Perceptions, Barriers, and Facilitators of Maternal Health Service Utilization in Southern Ethiopia: A Qualitative Exploration of Community Members' and Health Care Providers' Views

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Article

Perceptions, Barriers, and Facilitators of Maternal Health Service Utilization in Southern Ethiopia: A Qualitative Exploration of Community Members' and Health Care Providers' views

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Abstract: Background: Maternal health service (MHS) use is a key strategy to reduce maternal mortality. However, the existing evidence is scarce to design efficient intervention strategies in Ethiopia. Thus, we aimed to explore community members and health care providers' perceptions of MHS, and barriers, and facilitators of MHS use in southern Ethiopia. **Methods:** A phenomenological qualitative study was conducted from November 14-30, 2022, in the northern zone of the Sidama region. Sixteen in-depth interviews, nine focus group discussions, and 15 key informant interviews were done with 112 study participants. A maximum variance sampling method was used to select study participants. Data coding and analysis were done using MAXQAD 2020 software and presented in narratives. **Results:** Communities have positive perceptions and good practices of skilled antenatal care (ANC) and health facility delivery (HFD), but lack awareness of postnatal care (PNC) services and schedules. Some have experienced negative interactions with health care providers, health facilities, and ambulance drivers. The main identified barriers to ANC use were lack of awareness of ANC benefits, distance from a health facility, costs associated with ANC use, long waiting time, lack of access to road, and women being busy with different household chores. Distance from health facility, costs associated with HFD use, unpredicted labour, lack of an ANC visit, lack of a birth preparedness plan, and non-dignified care were the main barriers to HFD. The major identified barriers to PNC use were home delivery, lack of awareness of PNC service and schedule, and socio-cultural beliefs. The main identified facilitators of MHS use were previous experience and fear of obstetric complications, health extension workers and women's development teams, and pregnant women's forum. **Conclusions:** Rural women still encounter several challenges when using MHS, even though communities have positive perceptions and good practices of skilled MHS. Bad experiences mothers faced in health facilities, challenges associated with the costs of MHS use, poor awareness of service, and unpredictable labour continued to be basic barriers to MHS use. Intervention approaches should consider inter-sectoral collaboration to address barriers at the community and health facility levels. The programs must emphasize the transportation arrangements during unpredictable labour, the needs of poor mothers, and women who have poor awareness of MHS at the community level.

Keywords: antenatal care; health facility delivery; postnatal care; utilization; women of reproductive age; perceptions; barriers; facilitators; phenomenological study; Ethiopia

Background

Worldwide maternal mortality is high, and 223 maternal deaths per 100,000 live births (LBs) occurred in 2020 [1]. It will take an annual rate of reduction of 11.6% to bring the worldwide maternal mortality ratio (MMR) below 70 by the year 2030, a rate that has seldom been attained at the country level [1,2]. Low- and middle-income countries (LMICs) have a disproportionately high MMR (nearly 95% of total maternal mortalities) [3]. Though MMR decreased by almost 34% globally from 2000–

2020, significant commitments and efforts are needed in LMICs, particularly in Sub-Saharan Africa (SSA) and Asia, to attain target 1 of Sustainable Development Goal 3 [4,5].

Ethiopia is one of the countries with a high MMR in SSA [1–3,5]. According to the report of the 2016 Ethiopian Demographic and Health Survey (EDHS), 412 maternal deaths occurred per 100,000 LBs [6]. Furthermore, great differences in maternal mortality exist across regional states in Ethiopia. For instance, it ranged from 74 in the Tigray regional state to 548 deaths per 100,000 LBs in the Afar region [7]. This statistic was higher in the Sidama region, and a study reported that MMR was 419 per 100,000 LBs, and Aroresa district of the Sidama region had the highest rate of 1142 deaths per 100,000 LBs [8].

Generally, due to different interventions, global maternal survival has increased in the last two decades [4]. Nevertheless, many more survivors suffer from severe situations such as ruptured uterus and obstetric fistula, which can affect them for the rest of their lives [1,9]. Maternal mortality has special effects on entire families, communities, and nations and is an influence that transcends generations. Complications that cause disabilities and deaths in women also harm neonates and infants they care for [2,10].

Maternal mortality can be averted if simple preventive measures are considered and sufficient care is accessible and available during critical periods (pregnancy, childbirth, and postpartum) [1,2]. Besides, maternal health service use (MHSU), comprising access to high-standard quality care, is considered extremely effective in decreasing the burden of maternal illness and death, specifically in low-resource areas [1,2,4,11]. Nonetheless, the utilization of the existing MHS is low in developing countries, particularly SSA [2], and there is no exception in Ethiopia [12].

For example, the 2019 Mini EDHS report showed that ANC service utilization was 74%; merely 43% of women had 4 or more ANC visits during their most recent pregnancy; more than half (52%) of all deliveries occurred at home; and only 34% of mothers obtained PNC follow-up within the first 48 hours after delivery in Ethiopia. Besides, significant regional, urban, and rural differences persist in terms of use [12]. Moreover, utilization of MHS was low in the Sidama region, where only 45% of women used at least one ANC, 40.7% attended skilled births, and 14.3% utilized PNC [13].

Several interrelated factors have contributed to low utilization of existing MHS, such as individual, community, socioeconomic, and demographic factors; women's obstetric characteristics; organizational or health facility-related factors; health care providers; perceived quality of health services; poor knowledge of obstetric danger signs (ODS); lack of service access; health system functioning; delay in receiving treatment; dearth of decision-making authority; infrastructure; and socio-cultural and traditional practices [14–23].

The Ethiopian government has been applying multi-dimensional methods, measures, and strategies to halt the low MHSU and universal inaccessibility of service in line with the principle of primary health care. Some of the strategies comprise the development of a broad 20-year health sector development program [24], a national reproductive health strategy [25], and a growth and transformation plan (GTP) [26], the training and deployment of health extension workers (HEWs) and health care providers (HCPs), particularly midwives in rural areas, the provision of free MHS, free ambulance service to health facilities, expansion of health facility building, and restructured community engagement using the Women Development Army (WDA) [26].

Despite these efforts being implemented by the Ethiopian government, MHSU was low at the country level in general and very low in rural settings in particular [12]. Hence, the community perceptions and barriers influencing rural mothers to use MHS require a comprehensive understanding in a socio-cultural and socioeconomic context. Besides, earlier studies were quantitative [14,15,27–31] and recommended conducting further studies using a qualitative method to clearly understand the community's perceptions of MHS, and barriers and facilitators of MHSU. Community perceptions of MHS, and barriers and facilitators of MHSU may differ from region to region in Ethiopia, and utilization of MHS is extremely variable [12]. Moreover, the existing evidence is limited to the design of effective and efficient, context-specific, locally relevant, and culturally appropriate interventions.

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The findings of this study can be useful to inform program managers, policymakers, and implementers regarding where to focus attention in planning intervention strategies to improve MHSU and decrease maternal mortality. Also, the results can be helpful to encourage evidence-based decision-making to address the problems Ethiopian women face throughout the continuum of care. Furthermore, this study can inform maternal health champions by offering community perceptions, barriers, and facilitators working in the context of the Sidama region. Thus, this study aimed to explore community members and health care providers' perceptions of MHS, and barriers and facilitators of maternal health service utilization in the Northern Zone of the Sidama region, Ethiopia.

Methods

Study Area

The study was done in the Northern Zone of Sidama Region, Ethiopia. Sidama region was newly established on June 18, 2020, and is the second-smallest regional state, following Harari by land size, and the fifth-largest populous in the country [32,33]. It is located in the southern part of Ethiopia and consists of four zones, namely, the Northern, Southern, Central, and Eastern zones, and one city administration [34]. Northern zone is located 273 km south of Addis Ababa. It has eight districts and two town administrations. There are 162 *kebeles* (smallest administrative units in Ethiopia) in the zone. Based on a report from Sidama Region Health Bureau, the zone has an overall population of 1.29 million. Women of reproductive age (WRA) are estimated to constitute 23.3% of the population. The zone has 144 health posts, 36 health centers, 1 general hospital and 4 primary hospitals. The zone's overall potential health service coverage by public health facilities (HFs) is 70% [35].

Study Design and Population

A phenomenological qualitative study was conducted from November 14-30, 2022, among community members and health care providers in the Northern Zone of Sidama Region, Ethiopia. We included all purposefully selected community members and health care providers who lived in the zone for at least 6 months. Midwives who worked for less than two years in the maternal and child health care case team were excluded due to their lack of experience and interaction with women and their inability to provide in-depth information. Besides, all WRA who were involved in the quantitative study conducted parallel with this qualitative study were excluded because their involvement in the quantitative study may predispose them to information bias.

Sample Size Determination

The sample size for this study was determined based on different recommendations. The sample size for in-depth interviews (IDIs) was determined according to the recommendation of Morse and Creswell for phenomenological studies (5 to 25 study respondents) [36]. Based on their recommendation, we decided to include 21 study respondents. We did, however, reach information saturation after interviewing 13 study participants. We did three further IDIs to ensure the true extent of information saturation. As a result, we finally enrolled 16 study participants. Also, the sample size for focus group discussion (FGD) was determined based on the recommendation (2-3 FGDs with every distinct group of participants with shared features) [37]. We planned to conduct three FGDs per group. We did, but information saturation was not attained until the third FDG per group. Thus, we finally included three FGDs per subgroup: women who gave birth in the 12 months preceding the study, community and religious leaders, and *kebele* leaders. A total of nine FGDs were conducted with 81 participants. In this study, we included nine participants in each FGD from the range of 6-12 recommended participants [37,38]. We included medium numbers of FGD participants to avoid too small or too large participants' effects [38]. If the groups are too small, the debate will be slow and frequently directed by one person, and the rich diversity will be lost. Again, if there are too many participants, huge groups are difficult to manage and limit each person's ability to share thoughts and observations. Furthermore, when individuals desire but are unable to express their experiences, group dynamics shift. This occurrence indicates that the group is too large. As a result, we included

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medium groups of participants, which are simpler to recruit and host, require less time and other resources, and are more comfortable for participants [37,38]. Similarly, the sample size for the key informant interview (KII) was determined based on the recommendation for phenomenological studies (5 to 25 study respondents) [39]. Based on their recommendation, we decided to include 19 study respondents. We did, however, reach information saturation after interviewing 12 study participants. We did three further KIIs to ensure the true amount of information saturation. As a result, we finally enrolled 15 study participants. We assured information saturation when the same concepts, ideas, and themes were repeated by respondents or no new concepts emerged from the questions.

Sampling Technique

We used a maximum variance sampling method to select eligible community members and health care providers. It is also known as heterogeneous sampling and is one type of purposive sampling method. It is used to capture a wider viewpoint or perspective from different groups of participants as much as possible or to search for variation in viewpoint [40]. Researchers use subjects, cases, organizations, and events that are assumed to be different from those that are more typical in nature to assure maximum variance. By looking at a subject from various perspectives, researchers can find significant common patterns that hold true across variants [40,41]. In this study, according to the routine administrative data received from the district health office, the *kebeles* were classified into better- and lower-performing strata in terms of MHSU to ensure variability. Besides, to maintain variability in participants, variability in socio-economic status, age, sex, education status, roles, and responsibility were considered during the selection procedure. From all *kebeles*, study respondents were recruited with the help of HEWs according to pre-defined selection criteria. The PI provided comprehensive information about the sampling procedure to HEWs. Based on the criteria, HEWs selected community members who lived in the *Kebeles* to participate in this study.

Definitions of Variables

Perceptions are an individual's or group's unique ways of looking at MHS and barriers and facilitators of MHSU by integrating experiences and memories in the process of comprehending [15].

Barriers are obstacles that prevent or block women from utilizing MHS, such as the HFs physical environment, health care providers (HCPs) attitude and technical ability, lack of privacy and confidentiality in HFs, long waiting times in HFs, traveling time to reach HFs, availability and accessibility of roads, and prompt transport service [15,29].

Facilitators are promoters that improve or increase the utilization of MHS by providing direct or indirect support, such as the availability and accessibility of HFs and skilled HCPs, essential drugs and supplies, and the knowledge and attitudes of mothers towards the existing services [42].

Mothers or women who were recently delivered are defined as women who gave birth in the last 12 months preceding the study.

Data Collection Procedures

Pretested interview guides were utilized to collect data and were adapted from previous similar studies [16–18,20,43–45]. The interview guides were initially prepared in English, translated into the *Sidaamu Afoo* (the main language spoken in the research setting) and then back to English to maintain ensure consistency and originality,. The forward and backward translations were carried out by two separate translators who were both English experts and fluent *Sidaamu Afoo* speakers. The translated interview guides were reviewed by the principle investigator (PI) and a third individual who were likewise fluent in both languages. Then, based on the assessment, inconsistencies or inaccuracies between the two versions, such as unclear meaning and wording, were addressed.

The PI trained the data collectors for one day before data collection on the importance of the study, data collection processes, aims, methodologies, and ethical considerations. Before data collection, the guides were pre-tested in the Hawela Tula district on participants having similar

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characteristics and mix as those who were involved in the actual study. The purpose of the pretesting was to detect ambiguities or deficiencies in the study tool. Thus, the important corrections were made based on the feedback after the pre-test.

Three public health experts with MPH degrees, hands-on experience in qualitative data collection, and fluent speakers of *Sidaamu Afoo* collected data using tape recorders. FGD and IDI data were collected using pretested interview guides at a suitable place in public areas, whereas KII data were collected at health facilities. Personal or phone contacts were made with all the key informants before the date of the interview to arrange the appropriate time for interviews. Some interviews were conducted after working hours in the interest of the service providers. Open-ended questions were used (see supporting information in S1 and S2 files). The open-ended questions were followed by additional probing questions based on the participants' responses. Then, additional probing questions were asked to help explore and capture their experiences and perceptions of obtaining MHS in detail. FGDs were utilized to explore evidence regarding the social context of MHSU and to produce group-level experiences and perceptions by encouraging active interaction. In-depth individual interviews were carried out with participants to scrutinize personal perceptions, some private experiences and issues, for example, delivery experience, issues that were raised at the time of FGD that require further probe, and to distinguish or identify chances for improving MHS.

The PI assured of the quality of the data by conducting consistent, thoughtful discussions with the data collectors. The discussions were conducted between the interview days to discuss the main results, improve the interview guides, and detect tactics that frequently increase the line of the probe, following the practice of growing design in the qualitative study. During the data collection, the study subjects were probed to clarify or elaborate on what they had supposed during the group discussions or interviews to check the accuracy and validity of the captured data and the meanings that the respondents intended or planned to attribute to it. The transcripts were read through several times, recording any information that was missed during the first readings. To facilitate quality assurance, a random sample of transcripts was validated against the recordings (A3 File).

Data Analysis Procedure

Following each interview, the data were examined by the data collectors and PI to improve interview guides and data quality. After finishing the data collection, the tape-recorded data were transcribed verbatim into the English language. The PI listened to the tape records and read over the transcripts many times to get a general sense of the transcripts and organize the data. Transcripts were exported to MAXQAD 2020 software for coding and analysis. The transcripts were coded after identifying some of the pre-existing codes from previous similar studies [16–18,20,43–45].

Both inductive and deductive coding methods were utilized. This was guided by pre-established initial codes (open coding) before actual data collection, discussion, and interview guides. Iteratively, over the course of reading the transcripts, all transcripts were successively categorized into one of the codes. Extra codes were added while reading the transcripts, categories, and sub-categories that have not been formally identified (inductive method). Then, all codes were further analyzed and aggregated into sub-themes and themes (the deductive axial coding approach). The data was used to construct the codes, categories, and themes. We reviewed coding three times when cleaning our themes, categories, and transcripts. The PI carried out line-by-line coding before creating the codebook manual. The PI then accurately coded all of the data. To answer the study question, potential themes were created by clustering categories and codes.

The data were analyzed using the thematic content analysis technique by MAXQAD 2020 software. We also utilized the manual analysis method to increase the trustworthiness of the data. We removed unnecessary and irrelevant texts from the *word cloud* before the analysis. The particular codes were exported from MAXQAD 2020 software to Microsoft Word and Excel to assist manual analysis. Data were triangulated from responses acquired from FGDs, IDIs, and KIIs to compare with answers from the various community groups and HCPs. Results from FGDs were triangulated using data from IDIs and KIIs. The concepts and categories that developed from discussions and interviews were confirmed by regularly connecting the emergent classes with the data obtained from the other

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categories of informants to increase the reliability of the data analysis method. Verbatim quotations were utilized to increase trustworthiness and validate the narrative or story with the respondents' own words. Reports of quotes for carefully chosen codes were produced in MAXQAD 2020 software using the code matrix browser. The themes and an arrangement of relationships between the themes were documented and reported. Results were described with the quotations, categories, and major themes constructed from the data. Finally, results were presented in narratives.

Results

Characteristics of Study Respondents

This study included 16 in-depth interviewees, 81 focus group discussants, and 15 key informant interviewees. The 5 IDIs were conducted with women who were recently delivered; 4 IDIs with WDTs; and 7 IDIs with religious and community leaders. Discussants in FGDs comprised 22 women who were recently delivered, 14 WDT leaders, 21 community and religious leaders, and 24 *kebeles* leaders. The mean age of focus group discussants was 38.92 years, ranging from 20 to 65 years. Most (76.5%) of the focus group discussants had primary education, but few had completed secondary education. The mean age of in-depth interviewees was 30.75 years, ranging from 20 to 39 years. Nine (56.3%) of the in-depth interviewees had primary education. The mean age of key informant interviewees was 27.26 years, ranging from 22 to 39 years. The majority of the key informant interviewees (53.3%) had bachelor's degree in the midwifery profession, and had served for a mean of 5 years as midwives.

Main Themes

We distinguished four main themes: practices related to MHS, perceptions of MHS, facilitators of MHSU, and barriers to the use of MHS. There were several categories under each theme (Table 1).

Table 1. Main themes and classes distinguished.

Themes	Categories
Practice of maternal health service	➢ Maternal health service utilization ➢ Frequency and timing of visit
Perceptions of maternal health service utilization	➢ Negative ➢ Positive
Barriers to maternal health service utilization	➢ Lack of awareness of antenatal benefits ➢ Distance from health facility ➢ Costs associated with MHS use ➢ Long waiting time ➢ Lack of road access to all-weather road ➢ Women being busy with household chores ➢ Short or fast on-set labour ➢ Lack of an antenatal visit ➢ Lack of a birth preparedness plan ➢ Non-dignified care ➢ Home delivery ➢ Lack of awareness of postnatal care service and schedule ➢ Socio-cultural beliefs ➢ Previous experience and fear of obstetric complications
Facilitators of maternal health service utilization	➢ Health extension workers and women's development teams. ➢ Pregnant women's forum

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Practices of MHS

Nowadays, the majority of mothers use ANC, HFD, child immunization, and modern contraceptive services. Participants stated that the situation of MHS has changed in the present time due to the presence of WDTs and HEWs in *kebeles*, *the* building of health facilities in their areas, the provision of health education by HEWs and health workers, and other similar initiatives and efforts. A community leader stated this: *"Previously, due to a lack of knowledge, mothers delivered at home, but now, due to the hard work of the WDTs, most mothers are giving birth at the health facilities."* **(FGD, 45-year-old community leader)**

Participants discussed the value and benefits of obtaining skilled care during pregnancy and labor. They agreed that pregnancy and labor carry the danger of complications as well as a mortality risk. However, neither the mother nor the infant receive proper PNC services. Mothers merely seek medical care after giving birth if they are ill; otherwise, they would wait until 45 days after giving birth to obtain or use family planning and immunization services. A WDTs member woman stated this: *"No, women will not go to health facilities before the 45th day after childbirth unless illness happens to them and their children in our area."* **(IDI, 26-year-old woman)**

The majority of pregnant mothers started ANC visits at 4 months or later, when women could be sure that their pregnancy would continue. One of the WDT members said, *"Mothers will not go there (to health facilities) before 4 months because their pregnancy isn't visible before that time."* **(IDI, 31-year-old woman).** Culturally, mothers did not think that one could know for sure whether their pregnancy would continue before four months. If the pregnancy were to be exposed during the earlier periods, it is thought that it might result in miscarriage. Therefore, admitting to being pregnant is taboo. *"In our area, there is a culture where mothers aren't considered properly pregnant before 4 months. They want to hide their pregnancy by considering it blood or water in their uterus and holding it in secret."* **(KII, 39-year-old midwife)**

The majority of respondents mentioned that women usually visit health facilities two or three times and are unable to complete the recommended number of visits. A key informant said, *"Women from the better family will come four times. However, the majority of them will come two times after several efforts or pushes following the first contacts."* **(KII, 32-year-old midwife)**

Perception of and Experience with MHS

The majority of respondents appreciated and were satisfied with the MHS provided by HCPs in health posts, health centers, and hospitals. They also indicated that HCPs were compassionate, caring, and respectful during service provision time at health facilities. A woman who was recently delivered mother stated that *"I think our community is satisfied with the services provided by health professionals in health facilities. They give good care for women during delivery by showing a good face and giving compassionate services, and they assess the health of women and newborn children until the discharge of women."* **(IDI, 25-year-old currently delivered mother).** Also, participants perceived or assured that they had confidence in the services of health facilities. A woman who was recently delivered said, *"We depend on health facilities MHS care and feel that no death will happen there."* **(FGD, 41-year-old currently delivered mother).** Another woman who was recently delivered mother confirmed, *"Yes, I have confidence in skilled birth attendants' because they have good skills and abilities regarding their work."* **(IDI, 33-year-old currently delivered mother)**

However, few participants reported having negative perceptions of HCPs, delays in receiving care and services, delays in being referred to higher levels of care, specifically while receiving intrapartum care in a health center, and a lack of ambulance service after childbirth. Also, some study respondents reported having had negative experiences with HCPs, health facilities, and ambulance drivers, such as abusive care, a lack of respect, and discriminatory care based on socioeconomic level and place of residence. A currently delivered mother who was a participant in FGD stated that some

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HCPs attitudes and behaviors toward mothers are negative. *"I confronted the professionals many times; they have a big attitude problem."* **(FGD, 35-year-old currently delivered mother).** A WDT leader said, *"Sometimes when we go for ANC service, they are ill-tempered and not welcoming at all. We only go there for the service, not for living, so they have to improve this behavior, and they must provide the service to the mother with sympathy."* **(FGD, 35-year-old woman).** A WDT leader stated, *"The cleanliness of the health center is very poor, and the mosquitoes in the delivery room are causing a problem. Several mothers were discharged early after childbirth due to this problem."* **(FGD, 30-year-old woman)**

Participants noted that women encountered delays in receiving care at the HFs and being referred to the next level of care, despite the high perceived need for MHSU. Speaking with the study respondents revealed that they had negative interactions with the HCPs as a result of the delay in service delivery. A religious leader said, ***"When we take laboring mothers to the health center, they (the HCPs) come late. They always inform us that a long time remains for mothers to deliver, but most mothers deliver immediately. Due to this delay, most mothers developed complications."*** **(FGD, 60 years old).** A woman who was recently delivered said, ***"The problem I identified is that the HCPs did not refer the labouring mother who needed referral timely; they say we have to watch her for hours."*** **(FGD, 30-year-old woman)**

Barriers to Maternal Health Service Utilization

The main barriers to ANC use were lack of awareness of the benefits of ANC, distance from health facility, costs associated with ANC use, long waiting time, lack of access to road particularly in the rainy season, poor knowledge of ANC, and women being busy with different household chores. Distance, costs associated with HFD use, fast on-set labor, lack of an ANC visit, lack of a birth preparedness plan, and non-dignified care were the main barriers to HFD use. The main barriers to PNC use were home delivery, lack of awareness of PNC service and schedule, and socio-cultural beliefs.

Lack of awareness of ANC benefits: Participants reported that women who lack awareness of the benefits of ANC are less likely to use the service and might not complete the recommended number of visits. A key informant said, ***"The major reasons are that some women do not know the benefits of ANC service and lack awareness of the negative impacts of not using ANC service."*** **(KII, a 25-year-old midwife)**

Distance from health facility: Most mothers were unable to use MHS due to the distance of their homes from health facilities. *"...we have 'Honso or 'Botano' village, which is found beyond the river in a hard-to-reach area. The pregnant woman who carries a fetus in her abdomen from that place cannot access ANC service due to the fact that it requires energy to cross the river and walk the long distance."* **(FGD, 35-year-old community leader)**. A WDTs member mentioned her experience: *"Distance was the factor for me to deliver at home my last child because my labor was short on-set and I did not have enough time to go to a health facility."* **(IDI, 35 years old)**

Costs associated with MHS use: **Though the study participants acknowledged and valued the free MHS, there are great** costs associated with MHS use **that deter women from seeking MHS. Opportunities costs comprise transport costs, medical costs, materials costs, and food costs for attendees. A key informant affirmed this:** *"There are several women who remain at home without using the ANC services due to* direct and indirect costs associated with ANC use. *Thus, poverty is the main barrier to hindering ANC service use."* (KII, 32-year-old midwife). All participants noted that ambulances would not offer round-trip packages during intrapartum care, and the community is suffering from the lack of transportation fees after discharge from the health facility. A woman who was recently delivered said, "*I gave birth to twins in a public hospital after several referral processes. They did not provide me with ambulance service from the hospital to my home after discharge. I used public transportation to come back to my home."* **(FGD, 27-year-old women)**

Women being busy with different household chores: **Participants reported that women who were busy with different household chores were less likely to use the ANC service and might not complete the recommended number of visits.** A key informant said, ***"They have family responsibilities. For example, those women who have three or more children are highly busy***

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preparing food, caring for younger children, fetching water, keeping animals, etc. Most times, due to these reasons, they will not go to HF or become late for an ANC visit." (KII, 32-year-old midwife)

Long waiting time: Mothers avoid using MHS due to the long waiting time to obtain services in health facilities. A key informant affirmed this: *"The long waiting time in the ANC room is due to a shortage of HCPs…they (the mothers who went for ANC) will return home without obtaining service if that health professional is attending a delivery. Those women will not come again to the health facility for ANC visits due to these reasons."* **(KII, 32-year-old midwife)**

Lack of road access: **Most mothers are unable to use MHS due to the lack of access to road, particularly in the rainy season.** A key informant said, ***"I have worked in a kebele that doesn't have access to a road, and they (women) may give birth on the road before reaching the health facility."*** (KII, a 30-year-old midwife)

Fast **on-set** labour: **Most study respondents mentioned that short or fast on-set labour was a barrier that hindered the majority of women from using HFD, even if they planned to give birth in health facilities. A WDTs member said, "*Mostly, mothers will give birth at home due to fast on-set labour.*"** (IDI, 35-year-old woman)

Lack of an ANC visit: Lack of ANC visits during the antepartum period was a major barrier mentioned by the participants as a reason for not using skilled care in the interpartum period. A key informant said, ***"Mothers who don't use ANC visits are more likely to deliver at home."*** **(KII, 26-year-old midwife)**

Lack of a birth preparedness plan: Most respondents commonly stated the lack of a birth preparedness plan by mothers as a reason for not using HFD. A key informant affirmed this: "*Mostly, the mothers who lack a birth preparedness plan will give birth at home in our locality."* **(KII, 26-year-old midwife)**

Non-dignified care: Lack of privacy during the interpartum period was a major barrier mentioned by the participants as a reason for not using skilled HFD at health facilities. A community leader who is an FDG discussant said, *"The mothers prefer to give birth at home because they want to maintain their privacy."* **(FGD, 32-year-old community leader)**

Home delivery: The uptake of MHS across the continuum is impacted by the use of prenatal and interpartum care. Most women were discouraged from continuing to use skilled PNC from the health facility after their home delivery. Participants said that women do not get the proper PNC service after home delivery. A WDTs leader affirmed this: *"Mothers miss PNC service if they don't deliver at a facility"* **(IDI, 26-year-old woman)**

Lack of awareness of PNC service and schedule: Most respondents mentioned that women are not obtaining PNC services after childbirth unless they encounter health problems or their children are sick before the 45th day of childbirth. They claimed that PNC service is needed merely if the women experience complications or illness. *"Women will go to health facilities 45 days after delivery to get family planning for themselves and immunizations for their children. She doesn't go before the 45th day after delivery."* **(IDI, 33-year-old currently delivered woman)**. Most respondents didn't know about PNC services, and they mentioned PNC as just equating with postpartum family planning and immunization services that women obtained at or after 45 days of childbirth. A key informant said, *"If the mother gave birth in our health facility, we discharge them between six and twenty-four hours later due to a shortage of beds and rooms. However, they will come again on the 45th day for child vaccination and family planning services unless they have experienced health problems."* **(KII, 32-years-old midwife)**

Socio-cultural beliefs: Some participants mentioned that women are not using the PNC service after childbirth due to socio-cultural barriers. A key informant said, *"Old people will prevent mothers from going outside the home due to socio-cultural reasons and attitudinal problems. Most people think the women will be exposed to 'mich' or' buda' (evil eye) if they go outside their home during the postpartum period."* **(KII, a 25-year-old midwife)**

Facilitators of Maternal Health Service Utilization

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Previous experience and fear of obstetric complications, health extension workers and women's development teams, and pregnant women's forum were main **f**acilitators of maternal health service utilization.

Previous experience and fear of obstetric complications: Most participants stated that previous experience and fear of obstetric complications and suspicion of their recurrence influenced mothers to use MHS. **A key informant said, "*Most times, there is an event that motivates them to come here. For instance, I think in 2014 E.C. (2021/22), a woman was delayed at home for long times after labour started due to a prophetic command to give birth at home and developed serious complications. They brought the woman here, and we referred her to a nearby primary hospital. Then, the nearby primary hospital also referred her to a referral hospital, but the woman died there. If they hear about this kind of event, all of them will come to a health facility for institutional delivery care.*" (KII, 32-year-old midwife)**

Health extension workers and women's development teams: Participants mentioned that HCPs, particularly HEWs, motivated the women to use MHS. The WDTs motivated laboring mothers by reporting to HEWs and dialing for ambulance services. Also, they showed that the WDTs transported the mother to an ambulance arrival point or health facilities and back to their houses, specifically in situations when there was a lack of transport services. A woman who was recently delivered mother said, *"WDTs and HEWs are motivating us to get services from health facilities."* **(FGD, 27-year-old woman)**. A key informant stated this: **"***They (WDTs) bring a laboring mother to our facility. Also, they call ambulances when there is a need for them. They also report to us whenever home delivery occurs. I think they are helping with service delivery in our area."* **(KII, 24-year-old midwife)**

Presence of a pregnant women's forum: Most participants stated that the pregnant women's forum motivated the women to use MHS at health facilities. A key informant affirmed this: *"Most times, the pregnant women's forum motivates them to attend health facility deliveries."* **(KII, 32-year-old midwife)**

Discussion

We explored the perceptions of maternal health service, and barriers and facilitators of maternal health service use in the Sidama region of southern Ethiopia. Results indicate that communities have positive perceptions and good practices about skilled ANC and HFD, but the majority of mothers do not use care during the postpartum period. Some participants experienced negative interactions with HCPs, health facilities, and ambulance drivers, such as abusive care, a lack of respect, and discriminatory care based on socioeconomic level and place of residence; delays in receiving care and services; delays in being referred to higher levels of care, specifically while receiving intrapartum care in health centers; and a lack of ambulance service after childbirth.

The main barriers to ANC use were lack of awareness of ANC benefits, distance from health facility, costs associated with ANC use, long waiting time, lack of road access, and women being busy with different household chores. Distance from health facility, costs associated with HFD use, fast on-set labour, lack of an ANC visit, lack of a birth preparedness plan, and non-dignified care were the main barriers to HFD use. The main barriers to PNC use were home delivery, lack of awareness of PNC service and schedule, and socio-cultural beliefs. The main identified facilitators of MHS use were previous experience and fear of obstetric complications, health extension workers and women's development teams, and pregnant women's forum.

Most of the community members have a positive perception and good practice of skilled ANC and HFD, but a significant number of women dropped out of receiving skilled care during the postpartum period, which is in agreement with the 2019 Mini-EDHS report, where about three-fourths, half, and one-third of women had at least one ANC visit, HFD care, and PNC service, respectively [12]. Also, the Mini-EDHS showed that there was a two- and five-fold increase in skilled ANC and HFD but an insignificant change in PNC in the last decade, that is, between 2011 and 2019 [6,12]. The results clearly show that the MHSU has improved due to different initiatives and efforts. First, the government of Ethiopia reorganized community engagement in 2011, and the WDA strategy was created to further improve the health extension program. The WDAs members assist

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HEWs in spreading important messages about skilled MHS via social events, including coffee ceremonies, peer-to-peer marketing, and other neighborhood events. They detect pregnant mothers and mothers with term pregnancies in their neighborhoods and connect them with HEWs for early ANC and HFD services [43]. Second, training and deployment of HEWs and HCPs, particularly midwives in rural settings; expansion of health facilities; introduction of ambulance service; and the provision of MHS free of charge [26] have helped improve MHSU. However, in the current study area, the presence of socio-cultural beliefs among residents that movement outside the home may expose women to evil spirits may decrease PNC utilization by restricting the travel of women after giving birth. Researchers argued that women from rural communities in Ethiopia had been challenged to use PNC due to socio-cultural beliefs. This result agreed with the studies done in the

Lack of awareness of the benefits of ANC was a barrier to ANC service use and being unable to complete the recommended number of visits. Similar results were reported from the studies conducted in the Sidama region of south Ethiopia [16], Indonesia [18], and south Sudan [17]. The likely explanation is that women who are aware of the ANC service tend to have a good understanding of ODS, a positive attitude, health-seeking behaviours, and the confidence to use the service.

The long distances to health facilities and lack of road access were the main barriers to ANC and HFD use. The inaccessibility of MHS due to a lack of road access and distance remain significant barriers for obtaining MHS in Ethiopia, regardless of the provision of free MHS, free ambulance service from houses to facilities, and expansion of primary healthcare to assure universal access to primary healthcare [26]. This result agreed with studies done in the Tigray region of Ethiopia [28], Indonesia [18], South Sudan [17], and Thailand [20].

This study also identified costs associated with MHS use as barriers to ANC and HFD use. Researchers argued that women from resource-constrained communities had been challenged to pay for healthcare, and these costs posed economic barriers to utilizing MHS [21,22]. Therefore, due to a lack of economic access, the mothers may not visit ANC at all, decrease the number of recommended ANC follow-ups, or even start ANC in late pregnancy and give birth at home. Due to increased out-of-pocket expenses for transport, home return transportation costs, medical care, and food, the utilization of services is hampered [18]. Through the provision of community-based outreach services, HF expansion, health insurance packages, and voucher programs, there is still a need to reach more women for quality care [46].

Women's being busy with different household chores was another main barrier that deters mothers from using ANC services. Ethiopian women share a huge household work load in general and a very high one in rural settings in particular [47]. Traditional male roles in our societies restrict male participation in household chores [48,49]. For example, while women become increasingly involved in financially providing for their families, their male spouses aren't increasing their participation in child care and domestic activities [49]. This upholds the cultural standard of the mother being primarily accountable for all domestic activities in addition to her outside work [48]. Despite the fact that men and women in this country realize that males are capable of performing traditionally female jobs, customs remain in place that men shouldn't take part in household tasks [49]. This exhausts and overwhelms most women of childbearing age**, which hampers their ability to go to HF at all or become late for an ANC visit [50].** This result agreed with studies done in Hossaina town in Ethiopia [27] and South Sudan [17].

This study found that long waiting times in ANC rooms are a barrier to using ANC services. The long waiting time at the health facility may cause direct and indirect costs for women. The direct costs comprise money for food, transport, and time spent. The indirect costs comprise the responsibility left uncharged for each ANC visit appointment day. These responsibilities comprise childcare, formal or informal service, and other house jobs. While some mothers rely on friends and family to help with childcare and domestic chores, others are forced to choose between those duties and their ANC visit. The long wait times raise these costs and make it more difficult for mothers to attend ANC. A similar result was documented in a study in southern Mozambique [23].

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This study found that fast on-set labor is the main barrier to HFD use. The main obstacle to HFD was found to be labour's on-set unpredictability. The majority of labours were reported to start at night, as was to be expected, during the time of transportation inaccessibility to the HF, "forcing" the mothers to give birth at home. Most previous studies [17–20] that reported long distance from a health facility and the cost of transportation as barriers to HFD have not made a clear relationship between these factors and the prediction of labour on-set, leading to narrowly focused interventions that merely address the costs of transportation. Our findings point to the necessity of making transportation arrangements in advance for the HFD use during unpredictable labour on-set. A birth plan that incorporates transportation planning is currently one of the ANC interventions. Even for women who attend ANC, this does not fully alleviate the problem. HCPs are using women's memories of their most recent period to estimate the expected date of delivery (EDD), which is frequently incorrect and results in incorrect EDD forecasts. Women who had previously had ANC claimed that their deliveries had taken place much earlier or later than the proposed dates that had been given to them by the HF. Therefore, finding better methods of estimating EDD could be a way to influence or intervene in HFD use.

The current study identified that the lack of an ANC visit is the main barrier to HFD use. This result is in line with other studies that reported a lack of ANC visits as a strong barrier to HFD use [14,44]. Numerous studies have found an association between ANC visits and health facility delivery, but these studies haven't explored in depth why this is so. Most studies have been cross-sectional in design and heavily depend on information from house surveys [14,30,31]. Our study extends the results of these earlier studies by revealing the reasons for the low attendance we observed and its effects on subsequent visits. Our findings can help explain this association in light of the fear of HCPs criticism for skipping ANC. This implies that health professionals' attitudes need to change. At any point in their maternity periods, the women should be allowed to access the HF care system without being shamed or turned away for not having visited earlier. Because of the experience shared by women FGD discussants, after negative interactions with HCPs due to the skip of ANC, they then decide to deliver at home and influence others to do so. Thus, it is also necessary to change the negative attitude of HCPs toward women who choose to use MHS at any stage of the continuum of care.

The result of this study highlighted the lack of a birth preparedness plan as a major barrier to HFD use. One explanation for this could be that well-prepared women have a better understanding of ODS and effective communication skills with HCPs. As a result, they might have made all the necessary preparations in order to use HFD services effectively and efficiently. According to other studies, women who are knowledgeable about ODS are more likely to be prepared for childbirth, be aware of potential difficulties, and frequently utilize skilled care from HFs [51–53].

The results of this study noted non-dignified or disrespectful care as a main barrier to women's use of HFD. This has an echo effect that hampers women from using interapartum care in health facilities. Earlier studies conducted in Ethiopia [54] and elsewhere [55] revealed that mothers experienced different types of maltreatment in health facilities. According to the Ethiopian GTP, patient-centered, compassionate, and respectful care is a top priority in efforts to increase service quality and equity. The Ethiopian government has been exerting efforts at all health facilities to possess caring, respectful, and compassionate health professionals [24]. It is an approach centered on the individual based on principles of ethics (including respect for women's autonomy, dignity, feelings, choices, and preferences) and respect for human rights that promotes practices that recognize women's needs [56]. Despite the fact that several factors contribute to low MHSU, it is becoming clear that provider abuse is among the reasons that many women are unable to seek MHS [57]. Several studies have found that women's views of how they will be treated at healthcare facilities may have a significant impact on where they want to get MHS, particularly in childbirth [58,59].

This study found that home delivery is a barrier to using PNC services, which is in agreement with a study done in rural Kenya [44]. This finding can be partly explained by the evidence that HFD is one of the vital linkages between women and HCPs. The women who have HFD would have a high probability of receiving adequate counseling and information on ODS and the importance of

skilled PNC. Also, mothers who seek health care throughout their pregnancy and childbirth might be more likely to seek health care during their postpartum period. Moreover, the mothers who regularly visit HFs for ANC and HF use have earlier indicated their acceptance of the health system.

Lack of awareness of the PNC service and schedule among community members, particularly women, about the availability and benefits of the service is another main barrier to its uptake. Participants felt that PNC was only necessary in the event of ill health and complained that they were never told to go back for PNC after delivery. Similar to this, it has been noted elsewhere [18] that community members do not comprehend the significance of MHS services, particularly in the postpartum period. This demonstrates how the continuum of care for women's antepartum and intrapartum encounters with the health system is seriously lacking in Ethiopia, where maternal health services are fragmented [60]. For Ethiopia, where almost half of the expected three million yearly birth cohorts occur at home, a mixed-method service provision modality that includes both home and facility-based PNC services and home visits by HCPs or community workers may be beneficial [12].

This study found that socio-cultural beliefs are a barrier to using PNC services. Community members do not allow mothers who gave birth and their newborns to leave home in the postnatal period due to the belief that leaving home in this period would expose them to evil spirits. Due to these beliefs, they fail to use PNC from HFs. Similar findings were documented in studies conducted in different settings [45,61].

Regardless of the barriers, this study documented facilitators of MHS in the study area. These enablers should be considered to increase MHS service provision. These comprise previous experience and fear of obstetric complications, the efforts of HEWs and WDTs, and a pregnant women's forum.

Previous experience and fear of obstetric complications motivated women to use MHS, which is in line with previous studies findings from Debre Markos town [29] in Ethiopia and Nepal [62]. The most plausible explanation is that being exposed to complications raises women's and families' fears of having the same problem again. Furthermore, women who have observed major warning signals are more likely to have perceptions of vulnerability and the severity of dangers, which directly lead to increased MHSU. Another factor could be women's understanding of ODS, which could be a strong drive for the mother to seek MHSU as soon as difficulties arise.

HEWs and WDTs motivated women to use MHS, which agrees with other studies that revealed the HEWs and WDTs structure at the community level strongly contributed toward MHSU [63–65]. The possible justification could be that women are expected to actively participate in the one-to-five networks below the WDTs at the community level. By doing this, they can quickly access primary healthcare facilities for information, care, and support. Another important motivator for MHSU is the pregnant women's forum. The reasons would be that mothers who participated in the pregnant women forum had more focused counseling, good knowledge of ODS, skills in birth planning, an ambulance driver's phone number, good communications with HEWs and HCPs, a positive attitude, and good health-seeking behaviours.

Limitations of the Study

There were some limitations to this study. First, because the data were collected from study participants' self-report, the findings might be susceptible to recall and social desirability biases. Study subjects might be unable to recall most of the barriers and facilitators of MHSU, which may affect their link with MHSU. There is the risk of purposely misquoting personally related perceptions, barriers, facilitators, women's attitudes towards MHS, perceived quality of care, and interaction with HCPs and HFs (social desirability bias). Thus, the degree of these factors might have been overvalued or undervalued, and as such, the link between these factors and MHSU might have been overestimated or underestimated. A selection bias might be likely for this study due to the fact that community members were selected by HEWs. The HEWs might invite interested study participants to participate in the study. As a result, the respondents' might have more favorable perceptions and

good practices toward MHSU. Another issue is that qualitative results are subjective and influenced by the individual's surroundings, making conclusions and comparisons difficult.

Despite these limitations, our study has several strengths. Data triangulation was used to assure the data's trustworthiness; the data were collected from several sources, including women who were recently delivered, WDT leaders, community and religious leaders, *kebeles* leaders, and health care providers. Also, as methodological triangulation, this study used IDIs, KIIs, and FGDs to collect data on the same topic being examined. To assure the data's credibility, we designed the open-ended queries to be clear, non-leading, and impartial in order to avoid bias throughout the research procedure. The data was collected by data collectors with prior experience in qualitative data collection, and we retained neutrality during the data collection process so as not to influence the respondents' answers. To minimize bias and data misinterpretation, we asked and probed the respondent to explain or elaborate on what they had said during the group discussions or interviews; we also reviewed the results and meanings of the data. Besides, data collection procedures, notes of any field decisions, analysis notes, raw data, and data interpretation were thoroughly documented to assure data comfirmability. Finally, we comprised more individuals with different viewpoints to get a more complete picture of MHSU.

Conclusions

Rural women in southern Ethiopia still experience several challenges while using MHS. The health care provision structure at different levels does not comprehensively address mothers' desires due to disrespectful and unfriendly HCPs, abusive care, discriminatory care based on socioeconomic level and place of residence, long waiting times, a lack of urgent timely referral, high direct and indirect costs associated with MHS use, distance from health facility, a lack of road access, and transportation arrangements during unpredictable labour. Any intervention programs should address these barriers that continued to impede several mothers from using MHS. Also, specific intervention strategies should be designed for women with poor awareness of MHS, mothers who are busy with different domestic chores and mothers who missed using MHS earlier. Furthermore, PNC is poorly executed in the study area. Therefore, there is a serious necessity to implement and strengthen the provision of quality PNC services based on World Health Organization guidelines and country directives. Moreover, there is an urgent need to educate communities to circumvent socio-cultural beliefs that hinder use postpartum health care.

List of Abbreviations

ANC: Antenatal care; EDD: Expected Date of Delivery; EDHS: Ethiopian Demographic and Health Survey; HCPs: Health Care Providers; FGD: Focus Group Discussion; GTP: Growth and Transformation Plan; H.F: Health Facilities; HEW: Health Extension Worker; HFD: Health Facility Delivery; IDI: In-depth-interviews; KKI: Key Informant Interviews; LMIC: Low and Middle-Income Countries; MHS: Maternal Health Service; MHSU: Maternal Health Service Utilization; MMR: Maternal Mortality Ratio; MPH: Masters of Public Health; Obstetric Danger Signs; PI: Principal Investigator; PNC: Postnatal Care; SSA: Sub-Saharan Africa; WDA: Women Development Army; WDT: Women Development Team; WRA: Women of Reproductive Age.

Authors' contributions: AY: Conceptualized, ensured data curation, did the formal analysis, and wrote the manuscript. WTS: Ensured data curation and wrote the manuscript. FGG: Ensured data curation and wrote the manuscript. AA: Conceptualized, ensured data curation, did the formal analysis, and wrote the manuscript. All authors read and approved the final manuscript.

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Ethics approval and consent to participate: All the study procedures in this study have been done in accordance with the ethical standards laid down in the Declaration of Helsinki. The Institutional Review Board (IRB) of the College of Medicine and Health Sciences of Hawassa University provided ethical approval under reference number IRB/076/15. The Sidama Region Health Bureau, district health offices, and *kebele* administrators provided

letters of support. All community members and HCPs provided written informed consent prior to data collection. Before signing informed written consent, study participants were informed about the purpose of the study, data collection techniques, privacy, voluntary participation, potential benefits, and dangers. Written informed consent was obtained from all study participants before starting the data collection. The confidentiality of the data was ensured during data collection and storage.

Consent for publication: Not applicable

Availability of data and materials: All data generated or analyzed during this study are included in this published article and its supplementary information files.

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