of maternity care and the factors that contribute to its completion in our study area. This gap in data hampers our understanding of maternity care dynamics and the effectiveness of current health interventions.

1.3. Justification of the study

The Continuum of Maternal Care services is crucial not only for improving medical outcomes during childbirth but also for ensuring consistent service utilization across the maternal care spectrum. Despite its importance, the development of programs aimed at enhancing the Continuum of Maternal Care in low- and middle-income countries (LMICs) necessitates a comprehensive understanding of its key determinants [37]. Identifying these determinants is essential for improving maternal and infant survival rates and guiding policymakers on where to focus improvements to strengthen the continuum of care services. While previous research has primarily concentrated on Emergency Obstetric and Newborn Care (EmONC) or specific periods of care (such as antenatal, intrapartum, or immediate postpartum), there has been limited exploration of service utilization throughout the entire continuum of care. This study seeks to address this gap by examining the factors influencing the utilization of routine care across the full maternal care continuum, which could lead to more effective strategies for enhancing maternal and infant health outcomes.

1.4. Significance of the study

This study is essential for addressing critical gaps in Ethiopia's maternity continuum of care, where antenatal care (ANC), skilled birth attendance, and postnatal care (PNC) rates are significantly lower compared to other Sub-Saharan African countries. Despite global progress in maternal health, Ethiopia continues to experience high maternal mortality rates and inconsistent

care across regions. The 2019 Ethiopian Demographic and Health Survey (EDHS) reveals that while 74% of women receive at least one ANC visit, only 50% have skilled birth attendance, and just 34% receive timely postnatal care. This research will investigate the prevalence and determinants of complete maternity care, with a particular focus on under-researched regions such as South Wollo. By identifying the factors influencing the utilization of maternity services, the study aims to inform the design of targeted interventions to improve both the utilization and quality of care. The findings will offer valuable insights for policymakers and health program managers, contributing to the development of effective health policies and programs. Additionally, the study will provide baseline data for future research and serve as a reference for other researchers in the field. Ultimately, this research seeks to advance maternal and child health by promoting more equitable and effective healthcare practices, thereby reducing preventable maternal and neonatal deaths and supporting Ethiopia's broader health objectives.

2. Literature review

2.1. Magnitude of complete maternal continuum of care

Based on research conducted in Xaybouathong district in Lao PDR, it was found that only 6.8% of women continued to receive the full range of maternal healthcare services [38]. Similarly, in three regions of Ghana, the percentage of women who completed the continuum of care, which includes receiving ANC4+ (antenatal care at least four times), skilled birth attendance (SBA), and postnatal care (PNC), was only 8.0% [39]. Another study conducted in Ghana revealed that throughout the stages of pregnancy, delivery, and post-delivery, only 7.9% of women and children achieved the continuum of care [28]. Similarly, in four districts in Tanzania, the percentage of women who achieved the continuum of care was 10% [30].

Based on a survey conducted in Nepal only 41% of women received antenatal care (ANC), skilled birth attendance (SBA), and postnatal care (PNC) during their most recent birth [40]. Similarly, a study conducted in Sohag governorate, Egypt, revealed that 50.4% of women achieved the continuum of care, which included having at least four ANC visits, being attended by a skilled birth attendant, and receiving PNC [41]. Additionally, a study conducted in Cambodia reported that 60% of women had access to the full range of services for maternal and newborn health care. Received Health Information about Maternity Care This variable indicates whether women have received information about maternity care services, including antenatal care, skilled birth attendance, and postnatal care. It can be measured as a binary variable [5].

According to a study conducted in India, the majority of women and their newborns did not receive continuous maternal, newborn, and child health (MNCH) services. The study revealed that only 38.8% of women in India completed the continuum of care for maternal and child health across all four levels. This indicates that the overall level of continuum of care in the country is 38.8% [42]. A trend analysis carried out in Pakistan between 2006 and 2012 showed an increase in the completion rate of continuum of care among women, rising from 15% to 27% over that time period [43].

A systematic review and meta-analysis conducted in Ethiopia found that the overall prevalence of complete utilization of maternal healthcare services throughout the continuum was 25.51%. The range of prevalence varied from 9.7% to 47%. Age at First Pregnancy This variable refers to the age at which a woman experiences her first pregnancy. It can be measured in years [44] .

In a community-based study conducted in Legambo district, South Wollo, northeast Ethiopia, the prevalence of maternity continuum of care among mothers was reported to be 11.2% (95% CI: 9.0-13.8) [45].

On the other in a community-based cross-sectional study conducted in southwest Ethiopia, it was observed that 32.2% (95% CI: 28.4-36.2) of women dropped out of the maternity continuum of care [46]. Another study also conducted in northwest Ethiopia reported that the overall completion rate of the continuum of maternal healthcare services was 21.60% (95% CI: 18.20, 24.90) [47]. Studies conducted in various regions of Ethiopia have examined the completion rates of the continuum of maternal health care services. In Arbaminch Zuria woreda, Southern Ethiopia, the completion rate was found to be 9.7% [48]. The Ethiopian Demographic and Health Survey (EDHS) conducted in 2016 reported a completion rate of 9.1% [49]. In the West Gojjam Zone, the completion rate was estimated to be 12.1% [50]. However, in a cross-sectional study conducted in Debre Markos, a higher prevalence of 67.8% for the maternal continuum of care was observed [51]. According to the study in Debre birhan, the proportion of women who completed the continuum of maternity care was 37.2% [52].

2.2. Factor associated maternal continuum of care

2.2.1. Socio-demographic factors

A study conducted in Gondar Zuria district found that mothers with basic literacy skills, specifically the ability to read and write, were 2.7 times more likely to complete the continuum of care for maternal health services compared to those who lacked these skills [47]. This finding aligns with the results of studies conducted in Ghana, Egypt, Nepal, South Asia, and Sub-Saharan countries, which also demonstrated a positive association between women's education and the completion of the continuum of maternal healthcare services [28, 41, 53, 54]. A systematic review and meta-analysis conducted in Ethiopia found that having a secondary education or higher was strongly linked to the utilization of maternal healthcare services throughout the continuum. Mothers with a secondary education or above were 2.97 times more likely to have access to the continuum of maternal healthcare services compared to those with lower educational attainment [55].

The cross-sectional study conducted in Ethiopia demonstrated that living in rural areas was associated with decreased completion rates of the continuum of maternal healthcare services [56]. Other study in Ghana also support this finding [57]. Other community-based cross-sectional study Siyadebirena Wayu district, Ethiopia indicated that Urban dwellers had a better continuum of maternal health service utilization compared with rural women [58]. Likewise, a national study conducted in Gambia highlighted that women residing in rural areas were less likely to

complete the continuum of care [59]. Different studies showed that women with higher age are more likely to complete maternal care than young mothers [5, 30, 43].

Furthermore, a study conducted in Ghana demonstrated mothers who are single are less likely to complete maternal continuum of care compared to those mothers who are married [39]. The findings of this study illustrated that a husband or partner with a primary education and higher positively affected completion of MNCH care according to the study conducted in Gambia [59]. Women whose occupation is farming were 82 percent less likely to complete the continuum of care compared to housewives according to study done in Ethiopia [60].

2.2.2. Women and health facility related factors

A strong association was detected between type of transport used to health facility and CoC completion. The results revealed that women who had access to good transport (private car/ambulance) to the delivery place were over twice more likely to complete continuum of care (CoC) compared to those who travel on foot [39]. Mothers who did not perceive the distance to the nearest health facility as a problem had a higher COC compared to those who perceived the distance to the nearest health facility as a problem [56]. A study in northwest Ethiopia identified that mothers with less than one hour of travel time to the health facility were more likely to complete the continuum of maternal health services [47].

In a study conducted in northeast Ethiopia, it was found that mothers who actively engaged with media, such as television, radio, or newspapers, were 2.3 times more likely to receive the maternity continuum of care compared to mothers who did not engage with media [45]. This finding is consistent with a study conducted in Pakistan in 2017 [43] and another study conducted in Debre Markos town, Ethiopia in 2019 [51], which both reported that mothers who followed media were 1.45 and 2.62 times more likely to complete the maternity continuum of care, respectively.

A study conducted in Ethiopia found that mothers who had autonomy in making healthcare decisions were 3.7 times more likely to complete the maternity continuum of care compared to mothers who did not have decision-making autonomy [45]. This finding aligns with a study conducted in Pakistan, which reported that mothers who had autonomy in healthcare decision-making were 1.26 times more likely to complete the continuum of care compared to their counterparts [43].

2.2.3. Obstetric and health related factors

A study conducted in Ethiopia revealed that mothers who utilized pre-pregnancy contraceptives were 2.7 times more likely to complete maternity care compared to mothers who did not use these contraceptives [45]. This finding is consistent with another study conducted in Arbaminch Zuria Woreda, which indicated that mothers who used pre-pregnancy contraceptives were 3.9 times more likely to access the full range of maternity care services compared to their counterparts [32].

According to study done in south Wollo, it was observed that mothers who intentionally planned their pregnancies were 2.4 times more likely to complete maternity care compared to those who had unplanned pregnancies [45]. This finding is consistent with similar studies conducted in Ghana[57], Arba Minch Zuria Woreda in Ethiopia in 2019 [32], and Debre Markos town in Ethiopia in 2019 [51]. In these studies, it was found that mothers who planned their pregnancies were 1.75, 3.4, and 3.4 times more likely, respectively, to complete the continuum of maternity care compared to their counterparts.

Factors such as receiving the first antenatal care within the first trimester (B =0.109)[38] and well prepared on birth and complication readiness (AOR: 1.59) [52] were found to positively increase the chance of completing maternity care in our study area.

Conceptual framework

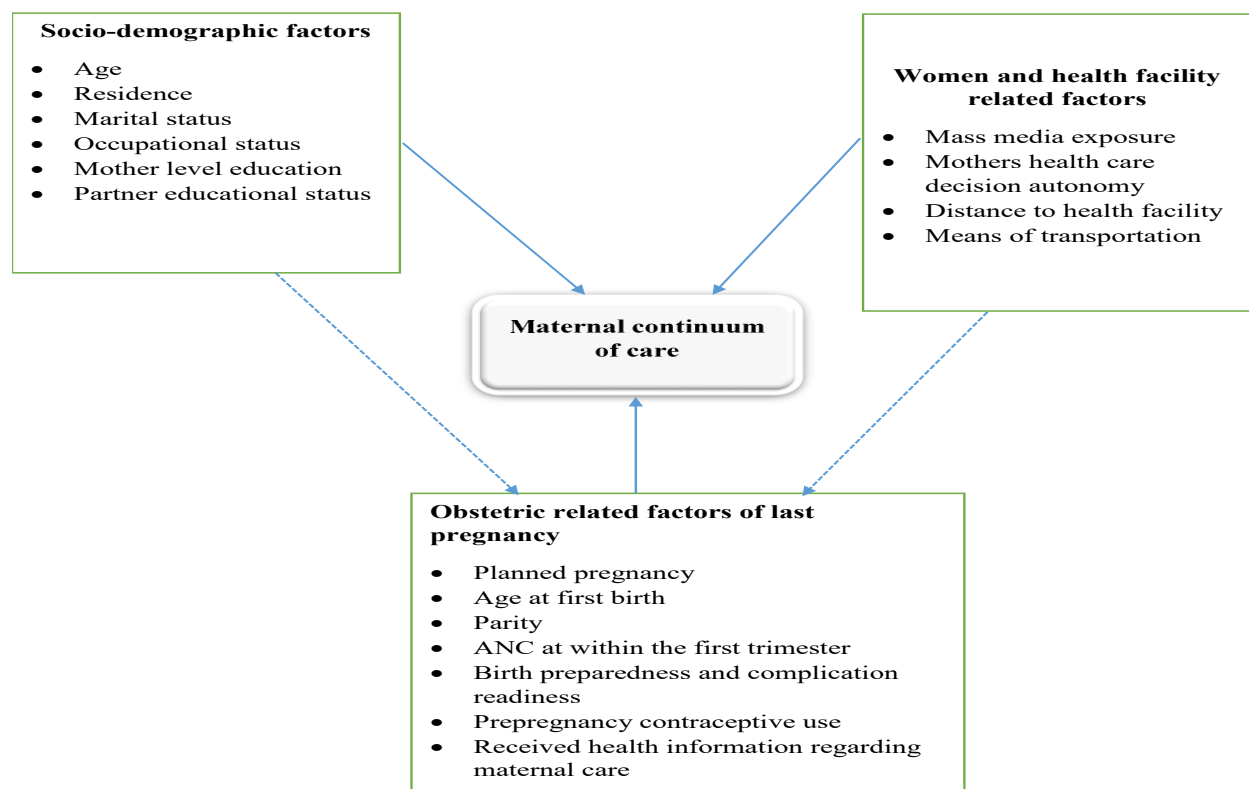


Figure 1: Conceptual framework for the study on maternal continuum of care and its determinants among mothers who gave birth in Habru district, north wollo northeast Ethiopia, 2024 [38, 39, 43, 52, 56-59].

3. Objectives

3.1. General objective

To assess maternal continuum of care and its determinants among mothers who gave birth in Habru district, North Wollo Northeast Ethiopia, 2024

3.2. Specific objectives

- To determine magnitude of maternal continuum of care among mothers who gave birth in Habru district, North Wollo Northeast Ethiopia, 2024
- To identify factors associated with maternal continuum of care among mothers who gave birth in Habru district, North Wollo Northeast Ethiopia, 2024

4. Methodology

4.1. Study area

"The study was conducted in Habru district, located in North Wollo, Northeast Ethiopia, which offers a diverse landscape. The district comprises 39 kebeles, 3 urban and 36 rural providing a wide range of socio-economic and geographical characteristics to explore."

In terms of health facilities, the district likely comprises a range of healthcare infrastructure, including health posts, health centers. Understanding the distribution, accessibility, and quality of these facilities were crucial for assessing maternal and child health services and outcomes. Considering the population statistics provided, we can estimate the number of pregnant and delivered women in the study year based on typical fertility rates and birth rates in Ethiopia. This estimation would involve considering factors such as the age distribution of women of childbearing age, fertility rates, and healthcare utilization patterns for antenatal and delivery care. For instance, if we assume a conservative fertility rate of around 4 births per woman during their reproductive years and take into account the proportion of women in the childbearing age group (15-49), we can estimate the number of pregnancies in a given year. Then, considering the proportion of deliveries that typically occur in health facilities versus at home, we can estimate the number of deliveries that health facilities in the district might be expected to handle. Precise figures would require access to more detailed data on fertility rates, birth rates, and healthcare utilization specific to the Habru district. This could be obtained through local health authorities or demographic health surveys conducted in Ethiopia.

4.2. Study design and Period

Community-based cross-sectional and phenomenological study design were conducted from October 30 to November 30, 2024

4.3. Population

4.3.1. Source populations

All women who gave birth and found in between first week to 6 months of postpartum period in Habru district.

4.3.2. Study populations

Selected women who gave birth and found in between first week to 6 months of postpartum period in Habru district. To ensure representativeness and minimize bias, we employed a random sampling technique to select our study population from the Habru district. From the district's 39 kebeles, a subset was randomly selected to participate in the study. The sample size for each kebele was allocated proportionally, taking into account their population size and the distribution of eligible mothers.



Figure 2: sampling technique of selected kebeles

4.4. Inclusion/exclusion criteria

4.4.1. Inclusion criteria

The inclusion criteria for the study were mothers who had given birth within the postpartum period (from the first week to six months after delivery), were residents of the study area during data collection, and had provided informed consent to participate.

4.4.2. Exclusion criteria

The study excluded mothers who were critically ill and unable to participate in or respond to the interview process.

4.5. Sampling technique

A multistage sampling approach was employed to ensure comprehensive representation of the maternal population in Habru district. Initially, eight kebeles approximately 30% of the total were randomly selected using the lottery method to ensure impartiality.

Proportional allocation was then applied to determine the sample size for each selected kebele. This was based on the number of mothers who had given birth in the year preceding the data collection period, as recorded in the Community-Based Health Information System (CBHIS) register. Larger kebeles, with more births, contributed proportionally more to the sample size.

Finally, systematic random sampling was used to select individual participants. A list of eligible mothers, including their names and house numbers, was compiled from the CBHIS register.

Participants were then selected at regular intervals, ensuring a structured and unbiased method of representation. This approach minimized selection bias and guaranteed adequate representation of mothers from the selected kebeles within the defined timeframe.

Interviews with mothers were conducted at their homes, utilizing the information gathered from the CBHIS register to locate and contact participants efficiently. For Focus Group Discussions (FGDs) (Mothers who gave birth recently (past 6 months), Health extension workers (HEWs), Midwives and nurses from local health facilities, Husbands or fathers (key decision-makers), Community leaders) and Key Informant Interviews (KIIs), participants were selected purposively.

4.6. Sample size determination

The sample size for the first objective is determined using the single population proportion formula and the assumptions used were: a 95% confidence interval (CI); 5% margin of error; and a population proportion of complete continuum of care 21.6%, which is taken from a study conducted in Northwest Ethiopia [47].

$$n = \frac{Z^2 pq}{d^2} = \frac{1.96^2 (0.216 * 0.784)}{0.05^2}$$

Where, =initial sample size

$$\begin{aligned} n &= (1.96)^2 (0.216) (1-0.216) / (0.05)^2 \\ &= 3.8416 (0.216) (.784) / .0025 \\ &= 0.65 / .0025 = 260 \end{aligned}$$

On the other hand, to assess factors associated with maternal continuum of care: First, the sample size was calculated by using different determinant factors maternal continuum of care separately from recent previous study, and the largest value will be taken to increase the power of the study. The sample sizes on this assumption were calculated by using Epi-Info version 7.2.

Table 4.1.1: Sample size calculation for the second objective for the study maternal continuum of care and its determinants among mothers who gave birth in Habru district, North Wollo Northeast Ethiopia, 2024

Associated variables	Percent of controls exposed	Odds ratio	Power	Confidence interval	Ratio of controls to cases	Sample size
Exposure to Media	50%	5.85	80%	95%	1:1	64
Place of residence						76

	21.5%	1.9	80%	95%	1:1	
Pre pregnancy family planning use	17.6%	3.97	80%	95%	1:1	38 [61]

Considering both the first and second objectives, the larger sample size of 260 from the first objective was selected. After accounting for a design effect of 1.5 and adding a 10% non-response rate, the final sample size for this study was determined to be 429.

4.6.1. Sample for the Qualitative Part of the Study

In the qualitative part of this mixed-method study, purposive sampling was employed to select participants who could provide in-depth insights into the maternal continuum of care. The participants were mothers who gave birth in Habru District, North Wollo, Northeast Ethiopia, in 2024. Key informants such as healthcare providers, health extension workers, and community leaders were also included to gain a broader perspective on the determinants influencing maternal healthcare services.

The sample size was determined based on the principle of data saturation, where data collection continued until no new themes or significant information emerged. This approach ensured that the findings were comprehensive, and representative of the experiences and challenges faced by mothers and stakeholders in the study area. The diversity of participants was considered to capture variations in experiences related to geographic location, socioeconomic status, and access to healthcare services.

By including a range of participants, the qualitative component provided a rich understanding of the factors affecting the maternal continuum of care in the district. This information complements the quantitative findings and enhances the overall study's depth and relevance.

4.7. Study variables

4.7.1. Dependent variable

Continuum of maternal healthcare (yes/no)

4.7.2. Independent variables

- Socio-demographic variables of women (age, educational status, husbands' education status, occupational status of mothers, residence, marital status),
- Women and health facility related factors (mass media exposure, maternity care decision autonomy, distance to health facility and means of transportation), and
- Obstetric related factors (planned pregnancy, age at first birth, parity, times of ANC initiation, birth preparedness and complication readiness, pre-pregnancy contraceptive utilization, health information regarding maternity care).

4.8. Operational Definition

Maternity continuum of care: Women have four or more ANC visits by skilled provider plus have had childbirth aided by skilled birth attendant (SBA) and who attend postnatal care (PNC) within 6 weeks after childbirth (at least once after discharge from health facilities or within the first week after childbirth at their home)[[62](#)].

Skilled provider: A health care professional such as doctor, nurse, midwife, health officer or health extension worker working in the health facilities and who has got the necessary pre-service and/or in-service training for the provision of MNH services [[63](#)].

A woman was considered as ‘well prepared’ for birth and its complications when she reported that she has implemented five or more components of birth preparedness and complication readiness (BPCR); otherwise, she was considered as ‘not well prepared’. The components of BPCR considered in this study were identified place for birth, identified skilled birth attendants, saved money, identified transportation for emergency conditions, identified a companion during labor and birth, identified blood donors, and identified care giver to children at home when the mother was away [[64](#), [65](#)].

Autonomy in household decision making: A woman was said to have autonomous decision making power in seeking MNH services if she alone or with her husband (jointly) decided on seeking MNH services; otherwise (if her husband alone or a third person decided on seeking MNH services) she was considered as not having autonomous decision making power [[39](#)].

Media Exposure: if she Read a newspaper/ listen to radio/watch television at least once a week are considered to be regularly exposed to that form of media [[45](#)].

Knowledge on pregnancy danger signs: A woman was classified as knowledgeable if she spontaneously mentioned at least two of the four key danger signs of pregnancy (vaginal bleeding, severe headache, blurring of vision and swelling of feet or face); if not she was classified as not knowledgeable [[30](#)]

Knowledge on postpartum danger signs: In this study, signs postpartum were assessed using 5 items, with a correct answer given a score of "1", and an incorrect answer given a score of "0". A woman was categorized as knowledgeable to obstetrics danger signs of postpartum if she could answer correctly a minimum of three of the questions 9, she asked.

4.9. Data collection tools and procedures

In the quantitative phase of this study, data was collected through pre-tested structured face-to-face interviews using a carefully designed questionnaire. This tool captures information on socio-demographic variables, health facility-related factors, and obstetric-related factors pertinent to women’s health. The questionnaire will be prepared in Amharic to ensure clarity and comprehension among participants.

The questionnaire was developed based on established guidelines and existing literature on maternal and obstetric health. To ensure the validity of the tool, it undergoes pre-testing with a

small sample of the target population and be reviewed by a panel of specialists in public health and obstetrics. Data collection was carried out by five diploma midwives under the supervision of one BSc public health officer. The data collectors, supported by the women developmental army, was conduct home visits for data collection. In cases where participants are absent, follow-up visits were made, and absent participants were replaced with the next available neighbor to ensure a representative sample is maintained.

For the qualitative phase of the study, we employ semi-structured questionnaires to conduct Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs). Probing questions were utilized where necessary to delve deeper into specific topics and ensure a comprehensive understanding.

Each participant was undergoing an individual interview at their place of work, with interview durations ranging from 20 to 35 minutes. Trained data collectors conducted these interviews, ensuring consistency and adherence to the interview protocol.

After completing the key informant interviews, FGDs will be organized for Skilled Birth Attendants (SBAs) working at maternity wards. These discussions lasted approximately 60 to 90 minutes and will be facilitated by one interviewer with a note taker present.

Skilled birth attendants with clinical work experience of less than six months were excluded from participating in the qualitative study to ensure that participants possess sufficient experience and insights relevant to the research objectives.

To ensure accuracy and reliability, all interviews and discussions were audio recorded and transcribed verbatim in Amharic, the local language. Transcripts were undergoing consistency checks by other investigators and were verified by listening to the audio recordings again. Subsequently, transcripts will be translated into English before analysis.

Regarding the semi-structured interview guidelines, detailed questionnaires were developed in line with the research objectives and themes of interest. These guidelines included open-ended questions designed to explore participants' perspectives, experiences, and insights related to maternal health care in the study area.

for this study key Informant Interviews (KIIs) were chosen over In-Depth Interviews (IDIs) because KIIs allowed for the collection of detailed information from key individuals with a broader understanding of the maternal continuum of care. Informants such as healthcare providers and community leaders provided valuable insights into the policies, programs, and challenges affecting maternal care, which would have been difficult to capture through individual interviews with mothers alone. Additionally, KIIs were more resource-efficient, requiring fewer participants to provide a comprehensive view of the factors influencing maternal care. This approach also complemented the quantitative data, offering a more comprehensive understanding of maternal health services in the study area.

4.10. Data quality assurance

To ensure data quality, the questionnaire was initially prepared in English and then translated into the local language (Amharic). A 5% pretest was conducted in Woldia Woreda to assess the tool's reliability, feasibility, simplicity, flow, and consistency. Data collectors and supervisors received one-day training on data collection techniques. During the data collection process, site supervision was conducted by the principal investigator and supervisors, and the principal investigator reviewed and checked the collected data for completeness prior to analysis.

For the qualitative component, multiple quality assurance measures were implemented. A standardized interview guide was used, and data saturation was achieved by conducting interviews until no new themes emerged. Triangulation was applied by gathering insights from various informants. All interviews were audio-recorded, transcribed verbatim, and cross-checked for accuracy. Member checking was performed by sharing summaries with participants for validation. Reflexivity was maintained to minimize bias, and peer review was conducted to ensure the reliability and credibility of the findings.

4.11. Data processing and analysis

Quantitative analysis

The collected data were checked, coded, and entered into EpiData version 4.0.6, then exported to SPSS version 25 for analysis. Descriptive statistics, including frequency, mean, and standard deviation, were used to summarize socio-demographic, and obstetric, characteristics.

A binary logistic regression model was employed to identify associations between independent variables and the outcome variable. Variables with a p-value < 0.25 in the bivariable analysis were included in a multivariable binary logistic regression model to control for potential confounders. Variables with a p-value < 0.05 in the multivariable analysis were considered statistically significant.

To ensure model validity, multicollinearity was assessed using the variance inflation factor (VIF), tolerance tests, and standard error. VIF values ranged from 1.15 to 2.45, well below the

commonly accepted cutoff of 10, indicating no significant multicollinearity among predictors. Additionally, the Hosmer-Lemeshow goodness-of-fit test yielded a chi-square value of 7.82 and a p-value of 0.45, confirming no significant difference between observed and predicted outcomes, thereby validating the model's fit.

For quantitative variables, odds ratios (OR) were calculated to measure the strength and direction of associations. Standard error values were within acceptable limits, indicating reliable estimates.

Qualitative analysis

The audio recordings were reviewed carefully, line by line, to create a set of codes. These codes were grouped into two main categories: those connected to the quantitative checklist and those covering new ideas that came up. Open-ended comments were coded together, and any disagreements were discussed until an agreement was reached. The data analysis had three main steps: first, reading the transcripts multiple times to fully understand the data; second, organizing and coding the information based on the quantitative results using Open Code software; and third, summarizing the data for each code to make it shorter without losing its meaning. Finally, themes were analyzed, and the results were compared and refined to make sure the findings were clear and reliable.

4.12. Ethical considerations

Ethical approval was obtained from Woldia University's review board, along with cooperation letters from Habru District and the selected kebeles. Participants were informed of their rights, including the freedom to withdraw at any time, and data confidentiality was strictly maintained throughout the study.

Participants were provided with detailed information about the study's purpose, objectives, procedures, and potential benefits and risks. Written or verbal informed consent was obtained before their participation, ensuring that involvement was voluntary and based on a thorough understanding of the study.

In addition to maintaining confidentiality, care was taken to minimize any psychological or social risks to participants. All interactions with participants were conducted with respect and sensitivity to their cultural and personal contexts.

The findings of the study were shared with the community through workshops and discussions with local stakeholders to ensure that the research translated into meaningful actions. The study aimed to contribute to improving maternal and child health in the community while enhancing the body of evidence to inform policies and practices at broader levels.

5. Results

5.1. socio-demographic characteristics of study participants

A total of 429 study participants were approached for the study, with a response rate of 97.9%, resulting in data collected from 420 participants. The majority of mothers (38.1%) were aged 25–34 years, while 31.0% were aged 18–24 years. Most participants (61.9%) resided in rural areas. Regarding educational status, 33.3% of mothers could not read and write, while 26.2% had primary education, and 7.1% had attended college or above. Similarly, 23.8% of fathers could not read and write, and 11.9% had attained college-level education or higher. Most respondents (83.3%) were married, and the primary occupations were farming (28.6%) and private-sector employment (19.0%). Fathers were reported as the heads of households in 66.7% of cases. Monthly household income varied, with 42.9% earning 1,000–2,000 Ethiopian Birr, 33.3% earning less than 1,000 ETB, and 23.8% earning more than 2,000 ETB. Transportation to health facilities was predominantly by walking (59.5%), followed by public transport (35.7%) **Table 2:**

Table 2 Socio demographic characteristics of the mothers who gave birth in the last 6 months at Habru district, North Wollo, northeast Ethiopia (n = 420)

Variable	Categories	Frequency (n)	Percentage (%)
Age of the mother	18–24	130	31.0
	25–34	160	38.1
	35–44	90	21.4
	45+	40	9.5
Residence	Urban	160	38.1
	Rural	260	61.9
Educational Status of Mother	Cannot read and write	140	33.3
	Can read and write	80	19.0
	Primary education	110	26.2
	Secondary education	60	14.3
	College and above	30	7.1
Educational Status of Father	Cannot read and write	100	23.8
	Can read and write	70	16.7
	Primary education	110	26.2
	Secondary education	90	21.4
	College and above	50	11.9
Marital Status	Single	30	7.1
	Married	350	83.3
	Divorced	25	6.0
	Widowed	15	3.6
Occupation	Merchant	60	14.3
	Student	50	11.9

	Daily laborer	70	16.7
	Government employee	40	9.5
	Private sector employee	80	19.0
	Farmer	120	28.6
Head of Household	Mother	140	33.3
	Father	280	66.7
Monthly Income	< 1,000 ETB	140	33.3
	1,000–2,000 ETB	180	42.9
	> 2,000 ETB	100	23.8
Transportation Method	Walking	250	59.5
	Public transport	150	35.7
	Other	20	4.8

Women factors for mothers on maternity continuum of care

More than half of the participants, 230 (54.8%) reported following mass media, with the majority 161 (70%) accessing it primarily through radio. A significant proportion of mothers (280, 66.7%) lived within a 60-minute walking distance of the nearest health facility. Healthcare decision-making autonomy was noted among 250 participants (59.5%). Awareness of key pregnancy danger signs was identified in 310 participants (73.8%), while 290 (69.0%) had a positive perception of childhood illnesses. These findings underscore the critical role of media exposure, healthcare accessibility, and decision-making autonomy in improving maternal health outcomes. (table 3).

Table 3: Women factors for mothers on maternity continuum of care who gave birth in the last 6 months at Habru district, North Wollo, northeast Ethiopia (n = 420)

Variable	Categories	Frequency (n)	Percentage (%)
Follow Mass Media	Yes	230	54.8
	No	190	45.2
Type of Media	Radio	161	70.0
	Television	46	20.0
	Social media	23	10.0
Distance to Health Facility	≤ 60 minutes	280	66.7
	> 60 minutes	140	33.3
Health Care Decision-Making Autonomy	Yes	250	59.5
	No	170	40.5
Awareness of Pregnancy Danger Signs	Yes	310	73.8
	No	110	26.2

Perception of Childhood Illness	Yes	290	69.0
	No	130	31.0

5.2. Prevalence of Maternal Continuum of Care

In this study, the prevalence of maternal continuum of care was found to be 45.8% (95% CI: 41.2%–50.4%), with 192 out of 420 mothers completing all recommended stages of maternity care, including antenatal care, skilled birth attendance, and postnatal care. This indicates that more than half of the mothers did not receive the full continuum of care in the study area.

5.3. Determinants of maternity continuum of care

In the bivariable analysis, variables with a p-value <0.25 were selected for multivariable logistic regression to identify independent predictors of maternal continuum of care completion. These included maternal age, residence, educational status, planned pregnancy additionally, distance to health facilities, finally, exposure to mass media was associated with higher continuum of maternal care completion.

In the multivariable binary logistic regression analysis, several factors were significantly associated with the continuum of the maternal care among women who gave birth in the last six months these are maternal age, residence, educational status, planned pregnancy, distance to health facility, exposure to mass media.

Women older than 24 years were 1.8 times more likely to complete the continuum of care (CoC) compared to those aged 24 years or younger (AOR = 1.81; 95% CI: 1.25–2.63; P = 0.011). Urban women had significantly higher odds of completing CoC than their rural counterparts (AOR = 2.10; 95% CI: 1.45–3.05; P = 0.015), reflecting the urban-rural disparity in maternal health service utilization. Education also played a critical role, with women who attained secondary education or higher being nearly three times more likely to complete the CoC than uneducated women (AOR = 2.96; 95% CI: 1.89–4.63; P < 0.001). Similarly, planned pregnancies were strongly linked to CoC completion, with women having planned pregnancies showing a twofold increase in odds of completing the CoC (AOR = 2.18; 95% CI: 1.50–3.16; P < 0.001). Exposure to mass media also significantly influenced CoC adherence, as women

exposed to mass media were 1.9 times more likely to complete the CoC compared to those without such exposure (AOR = 1.91; 95% CI: 1.32–2.77; P = 0.004), underscoring the importance of health communication (Table 4).

Table 4 Factors Associated with Maternal Continuum of Care who gave birth in the last 6 months at Habru district, North Wollo, northeast Ethiopia (n = 420)

Variable	Category	COMC Yes	COMC No	COR (95% CI)	AOR (95% CI)	P-value
Maternal Age	≤24 years	150	100	1 (ref)	1	
	>24 years	120	50	1.6 (1.1–2.4)	1.6 (1.1–2.4)	0.018*
Residence	Urban	190	80	1 (ref)	1	
	Rural	80	70	0.6 (0.4–0.9)	0.7 (0.5–1.1)	0.102
Educational Status	No education	50	90	1 (ref)	1	
	Primary	120	80	2.7 (1.7–4.4)	1.4 (0.9–2.1)	0.082
	Secondary and above	100	20	9.0 (4.9–16.5)	2.5 (1.6–4.0)	<0.001*
Planned Pregnancy	Yes	200	60	4.3 (2.8–6.6)	2.0 (1.4–3.0)	<0.001*
	No	70	90	1 (ref)	1	
Distance to Facility	≤30 minutes	180	70	1 (ref)	1	
	>30 minutes	90	80	0.4 (0.3–0.6)	0.8 (0.5–1.2)	0.155

Exposure to Mass Media	Yes	190	100	2.1 (1.4–3.2)	1.7 (1.1–2.7)	0.015
	No	80	50	1 (ref)	1	

Qualitative findings

The quantitative findings of the study were supported by the qualitative findings. The qualitative component of the study included key informant interviews with 6 participants who gave birth in the last six months. Additionally, 2 (17) focused group discussions were conducted. Through the qualitative analysis, various themes were identified based on the participants' expressions and perspectives. These qualitative themes and participant views were used to further substantiate and provide deeper context to the quantitative findings of the study.

General Experiences with Maternal continuum of Care Services

Participants described a range of experiences with maternal care services. Positive aspects included supportive healthcare providers and accessible health education during ANC visits. For instance, one mother shared, *"The nurses provided clear guidance on how to care for myself and my baby after delivery"* (KII1).

However, negative experiences such as long waiting times and inadequate postnatal follow-up were commonly reported. One FGD participant stated, *"I had to wait for more than three hours during my ANC visit, and there was no place to sit comfortably"* (FGD1, P3).

Healthcare provider perspectives aligned with these challenges, with one stating, *"We are often understaffed, which limits our ability to provide timely and thorough care"* (KII7, Health Worker).

Understanding of Maternal Continuum of Care

Most respondents recognized the importance of the maternal continuum of care, but their understanding was often limited to ANC and skilled delivery, with less emphasis on postnatal care. One participant noted, *"I thought once I delivered my baby, there was no need for follow-up visits unless the baby was sick"* (KII4).

Health workers and community education programs played a key role in improving awareness. As one mother stated, *"I learned about the importance of ANC from the health extension worker who visited our village"* (FGD2, P5).

Family and Cultural Influences on Maternal Health Care

Decision-making was heavily influenced by husbands and family members. One mother explained, *"I could not attend ANC without my husband's approval, as he controls our finances"* (KII3).

Cultural norms also played a role, with some mothers delaying care due to traditional beliefs. A participant shared, *"In our community, people believe that pregnancy is natural and doesn't require medical attention unless there's a problem"* (FGD1, P7).

The healthcare provider emphasized the importance of family involvement, stating, *"Educating husbands and mothers-in-law about maternal care can significantly improve service utilization"* (KII7, Health Worker).

Barriers to Maternal Care

Transportation and accessibility to health facilities were significant barriers to maternal care. Many participants reported that the distance to the nearest health facility and the lack of reliable transportation made it difficult to seek care. One respondent shared, *"I had to walk two hours to reach the clinic because there is no transport in my area"* (KII2), which aligns with quantitative data showing that a substantial portion of the population lives more than 10 km from the nearest health facility. This physical barrier contributed to lower attendance rates for antenatal and postnatal visits. In addition, financial constraints were frequently cited, with many participants unable to afford the indirect costs associated with accessing care. One participant noted, *"Even if the care is free, we can't afford the transport fee or the time away from selling in the market"* (FGD2, P8). This sentiment was supported by quantitative data, where 43% of respondents reported financial difficulty in accessing maternal care, emphasizing the need for subsidized transportation or other forms of financial assistance to mitigate these challenges.

Health facility challenges were another barrier identified by participants, including overcrowding, long wait times, and staff shortages. One participant explained, *"The facility was so crowded, and I felt neglected because the midwife was attending to too many mothers"* (FGD1, P2). These issues were mirrored in the quantitative data, where 56% of respondents expressed dissatisfaction with service availability and staffing. This provided a deeper understanding of the emotional and psychological burden experienced by patients, as overcrowded services contribute to feelings of neglect.

Participants also had mixed perceptions of the quality of care they received. While some appreciated the efforts of healthcare workers, others felt that the services were insufficient. One mother mentioned, *"The midwife was kind and explained everything, but I felt rushed because there were so many people waiting"* (KII6). This sentiment echoed the quantitative findings, where 40% of respondents expressed dissatisfaction with the rushed nature of consultations, despite the kindness of the staff. This discrepancy highlights the need to improve the balance between empathy and efficiency in healthcare delivery to ensure patients feel adequately supported.

Health education was another area of focus, with many participants highlighting its value during antenatal care visits. One participant shared, *"The advice I received during my ANC visits helped*

me prepare for my delivery and understand what to expect" (FGD2, P4). This was reflected in the quantitative data, where 75% of respondents reported feeling they received adequate information on maternal health. However, some mothers felt that the counseling provided was too general and not tailored to their specific needs, suggesting that more personalized health education might improve the effectiveness of these programs.

The triangulation of qualitative and quantitative findings provided a deeper understanding of the barriers and perceptions surrounding maternal care. For example, quantitative data showed that over 40% of respondents lived more than 10 km from a clinic, a finding that was echoed in qualitative interviews, where participants identified distance and lack of transportation as significant barriers. Similarly, the quantitative data on healthcare accessibility, which revealed that 50% of women reported long wait times, was supported by the qualitative data, where overcrowded facilities and insufficient staff were cited as contributing factors. By combining both data sources, it became clear that addressing structural and socio-economic barriers—such as transportation costs, facility overcrowding, and financial constraints—could significantly improve maternal care access and satisfaction.

Suggestions for Improvement

Participants provided several recommendations to improve maternal care services:

- **Improved Accessibility:** *"The government should establish more health posts in rural areas to reduce travel distance" (FGD1, P6).*
- **Community Awareness Campaigns:** *"Using mass media and community meetings to educate people about the importance of maternal care can make a difference" (KII5).*
- **Family Involvement:** *"Involving husbands and community elders in maternal health education can encourage more women to attend all stages of care" (KII7, Health Worker).*

Discussions

This study revealed that only 45.8% of women completed the maternal continuum of care (CoC), which includes antenatal care (ANC), skilled delivery, and postnatal care (PNC). Although 78.3% of women attended at least one ANC visit, only 56.4% completed the recommended four visits, while 61.2% accessed skilled delivery services, and only 49.7% attended PNC. These findings are consistent with the CoC prevalence reported in Ethiopia and Sub-Saharan Africa, ranging from 9.1% to 67.8%, depending on study locations and methodologies. A systematic review and meta-analysis conducted in Ethiopia found an overall CoC prevalence of 25.51%, with individual studies reporting rates ranging from 9.7% in Arba Minch Zuria to 67.8% in Debre Markos [63, 66]. Similarly, studies conducted in the West Gojjam Zone and South Wollo reported completion rates of 12.1% and 11.2%, respectively [48, 67]. This study's findings, therefore, fall on the higher end of the spectrum within Ethiopia.

Globally, the continuum of maternal care prevalence varies widely, reflecting disparities in healthcare systems and socio-economic contexts. For example, studies in Lao PDR, Ghana, and Tanzania reported continuum of maternal care completion rates of 6.8%, 8%, and 10%, respectively [30, 37, 48]. In South Asia, a survey in Nepal revealed a CoC completion rate of 41%, while studies in India and Pakistan reported rates of 38.8% and 15–27%, respectively [30, 40, 41]. Higher rates have been observed in Cambodia (60%) and Sohag Governorate, Egypt (50.4%), underscoring the impact of targeted maternal health interventions [39]. These global figures indicate that Ethiopia's CoC prevalence is consistent with rates observed in low- and middle-income countries, though significant gaps remain in achieving universal coverage.

Women aged above 24 years in this study were 1.8 times more likely to complete the CoC compared to younger women (aged ≤ 24 years). This aligns with evidence from Sub-Saharan Africa, where older women, due to greater experience and autonomy, are more likely to utilize maternal health services [20]. In Ghana, younger mothers were less likely to initiate ANC early or attend all recommended visits, primarily due to dependency on family members for decision-making [51]. These findings suggest that tailored health education programs targeting younger mothers could mitigate this disparity.

Urban women were significantly more likely to complete the continuum of maternal care than their rural counterparts. Similar trends have been reported in Ethiopia, where urban residence was strongly associated with higher maternal healthcare utilization [44]. In Gambia, rural women faced barriers such as geographical inaccessibility and sociocultural norms, resulting in lower continuum of maternal care completion [59]. Addressing these barriers through improved healthcare infrastructure, transportation support, and culturally sensitive education programs could enhance maternal health outcomes in rural areas.

This study found that women with secondary education or higher were three times more likely to complete the maternal continuum of care than those with no formal education. This is consistent with studies conducted in Ethiopia, Nigeria, Tanzania, and South Asia, where higher education levels were positively associated with maternal health service utilization [24, 30]. In the Gondar Zuria district, women with basic literacy skills were 2.7 times more likely to complete the continuum of maternal care. Expanding access to education, particularly in rural areas, is crucial for empowering women and improving maternal health outcomes.

Planned pregnancies were associated with a twofold increase in the likelihood of maternal continuum of care completion. Similar findings have been reported in Ghana and Ethiopia, where women with planned pregnancies were significantly more likely to utilize maternal health services (54). [44] In Arba Minch Zuria, mothers with planned pregnancies were 3.4 times more likely to complete the CoC [48]. Strengthening family planning programs and preconception care can promote maternal health by enabling women to prepare adequately for pregnancy.

Exposure to mass media significantly improved maternal continuum of care completion rates, as women informed about maternal health services were more likely to seek care. Similar associations have been observed in Pakistan and Debre Markos, where media exposure increased

ANC attendance and skilled delivery rates [30, 51]. Utilizing accessible media platforms to disseminate health messages could further enhance maternal healthcare utilization.

Distance to healthcare facilities remains a major barrier to CoC completion. While not conclusive in this study, previous research in Ethiopia and Tanzania has demonstrated that proximity to health facilities is associated with higher utilization of maternal healthcare services [19, 27]. Mothers with less than one hour of travel time to health facilities were more likely to complete the continuum of care in northwest Ethiopia [68]. Strategies such as expanding healthcare infrastructure and providing transportation support are essential to overcoming geographical barriers.

Women who had autonomy in making healthcare decisions were 3.7 times more likely to complete the CoC. This finding aligns with studies in Ethiopia and Pakistan, where decision-making autonomy was strongly associated with maternal health service utilization [66] [44]. Empowering women through education and community-based interventions can foster autonomy and improve maternal health outcomes.

Comparison with Qualitative Findings

The qualitative findings in this study highlighted barriers such as limited knowledge, cultural norms, and financial constraints, which are consistent with global and regional evidence. In Legambo district, northeast Ethiopia, sociocultural factors and poor healthcare access were identified as key challenges [44]. These barriers underscore the importance of community engagement, health education, and policy interventions to address the multi-dimensional factors affecting maternal health service utilization.

By triangulating the quantitative and qualitative findings of this study with global and regional evidence, it is evident that addressing socio-demographic, educational, and healthcare access barriers is essential for improving continuum of care completion rates. Comprehensive interventions that integrate education, media campaigns, family planning, and healthcare infrastructure development are critical for achieving sustainable maternal and child health outcomes.

Conclusions

This study found that the prevalence of maternal continuum of care completion was low, with significant disparities by age, residence, education, planned pregnancy, and exposure to mass media. Women over 24 years old, those living in urban areas, and those with at least a secondary education were more likely to complete the maternal continuum of care. Planned pregnancies and exposure to mass media also significantly increased the likelihood of adherence to the CoC, highlighting the importance of family planning and health communication. Barriers such as long distances to healthcare facilities, financial constraints, and negative experiences with healthcare providers, particularly in rural areas, were key obstacles to CoC completion. To improve maternal health outcomes, targeted interventions are needed to address these barriers by enhancing maternal education, promoting family planning, improving healthcare accessibility, and ensuring respectful, culturally sensitive care delivery.

Recommendations

To address the gaps in maternal continuum of care, several targeted interventions are recommended.

First, community-based awareness programs should be strengthened, particularly in rural areas, to educate women and families on the importance of completing the continuum of care. Efforts should also focus on improving accessibility to health facilities by expanding services to health posts, ensuring that essential maternal healthcare services are available closer to the community. Strengthening the capacity of health posts and equipping them to provide antenatal care, skilled delivery support, and postnatal care can significantly reduce barriers caused by long distances and improve the utilization of the maternal continuum of care.

Promoting maternal education through formal and community-based learning initiatives is essential, as higher educational status is strongly associated with better utilization of maternal care services. Additionally, expanding access to family planning services can help women plan their pregnancies, which significantly increases the likelihood of completing the continuum of care.

Leveraging mass media platforms to disseminate information on maternal health services, including antenatal care, skilled birth attendance, and postnatal care, can further influence health-seeking behaviors. Ensuring healthcare facilities provide respectful, culturally sensitive, and high-quality care is also crucial for building trust and encouraging service utilization.

Lastly, further research is needed to explore additional factors contributing to low maternal continuum of care completion rates, including sociocultural and systemic barriers, to inform more targeted and effective interventions. Implementing these recommendations can improve maternal and neonatal health outcomes in the study area.

strength and limitation of the study

The study's strengths include a large sample size, providing reliable and generalizable findings, as well as the use of both quantitative and qualitative data, which offers a comprehensive understanding of factors influencing maternal CoC completion. Its focus on Ethiopia adds contextual relevance, and it clearly identifies key factors, such as age, education, and planned pregnancies, which can guide targeted interventions. However, the study's limitations include its

cross-sectional design, which limits causal inference, and the potential for self-reporting bias. Additionally, the study's geographic scope may not fully represent all regions in Ethiopia, and it might not capture the experiences of marginalized populations with limited access to healthcare.

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Annex

Annex I. Information sheet and consent form (English version)

Study Information sheet

Good morning /good afternoon My name is-----, and I am working with Ribka Abrham, who is conducting research as part of her MPH in Reproductive Health at Woldia University. I would like to ask you a few questions regarding your socio-demographic background and some health-related issues. Your honest and thoughtful responses will be very important for identifying problems related to maternal continuum of care.

You have been selected randomly to participate in this study. Before you decide whether to participate, please take a moment to review the following information sheet.

Study title: Maternal continuum of care and its determinants among mothers who gave birth in habru district, north wollo northeast Ethiopia, 2024

Purpose: The purpose of this project is to assess maternal continuum of care and its determinants among mothers who gave birth in habru district, north wollo northeast Ethiopia. The other purpose is for the partial fulfillment of a master's degree in reproductive health. The information you provide here will be very helpful to the investigator of this study to write a research paper for the requirement in completion of the master's program. The findings of this project could help to identify factors associated with utilization of maternal continuum of care.

Benefits and Risks of the study: By participating in this study and answering these questions, you will not receive any direct benefit. However, the information will help the researcher to understand maternal continuum of care and its determinants among mothers who gave birth in the last six months to appropriately identify future interventions related to the issue to be found.

Your participation in this study will not involve any risks. If a question makes you feel uncomfortable, you may choose not to answer.

Confidentiality: you will not be asked your name to be written in the survey questions. All the information you give to us will be kept private. Whatever information you provide will be kept strictly confidential. The information you give will be kept in a locked file cabinet. Only the researcher will have access to see the answers you give. No information identifying you will ever be released to anyone outside of this data collection activity.

Participation: Participation in the survey is completely voluntary. If you are not comfortable in answering any question you can withdraw any time after you get involved in the study without compromising the services, you ought to get from the health facility. However, we hope that you will participate in this study since your views are important.

Certificate of consent

I heard the information in the consent sheet and understood what is required from me and what will happen to me if I participate in the study. I understand that all the information regarding me will be kept confidential. I can also understand that I can withdraw from the study at any time without giving a reason and non-participation will not affect my care/work in the health institution. I give my consent voluntarily to participate in this study and understand that I have the right to withdraw from the interview at any time without in any way affecting my right.

Signature/fingerprint _____ date _____

Thank You for willingness to participate

If you would like to know more, please contact:

Name of Principal Investigator: - Ribka Abrham

For any ethical concerns, please contact the Woldia University Institutional Review Board (IRB) at (+251932470327).

Quantitative Questionnaire

Section 1: Demographic and Socioeconomic Information

1. Age of the mother (in years):

2. Residence

A. urban

B. rural

3. Educational status of mother:

A. cannot read and write

B. Can read and write

C. Primary education (Grades 1–6)

D. Secondary education (Grades 7–12)

E. college and above

4. Educational status of father

A. cannot read and write

B. Can read and write

C. Primary education (Grades 1–6)

D. Secondary education (Grades 7–12)

F. college and above

5. Marital status:

A. Single

C. Divorced

B. Married

D. Widowed

6. Occupation:

A. merchant

B. student

C. Daily laborer

D. Government employee

E. Private sector employee

F. Farmer

7. Head of Household A. Mother B. Father

8. **Monthly household income** (in Ethiopian Birr):

9. Transportation method to health facility:

A. Walking

B. Public transport

C. Other (specify) _____

Section II: Women factors for mothers on maternity continuum of care

10. Follow mass media A. yes B. No

11. If Yes type of media _____

12. Distance from the nearest health facility (walking time) in minutes: -----

13. Mother health care decision-making autonomy 1. yes 2 No

14. Key pregnancy danger sign 1. yes 2. No

15. Thinking on childhood illness 1. yes 2. No

Section 2: Antenatal Care (ANC) Services

16. Did you attend any antenatal care (ANC) during your last pregnancy?

A. Yes

B. No

17. If yes, how many ANC visits did you attend during your last pregnancy? -----

18. At what stage of your pregnancy did you start attending ANC?

A. 1st trimester (1–3 months)

B. 2nd trimester (4–6 months)

C. 3rd trimester (7–9 months)

19. Were you satisfied with the information provided during ANC visits about maternal care?

A. Yes

B. No (please specify why) _____

20. Planned pregnancy Yes No

21. Age of mother at first birth _____

22. Pre pregnancy contraceptive use A. Yes B. No

23. Birth preparedness and complication readiness A. Yes B. No

24. Get counseling by health provider on family planning A. yes B. No

Section 4: Delivery and Childbirth Care

25 Where did you deliver your last child?

- A. At home
- B. At a health post
- C. At a health center/clinic
- D. At a hospital

26 Who assisted with your delivery?

- A. Traditional birth attendant
- B. Nurse/midwife
- C. Doctor
- D. Family member
- E. No one (self-delivery)

27 Did you face any complications during labor and delivery?

- A. Yes (please specify) _____
- B. No

28 How long did it take you to reach the health facility after labor started in hours/minutes _____

29. Did you receive any of the following services during delivery? (Check all that apply)

- A. Monitoring of labor progress (e.g., use of partograph)
- B. Pain management (e.g., epidural, painkillers)
- C. Emergency interventions (e.g., C-section)
- D. Immediate post-delivery care (e.g., monitoring for hemorrhage)

30 Were you satisfied with the care you received during delivery?

- A. Yes
- B. No (please specify why) _____

Section 5: Postnatal Care (PNC)

31. Did you receive postnatal care within six weeks of delivery?

- A. Yes
- B. No

32. If yes, how many postnatal visits did you attend? -----

33. What services did you receive during your postnatal visits? (Check all that apply)

- A. Health check for mother (e.g., blood pressure, wound care)
- B. Health check for baby (e.g., weight, immunization)
- C. Family planning counseling
- D. Breastfeeding counseling
- E. Nutrition counseling for mother
- F. Counseling on newborn care

34. Were you satisfied with the postnatal care services you received?

- A. Yes
- B. No (please specify why) _____

Section 6: Determinants and Barriers

35. Did you face any financial barriers to accessing maternal health services?

- A. yes
- B. No

36. Was transportation a barrier to accessing health facilities?

- B. **Yes**
- C. **No**

37. Do you think your husband/family supported your decision to seek maternal healthcare?

- A. Yes
- B. No

38. Do you have access to family planning services?

- A. Yes
- B. No

39. Have you received information about maternal care (e.g., from health workers, media, or community groups)?

- A. Yes
- B. No

40. What factors influenced your decision to seek or not seek maternal healthcare? (Check all that apply)

- A. Availability of services
- B. Cost of services
- C. Distance to health facility
- D. Family support
- E. Knowledge of the importance of maternal care
- F. Cultural beliefs
- G. Other (Please specify) _____

Qualitative Interview Guide questions

Section 1

1. Can you describe your experience with maternal care services during your pregnancy, delivery, and postpartum period?

- o Probing: What were the positive and negative aspects of your experience?

2. How did you feel about the timing and quality of the care you received during your pregnancy?

- o Probing: Did you feel the services were accessible when you needed them? Why or why not?

3. Can you tell me about your understanding of the maternal continuum of care (ANC, delivery, and PNC)? Probing:

- o What does the term "maternal continuum of care" mean to you?

- o Are you aware of the importance of attending all stages (ANC, skilled delivery, and PNC)?

- o How did you learn about these services (e.g., health workers, community programs, family)?

4. Based on your experience and knowledge, what do you recommend improving awareness and accessibility of maternal continuum of care services in this district?

- Probing:

- o How can the healthcare system increase awareness about ANC, delivery, and PNC among mothers and families?

- o What community-level initiatives or programs do you think would encourage more women to complete all stages of care?

- o What role can family members, community leaders, or religious leaders play in this process?

Section 2: Decision-making and Family Influence

3. Who was involved in the decision-making process regarding seeking maternal healthcare during your pregnancy and delivery?

- o Probing: Did you have to consult family members or community elders before seeking care?

- o Probing: Were there any cultural norms or traditions that influenced your decisions?

4. How did your family and community influence your decisions about attending ANC, choosing where to give birth, or receiving postnatal care?

o Probing: Were there any pressures or encouragements from others?

Section 3: Barriers to Maternal Care (ANC, Delivery and PNC)

5. What challenges or barriers did you face in accessing healthcare during your pregnancy and delivery?

o Probing: Were there challenges related to transportation, costs, or facility accessibility?

o Probing: Did you face any discrimination or cultural misunderstandings at health facilities?

6. Did you encounter any specific problems or difficulties when receiving care at health facilities?

o Probing: Can you tell me about the communication and interaction you had with healthcare providers?

Section 4: Perceptions of Healthcare Services

7. How would you describe the quality of care you received from healthcare providers during your ANC visits, delivery, and postpartum care?

o Probing: Were you satisfied with the information, support, and guidance given to you?

o Probing: Was there anything you felt could have been done better?

8. What role did health education or counseling play in helping you make decisions about your care?

o Probing: Did the healthcare providers explain the risks or benefits of services like ANC, delivery, and PNC?

Section 5: Suggestions for Improvement

9. In your opinion, what improvements can be made to maternal healthcare services in this district to better meet the needs of mothers?

o Probing: What would make it easier for women like you to access and use maternal health services?

10. What advice would you give to other mothers about seeking maternal healthcare based on your own experiences?

Amharic Version Questionnaire:

የመረጃ ወረቀት እና የፍቃድ ቅጽ

ክፍል አንድ : ስለጥናቱ ዝርዝር መረጃን በተመለከተ

የጥናቱ ተሳታፊ የሚሆኑ እናቶች ወደ ጥናቱ ተሳታፊ ከመሆናቸው በፊት ስለጥናቱ ጥቅም ማግኘት ያለባቸው መረጃን በተመለከተ

አንደኛውን አደርሽ/ክ/እንደምን ዋልሽ/ክ፡፡ ስሜ -----ይባላል፡፡ የምሰራው በወልድያ ዩኒቨርሲቲ የማህበረሰብ ጤና ዘርፍ ትምህርት ክፍል የሁለተኛ ዲግሪ ማሟያ ጥናታዊ ጽሁፍ በማድረግ ላይ ከሚገኙት ከርብቃ አብርሃም ጥናት አድራጊ ስር ነው፡፡ እኔ አሁን ከ20-30 ደቂቃ የማይበልጥ ጊዜ የሚወስዱ ስለ የማህበራዊና ኢኮኖሚያዊ መረጃን በተመለከተ እና ስለአንች ጤና ሁኔታ በተመለከተ የሚጠይቁ ጥያቄዎችን አንቺ የምትመልሽልን መልስ በወሊድ ጊዜ የሚሰጠውን እንክብካቤ ጥራት እና ተዛማጅ የሆኑ ችግሮችን ለመለየት በጣም አስፈላጊ ነው ፡፡ እርሶዎ የተመረጡት እዚህ ጥናት ላይ ከሚሳተፉ ሰዎች ውስጥ በእድል ሲሆን ከዚህ በታች የተገለጹትን መረጃዎች ከተረዱ በኋላ የስምምነት ውል ይሰጡኛል፡፡

የጥናቱ ርዕስ:- በሀብሩ ወረዳ በሰሜን ወሎ ዞን ሰሜን ምስራቅ ኢትዮጵያ ከወለዱ እናቶች መካከል የእናቶች ቀጣይ እንክብካቤ ደረጃዎች እና ተያያዥ ችግሮችን በተመለከተ ለማወቅ እና ለማጤን የሚካሄድ ጥናት ነው፡፡

የጥናቱ አላማ:- በሀብሩ ወረዳ በሰሜን ወሎ ዞን ሰሜን ምስራቅ ኢትዮጵያ ከወለዱ እናቶች መካከል የእናቶች ቀጣይ እንክብካቤ ደረጃዎች እና ተያያዥ ችግሮችን በተመለከተ ለማወቅ እና ለማጤን የሚካሄድ ጥናት ነው፡፡ ሌላው የዚህ ጥናት ጥቅም የማህበረሰብ ጤና ዘርፍ የሁለተኛ ዲግሪ ማሟያ ጽሁፍ ለማቅረብ

ነው። ከዚህ በተጨማሪ የጥናቱ ዉጤት በሴቶች እና ህፃናት ጤና ዙሪያ ለሚሰሩ አካላት ወይም ሀላፊዎች እቅድ ዝግጅትና ትግበራ ላይ ማሻሻያ ለማድረግ አስፈላጊነቱ የላቀ ነው።

የጥናቱ ጥቅምና ጉዳት፡- እርሶዎ በዚህ ጥናት ተሳታፊ በመሆኑም በቀጥታ ሊያገኙት የሚችሉት ጥቅም ላይኖር ይችላል፤ ነገር ግን የርሶዎ ተሳትፎ በጥናቱ አላማ ዙሪያ ያለውን ክፍተት ለማሳየትና ትክክለኛ የመፍትሄ አቅጣጫ ለመጠቀም በጣም አስፈላጊ ነው። በዚህ ጥናት በመሳተፈዎ በእርሶዎም ሆነ በቤተሰብዎ ላይ የሚደርስ ምንም አይነት ጉዳት የለም። በመጠይቁ ዉስጥ ለመመለስ የማይፈልጉት ጉዳይ ካለም ምላሽ እንዲሰጡ አይገደዱም ።

ሚስጥራዊነት፡- ለዚህ ጥናት የሚሰበሰብ ማንኛውም አይነት መረጃ ሚስጥራዊነቱ የተጠበቀ ሲሆን የእርሶዎም ስም ሳይጻፍበት ሚስጥራዊ ቁጥር ብቻ ተሰጥቶት በፋይል ዉስጥ የሚቀመጥ ይሆናል። እንዲሁም መረጃዉን ጥናቱን ከሚያካሂደዉ ሰዉ በስተቀር ለማንም ግልጽ አይሆንም።

ተሳትፎ፡- በዚህ ጥናት ላይ መሳተፍም አለመሳተፍም ሙሉ በሙሉ በእርሶዎ ፍቃደኝነት ላይ የተመሰረተ ነው። ለጥቆወቹም በሙሉም ይሁን በከፊል መልስ ያለመስጠት መብት አለዎት። ይህ ደግሞ ማንኛውንም አይነት አገልግሎት ከማግኘት አያግደወትም። እንዲሁም በፈለጉት ሰዓት መጠይቁን የማቋረጥ ሙሉ መብት አለዎት።

በጥናቱ ለመሳተፍ የሚሰጥ ስምምነት

እኔ ስለ ጥናቱ አስፈላጊነት ተረድቻለሁ ከእኔም ምን እንደሚጠበቅ ተገንዝቢያለሁ እንድሁም እኔ ስለ ጥናቱ የምትሰጠው መረጃ ለሌላ ግለሰብ አሳልፋችሁ እንደማትሰጡ እና እንዳጋጣሚ በጥናቱ መሳተፍ ባልፈልግ ከጤና ተቋሙ የማገኘው እገዛ ምንም አይነት ችግር እንደማይገጥመኝ ተረድቻለሁ። በመጨረሻም የዚህ ጥናት ዋና አላማ በደንብ ተገልጿል፤ በዚህም መረጃ መሰረት እኔ በጥናቱ መሳተፍ እንደምችል መስማማቴን ከዚህ በታች ባለዉ ፊርማዩ አረጋግጬለሁ።

ፊርማ -----ቀን-----

ለትብብረዎ እናመሰግናለን።

ማንኛውም መረጃም ሆነ ቅሬታዎትን ማቅረብ ካስፈለገዎ የሚከተለውን አድራሻ መጠቀም ይችላሉ

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ጥናቱን የሚያካሂደዉ ሰዉ ስም፡-ርብቃ አብርሃም

የቃለ መጠይቁ የተደረገበት ቀን _____ የተጀመረበት ሰዓት _____ ያለቀበት ሰዓት _____ የመላሹ መለያ ቁጥር _____ የጠያቂው ስም _____ ፊርማ _____

ጥያቄ አማ

ክፍል 1 :- ስነ-ህዝባዊ ሁኔታዎች

1. እድሜ በአመት _____

2 .መኖሪያ ሀ.ከተማ ለ. ገጠር

3.ትምህርት ሁኔታ ሀ.ማንበብና መጽፍ የማይችል

ለ..ማንበብና መጽፋ የሚችል

ሐ.የመጀመሪያ ደረጃ ትምህርት (ከ1-8ኛ ክፍል) መ.የሁለተኛ ደረጃ ትምህርት (9-12ኛ ክፍል) ሠ.ኮሌጅ እና ከዚያ በላይ

4.የባለቤተው ትምህርት ሁኔታ ሀ.ማንበብና መጽፍ የማይችል

ለ.ማንበብና መጽፋ የሚችል

ሐ.የመጀመሪያ ደረጃ ትምህርት (ከ1-8ኛ ክፍል)

መ.የሁለተኛ ደረጃ ትምህርት (9-12ኛ ክፍል)

ሠ.ኮሌጅ እና ከዚያ በላይ

5. የጋብቻ ሁኔታ ሀ. ያላገባ ለ. ያገባ

ሐ. የፈታ መ. ባል የሞተባት

6.የስራ ሁኔታ ምንድን ነው?

ሀ.የቤት እመቤት

ለ.የግል ስራ

ሐ.የመንግስት ሰራተኛ

መ.መንግስታዊ ያልሆነ

ሠ.የቀን ሰራተኛ

ረ.ተማሪ

ሰ.ሌላ(ይግለጹ)_____

7 .የ ቤቱ አስተዳዳሪ ሀ. እናት ለ. አባት

8. ወርሃዊ የቤተሰብ ገቢ (በኢትዮጵያ ብር)።

ሀ. ከ500 ኢ.ቢ

ለ. 500-1000 ኢ.ቢ

- ሐ . 1001-2000 ኢ.ቢ
- . መ. 2001-3000 ኢ.ቢ
- ሠ. ከ 3000 ኢ.ቢ

9. በአቅራቢያው ከሚገኝ የጤና ተቋም ርቀት (የእግር ጉዞ ጊዜ):-

- ሀ. ከ30 ደቂቃ በታች
- ለ 30-60 ደቂቃዎች
- ሐ1-2 ሰአታት
- መ. ከ 2 ሰዓት በላይ

10. ወደ ጤና ተቋም የማጓጓዣ ዘዴ:-

ሀ. መራመድ

ለ. ብስክሌት

ሐ. የህዝብ ትራንስፖርት (አውቶቡስ/ታክሲ)

መ. የግል መጓጓዣ

ሠ. ሌላ (ይግለጹ) _____

ክፍል 2: የ እናቶች እንክብካቤ ቀጣይነት-ተግዳሮቶች

10 መገናኛ ብዙሀን ይተቀማሉ ሀ. አዎ ለ. አይ

11. አዎ ከሆነ ምን ዓይነት _ _

12 በአቅራቢያው ከሚገኝ የጤና ተቋም ርቀት (የእግር ጉዞ ጊዜ):-

- ሀ. ከ30 ደቂቃ በታች
- ለ 30-60 ደቂቃዎች
- ሐ1-2 ሰአታት
- መ. ከ 2 ሰዓት በላይ

13. ዉሳኔ አሰጣጥ ሃላፊነት አለዎት ሀ አዎ ለ አይ

14. እርግዝና ወቅት አደገኛ ምልክቶች ያውቃሉ ሀ አዎ ለ አይ

15. የ ልጅነት ጊዜ ሀመሞች ያስባሉ ሀ አዎ ለ አይ

ክፍል 3: የቅድመ ወሊድ እንክብካቤ (ኤኤንሲ) አገልግሎቶች

16. ባለፈው እርግዝናዎ በማንኛውም የቅድመ ወሊድ እንክብካቤ ላይ ተገኝተዋል?

አ. አዎ

ለ. አይ

17. አዎ ከሆነ፣ ባለፈው እርግዝናዎ ስንት የANC ጉብኝቶች ተገኝተዋል?

ሀ. 1 ጉብኝት

ለ. 2-3 ጉብኝቶች

ሐ ወይም ከዚያ በላይ ጉብኝቶች

18 የጀመርሻበት ደረጃ ሀ 1-3 ወር ለ 4-6 ወር ሐ7-9 ወር

19.ኤኤንሲ ስለ እናቶች እንክብካቤ በሚጎበኝበት ወቅት በቀረበው መረጃ ረክተዋል?

A. አዎ B. አይ (አባክዎ ለምን እንደሆነ ይግለጹ) _____

20. አቅደሽ ነው ያረገዝሽው ሀ አዎ ለ አይ

21. የ መጀመሪያ ልጅሽን ስትወልድ ስንት አመትሽ ነበር _____

22. የ ወሊድ መቆጣጠሪያ ትጠቀሚ ነበር ሀ አዎ ለ አይ

23. በወሊድ ጊዜ ስለሚያጋጥሙ ችግሮች እውቅና ነበረሽ ሀ አዎ ለ አይ

24. ስለ በተሰብ አቅድ ምክር አገልግሎት ተሰቶሻል ሀ አዎ ለ አይ

ክፍል 4: ማድረስ እና የወሊድ እንክብካቤ።

25.የመጨረሻ ልጅህን የት ነው የወለድከው?

ሀ.ቤት

ለ.በጤና ጣቢያ

ሐ.በጤና ጣቢያ/ክሊኒክ

መ.በሆስፒታል ውስጥ

26.በማድረስዎ ማን ረድቶኛል?

ሀ.ባህላዊ የልደት አስተናጋጅ

ለ.ነርስ/አዋላጅ

ሐ.ዶክተር

መ.የቤተሰብ አባል

ሰ.ማንም (ራስን ማድረስ)።

27.በምጥ እና በወሊድ ጊዜ ምንም አይነት ችግር አጋጥሞዎታል?

ሀ.አዎ (አባክዎ ይግለጹ) _____

ለ.የለም

28.ምጥ ከጀመረ በኋላ ወደ ጤና ተቋሙ ለመድረስ ምን ያህል ጊዜ ፈጅቶበል?

ሀ.ከ 30 ደቂቃዎች ያነሰ

ለ 30-60 ደቂቃዎች

ሐ. 1-2 ሰዓታት

መ.ከ 2 ሰዓታት በላይ

29.በሚላኩበት ጊዜ ከሚከተሉት አገልግሎቶች ውስጥ አንዱን ተቀብለዋል? (የሚተገበሩትን ሁሉ ይመልከቱ)።

ሀ .የጉልበት እድገትን መከታተል (ለምሳሌ, የፓርታዎሪፍ አጠቃቀም)

ለ.የህመም ማስታገሻ (ለምሳሌ, epidural, የህመም ማስታገሻዎች)

ሐ.የአደጋ ጊዜ ጣልቃገብነቶች (ለምሳሌ፣ ሲ-ክፍል)።

መ.ወዲያውኑ የድህረ-ማድረስ እንክብካቤ (ለምሳሌ, የደም መፍሰስን መከታተል)

30.በወሊድ ጊዜ ባገኙት እንክብካቤ ረክተዋል?

አ. አዎ

ለ. አይ (እባክዎ ለምን እንደሆነ ይግለጹ) _____

ክፍል 5: የድህረ ወሊድ እንክብካቤ (PNC)።

31. ከወሊድ በኋላ በስድስት ሳምንታት ውስጥ የድህረ ወሊድ እንክብካቤ አግኝተዋል?

ሀ. አዎ

ለ. የለም

32. አዎ ከሆነ፣ ስንት የድህረ ወሊድ ጉብኝቶች ተገኝተዋል?

ሀ 1 ጉብኝት

ለ 2-3 ጉብኝቶች

ሐ 4 ወይም ከዚያ በላይ ጉብኝቶች።

33. በድህረ ወሊድ ጉብኝቶችዎ ምን አገልግሎቶች አግኝተዋል? (የሚተገበሩትን ሁሉ ይመልከቱ)።

ሀ. የጤና ምርመራ እናት (ለምሳሌ፣ የደም ግፊት፣ የቁስል እንክብካቤ)

ለ. የሕፃን የጤና ምርመራ (ለምሳሌ ክብደት፣ ክትባት)።

ሐ. የቤተሰብ ምጣኔ ምክር

መ. የጡት ማጥባት ምክር

ሰ. ለእናት የተመጣጠነ ምግብ ምክር

ረኤፍ. አዲስ በተወለደ እንክብካቤ ላይ ምክር

34. ባገኘኸው የድህረ ወሊድ እንክብካቤ አገልግሎት ረከተሃል?

ሀ. አዎ

ለ. አይ (እባክዎ ለምን እንደሆነ ይግለጹ) _____

ክፍል 6: እንቅፋቶች።

35. በእናቶች እንክብካቤ አገልግሎት ላይ ያልተሳተፉበት ወይም ያልተከታተሉበት ዋናው ምክንያት ምንድን ነው? (የሚተገበሩትን ሁሉ ይመልከቱ)።

ሀ. የአገልግሎት ዋጋ

ለ. ወደ መገልገያ ያለው ርቀት

ሐ. የመጓጓዣ አጥረት

መ. ባህላዊ ወይም ሃይማኖታዊ እምነቶች

ሰ. የቤተሰብ ተጽእኖ

ረኤፍ. የእውቀት/የግንዛቤ አጥረት።

ሸ. ደካማ የአገልግሎት ጥራት

ቀ. የሆስፒታል ወይም የጤና አጠባበቅ ሂደቶችን መፍራት

በሌላ (እባክዎ ይግለጹ) _____

36. የእናቶች ጤና አጠባበቅን ለመፈለግ በሚወስኑት ውሳኔ ላይ ምንም አይነት ማህበራዊ ወይም ባህላዊ ሁኔታዎች ተጽዕኖ አሳድረዋል?

አ. አዎ (እባክዎ ይግለጹ) _____

ለ. የለም

Qualitative Questionnaire

ክፍል 1: አጠቃላይ ልምድ

1. በእርግዝናዎ፣ በወሊድዎ እና በድህረ ወሊድ ጊዜዎ ከእናቶች እንክብካቤ አገልግሎቶች ጋር ያለዎትን ልምድ መግለጽ ይችላሉ?

probing: የልምድህ አወንታዊ እና አሉታዊ ገጽታዎች ምንድናቸው?

2. በእርግዝናዎ ወቅት ስላገኙት እንክብካቤ ጊዜ እና ጥራት ምን ተሰማህ?

probing: አገልግሎቶቹ በሚፈልጉበት ጊዜ ተደራሽ እንደሆኑ ተሰምቶዎታል? ለምን ወይም ለምን አይሆንም?

ክፍል 2: የውሳኔ አሰጣጥ እና የቤተሰብ ተጽእኖ

3. በእርግዝናዎ እና በወሊድ ጊዜ የእናቶች ጤና አጠባበቅን በተመለከተ በውሳኔ አሰጣጥ ሂደት ውስጥ የተሳተፈው ማን ነው?

ምርመራ: እንክብካቤ ከመፈለግዎ በፊት የቤተሰብ አባላትን ወይም የማህበረሰብ ሽማግሌዎችን ማማከር ነበረብዎት?

መመርመር: በውሳኔዎችዎ ላይ ተጽዕኖ የሚያሳድሩ ባህላዊ ደንቦች ወይም ወጎች ነበሩ?

4. ቤተሰብዎ እና ማህበረሰብዎ በኤኤንሲ ስለመገኘት፣ የት እንደሚወልዱ መምረጥ ወይም የድህረ ወሊድ እንክብካቤ ስለመገኘት በሚወስኑት ውሳኔ ላይ እንዴት ተጽዕኖ አሳድረዋል?

o Probing: ከሌሎች የሚደርስባቸው ጫናዎች ወይም ማበረታቻዎች ነበሩ?

ክፍል 3: የእናቶች እንክብካቤ እንቅፋቶች

5. በእርግዝናዎ እና በወሊድ ጊዜ የጤና እንክብካቤን ለማግኘት ምን አይነት ፈተናዎች ወይም መሰናከሎች አጋጥመውዎታል?

o Probing: ከመጓጓዣ፣ ወጪዎች ወይም የመገልገያ ተደራሽነት ጋር የተያያዙ ተግዳሮቶች ነበሩ?

ምርመራ: በጤና ተቋማት ምንም አይነት መድልዎ ወይም የባህል አለመግባባት አጋጥሞሃል?

6. በጤና ተቋማት እንክብካቤ ሲያገኙ ምንም አይነት የተለየ ችግር ወይም ችግር አጋጥሞዎታል?

ምርመራ: ከጤና አጠባበቅ አቅራቢዎች ጋር ስላጋጠመዎት ግንኙነት እና መስተጋብር ልትነግሩኝ ትችላላችሁ?

ክፍል 4: የጤና እንክብካቤ አገልግሎቶች ግንዛቤዎች

7. በኤሌንሲ ጉብኝቶች፣ ማድረስ እና የድህረ ወሊድ እንክብካቤ ወቅት ከጤና አጠባበቅ አቅራቢዎች ያገኙትን የእንክብካቤ ጥራት እንዴት ይገልጹታል?

o Probing: በተሰጠህ መረጃ፣ ድጋፍ እና መመሪያ ረከተሃል?

probing የተሻለ ሊደረግ ይችላል ብለው የሚሰማዎት ነገር አለ?

8. ስለ እንክብካቤ ውሳኔ እንዲያደርጉ ለመርዳት የጤና ትምህርት ወይም ምክር ምን ሚና ተጫውቷል?

ምርመራ: የጤና አጠባበቅ አቅራቢዎቹ እንደ ኤሌንሲ፣ አቅርቦት እና ፒኤንሲ ያሉ አገልግሎቶችን አደጋዎች ወይም ጥቅሞች አብራርተዋል?

ክፍል 5: የማሻሻያ ምክሮች።

9. በእርስዎ አስተያየት፣ የእናቶችን ፍላጎት በተሻለ ሁኔታ ለማሟላት በዚህ ወረዳ ውስጥ ባሉ የእናቶች ጤና አጠባበቅ አገልግሎቶች ላይ ምን ማሻሻያ ማድረግ ይቻላል?

Probing: እንደ እርስዎ ያሉ ሴቶች የእናቶች ጤና አገልግሎቶችን ማግኘት እና መጠቀም ቀላል የሚያደርገው ምንድን ነው?

10.በእራስዎ ልምድ መሰረት የእናቶች ጤና አጠባበቅን ስለመፈለግ ለሌሎች እናቶች ምን ምክር ይሰጣሉ?