

Maternal Health Literacy and Its Determinants among Pregnant Women in Ethiopia: A Scoping Review of Published and Grey Literature

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ABSTRACT

Background and Objectives: Maternal health literacy (MHL) is a woman's ability to access, understand, interpret and use health information to make informed decisions during pregnancy, childbirth, and the postpartum period that benefit both mother and child. It is a critical determinant of maternal and neonatal health outcomes. However, evidence on maternal health literacy and its determinants in Ethiopia remains scarce and fragmented. Hence, mapping existing evidence can inform policymakers and health practitioners, providing a foundation for designing targeted interventions to improve maternal and neonatal health outcomes. To map existing evidence on maternal health literacy and determinant factors among pregnant women in Ethiopia.

Materials and Methods: This scoping review was developed in accordance with the Arksey and O'Malley (2005) framework and the PRISMA-ScR guidelines. Relevant studies were retrieved from peer-reviewed journals, theses, and institutional reports. Data were extracted for study characteristics, measurement tools, maternal health literacy levels, and determinants. Findings were synthesized descriptively and thematically.

Results: In this scoping review, the proportion of adequate maternal health literacy levels was ranged from 25.5% to 55.5%. Three broad themes of determinants were developed: socio-demographic (Socio-demographic factors such as educational attainment, age at first pregnancy, residence, and travel time), health service related (Having antenatal and postnatal care, as well as exposure to counseling during facility-based deliveries), and community or structural factors (Enrollment in Community Based Health Insurance (CBHI) and the presence and accessibility of Health Extension Workers (HEWs) were equally important).

Conclusion: Maternal health literacy among Ethiopian women remains low and influenced by a combination of socio-demographic, health service related, and community or structural factors. Enhancing MHL requires comprehensive, context-sensitive strategies that improve education, increase access to maternal health services, and strengthen community-based programs. Addressing these multidimensional determinants will empower women to make informed health decisions, ultimately contributing to better maternal and child health outcomes across Ethiopia.

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Keywords: Maternal Health Literacy; Determinant Factors; Pregnant Women; Ethiopia; Scoping Review.

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Introduction

Maternal and neonatal health continues to be a major public health priority globally, particularly in low- and middle-income countries where adverse maternal and perinatal outcomes, such as preterm birth, low birth weight, stillbirth, and neonatal morbidity, remain prevalent (1, 2). Although the global maternal mortality ratio (MMR) decreased by approximately 40% between 2000 and 2023 from 328 to 197 deaths per 100,000 live births, the burden remains disproportionately high in the African region, which accounts for over two-thirds of maternal deaths (3). Despite a 40% decline in maternal mortality, from 727 to 442 deaths per 100 000 live births between 2000 and 2023, the African region still accounts for 70% of global maternal deaths (4). This might be due to lack of access to health care, lack of knowledge of danger signs, lack of birth preparedness and complication readiness plans, lack of access to reliable health information and quality maternal health services (5, 6).

Maternal health literacy (MHL) is a woman's ability to access, understand, interpret and use health information to make informed decisions during pregnancy, childbirth, and the postpartum period that benefit both mother and child (7). Adequate MHL is strongly associated with improved maternal and neonatal outcomes, including increased utilization of antenatal care services, skilled birth attendance, and timely adoption of preventive health behaviors (8-11). Conversely, pregnant women with limited health literacy often struggle to comprehend available healthcare services

and may delay in seeking medical attention for themselves or their newborns (12, 13).

Beyond immediate health impacts, maternal health literacy equips women with the knowledge and awareness necessary to identify pregnancy complications and risk factors, manage health challenges, and make informed decisions that benefit both mother and child. It also encourages preventive behaviors, such as taking folic acid and iron supplements, monitoring weight gain, and adhering to other health-promoting practices (11, 14, 15). Inadequate maternal health literacy has been identified as a hidden risk factor contributing to poor understanding of health messages and information, ultimately resulting in negative health outcomes (16).

Ethiopia has seen a significant decline in its maternal mortality ratio, dropping from 1,329 in 2000 to 195 in 2023 (17). Despite this progress, maternal mortality remains a major concern, driven by a mix of socio-demographic, health system, and cultural challenges. Although initiatives such as community-based health insurance (CBHI), the health extension program, and model household strategies have been introduced, these efforts have not fully addressed the underlying factors contributing to maternal deaths (18, 19). Evidence on maternal health literacy (MHL) and its determinants in Ethiopia remains limited and fragmented, limiting the ability of policymakers and practitioners to design effective maternal and neonatal health interventions. A scoping review is therefore warranted to comprehensively map existing studies, clarify key determinants, and identify gaps in the current evidence base. By synthesizing diverse research findings, this review aims to

provide actionable insights that can inform policy development, guide program design, and shape future research priorities.

Research Questions

The main research question for this scoping review was: What is the current evidence on maternal health literacy and its determinants among pregnant women in Ethiopia? To address this overarching question, four specific questions were considered:

1. What is the reported level of maternal health literacy among women in Ethiopia?
2. What determinants are associated with maternal health literacy within the Ethiopian context?
3. What tools, methods, or indicators have been used to assess maternal health literacy in Ethiopian studies?
4. What research gaps exist in the literature on maternal health literacy and its determinants in Ethiopia?

Materials and Methods

Review Approach

The methodology of this scoping review was developed in accordance with the Arksey and O'Malley (2005) framework and the PRISMA-ScR guidelines (20). Due to the limited and fragmented evidence on maternal health literacy and its determinants in Ethiopia, a scoping review was the most appropriate approach to comprehensively synthesize existing studies and inform future research, policy, and program design. All items outlined in the PRISMA-ScR checklist were fully addressed (Supplementary File 1). The PRISMA-ScR flow diagram detailing the study selection process, from initial identification to final inclusion, is presented in the Results section.

Search date

This scoping review's initial search was started on July 01, 2025, and the review includes all studies published in Ethiopia up to July 15, 2025.

Eligibility Criteria

Studies were included if they investigate maternal health literacy and its determinant factors. No restrictions were applied regarding the time of data collection or the year of publication. Studies conducted in any Ethiopian region, encompassing both rural and urban settings, were considered. Eligible sources included published peer-reviewed articles, theses, and institutional reports. Only studies written in English were included, with no restriction on the year of publication.

Exclusion criteria

Studies were excluded if they did not focus on maternal health literacy or its determinants, studies conducted outside Ethiopia, studies involving non-pregnant populations, opinion pieces, commentaries, editorials, and publications in languages other than English.

Search Strategy

The primary author (AY) executed the literature search, with a focus on studies published exclusively in English. A comprehensive search was performed across multiple electronic databases and grey literature sources to identify relevant studies. Databases searched included PubMed, Google Scholar, EMBASE, Scopus and African Journals Online (AJOL). Grey literature was retrieved from university repositories and institutional websites. The key search terms and Boolean operators used were: ("maternal health literacy" OR "health literacy") AND ("pregnant women" OR "mothers") AND

("determinants" OR "factors") AND ("Ethiopia") (supplementary file 2).

Study selection procedure

Screening

The initial identification of studies was conducted using search terms and filters across relevant databases and sources. Duplicate records were systematically removed after exporting the identified studies to Microsoft Excel for screening and management. Five authors (TE, CM, AA, BF, and TB) independently screened the studies based on their titles and abstracts, adhering strictly to the predefined inclusion criteria. Following this screening process, studies were classified into one of three categories: included, excluded, or undetermined.

Quality assessment

Two authors (AY and AA) assessed the methodological quality, risk of bias, and validity of the included studies using the Joanna Briggs Institute (JBI) checklist for analytical cross-sectional studies (Supplementary file 3). Any disagreements between the two authors regarding risk of bias or study quality were resolved through discussion and consultation with the remaining authors (CM, BF, and TB) (supplementary file 3).

Data Extraction and Synthesis

The data were carefully extracted by two authors (AY and TE) using a structured data extraction template. A summary table was created to display key study characteristics, including author names, publication year, study design, setting, sample size, maternal health literacy measurement tools, reported levels of MHL and Determinants or associated factors. Extracted data were organized in a tabular format and analyzed descriptively and

thematically. For the thematic analysis of determinants, both authors independently reviewed the extracted factors, coded them, and discussed discrepancies until consensus was reached. Determinants were then grouped into three broad themes; socio-demographic, health service, and behavioral factors based on commonly reported categories in the literature and their relevance to maternal health literacy frameworks. Findings were presented narratively, supported by summary tables to illustrate study characteristics and key outcomes, allowing for clear synthesis and comparison across studies (Table 1).

Results

Study Characteristics

After looking through the primary health and medical electronic databases along with other relevant sources, and after a thorough evaluation, five studies have been included in this scoping review (Figure 1). All the studies employed cross-sectional study design and were conducted across geographically diverse areas, including Oromia, Amhara, and Southern Ethiopia. The sample sizes of the included studies ranged from 327 (21) to 635 (22) participants. Regarding measurement tools used to assess maternal health literacy level; two different measurement tools were used across the studies. The Home-Based Life-Saving Skills (HBLSS) evaluation tool was the most widely used instrument, used in four studies: studies conducted in West Gojam and southern Gondar zone, Amhara (21), Kombolcha District, East Hararghe, Oromia (23), Southern Ethiopia (22) and Ambo Town, West Shoa, Oromia(24). The remaining study conducted in Ilu Abba Boor Zone, Oromia Region, used the European Health Literacy

Questionnaire. The variation in measurement approaches highlights the lack of a standardized tool for assessing maternal health literacy in the Ethiopian context, making direct comparisons between studies challenging.

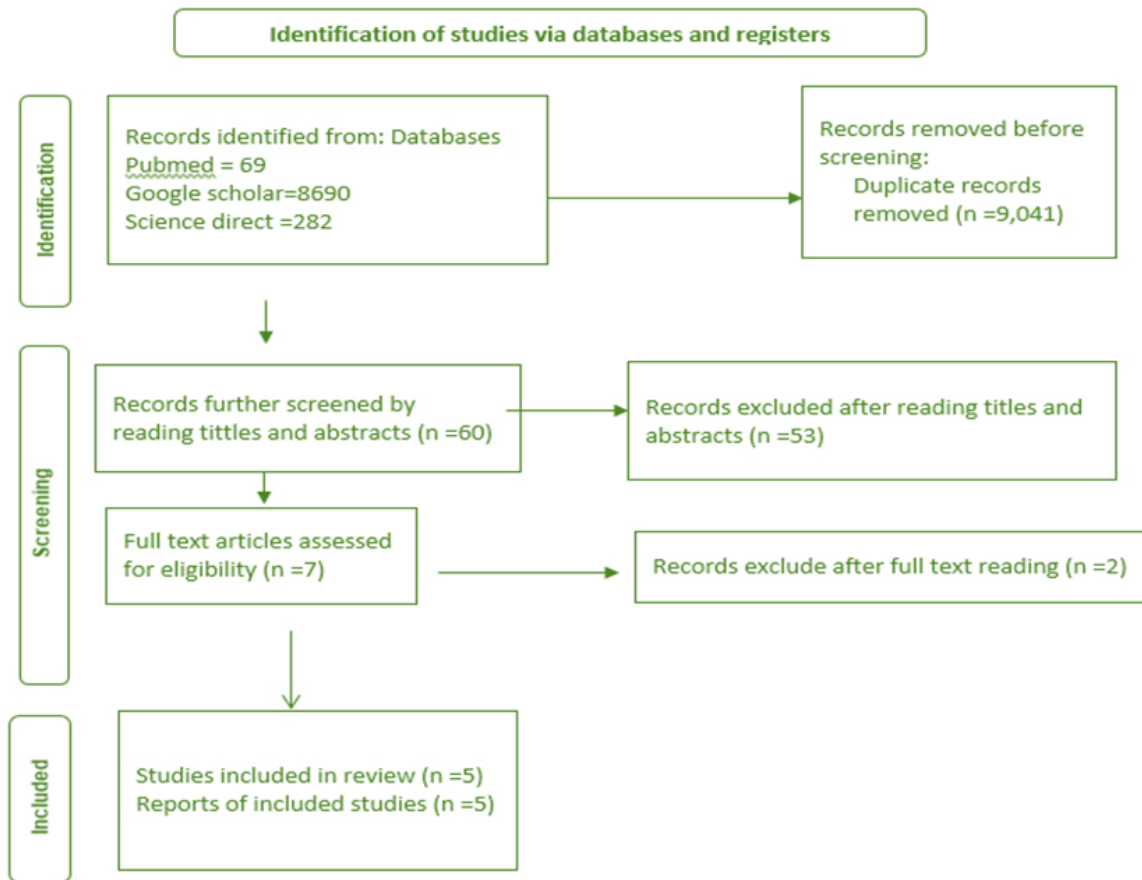


Figure 1. PRISMA flow chart showing the included searches for scoping review on maternal Health Literacy and its Determinants in Ethiopia

In this scoping review, the level of maternal health literacy varied from 25.5% (24) to 55.5% (23). The lowest MHL level was reported in study conducted in Ambo Town, West Shoa Zone, Oromia, only 25.5% of participants demonstrated adequate maternal health literacy (24). In contrast, the highest level was reported in study conducted in Kombolcha District, East Hararghe, Oromia, where 55.5% of mothers exhibited adequate literacy (23). In the review, studies used HBLSS evaluation tool

reported higher literacy levels, while the study using the European Health Literacy Questionnaire for assessment of maternal health literacy found a much lower literacy level. These differences may reflect variations in measurement emphasis, as the HBLSS tool assesses practical, home-based maternal and newborn care skills, while the European Health Literacy Questionnaire focuses on comprehension, access, and critical evaluation of health information (25).

Table 1. Description of the included studies to map existing evidence on maternal health literacy among pregnant women in Ethiopia

Author	Study year	Region	Design	Sample Size	MHL Measurement	MHL Level	Key Determinants
Jiregna et al(21).	December 2021 and January 2022	Ilu Abba Boor, Oromia	Facility-based cross-sectional	411	European health literacy questionnaire	28.7%	Urban residence, mode of delivery, ANC follow-up
Finina Abebe(17)	2022	West Gojam and southern Gondar zone. Amhara	Facility-based cross-sectional	327	Home Based Life Saving Skills evaluation tool	54.1%	CBHI enrollment, HEW availability,
Shemshedin Yuya(18)	2024	Kombolcha District, East Hararghe, Oromia	Community-based cross-sectional study	420	Home Based Life-Saving Skills evaluation tool	55.5%	CBHI enrollment, HEW availability, Model Household participation
Aklilu Habte(19)	2021	Southern Ethiopia	Facility-based cross-sectional	635	Home Based Life-Saving Skills evaluation tool	53.5%	Education, gravidity, ANC visits, CBHI enrollment, Model Household
Takele Misgana (20)	2022	Ambo Town, West Shoa, Oromia	Institutional-based cross-sectional	443	Home Based Life-Saving Skills evaluation tool	25.5%	Age at first pregnancy, PNC attendance, education, travel time to health facility

Determinants of Maternal Health Literacy

Socio-Demographic Factors

Socio-demographic characteristics were consistently identified as significant determinants of maternal health literacy. Educational level was associated with higher MHL levels, as observed in two studies conducted in Southern Ethiopia (11) and Ambo Town, West Shoa, Oromia (24). Study participants with higher education were better able to access, interpret, and utilize health information. Maternal age at first pregnancy also influenced MHL, with older mothers exhibiting better maternal health

literacy, potentially due to greater life and maternal experience. Another socio-demographic factor which influences maternal health literacy was participants' residence. Urban residence was positively associated with MHL in study conducted in Ilu Abba Boor, Oromia (26) suggesting that access to information, education, and healthcare services enhances health literacy. On the other hand, longer travel time to health facilities was found to negatively affect MHL in study conducted in Ambo Town, West Shoa, and Oromia (24). This is possible due to the fact that geographical barriers limit opportunities for health education and service engagement (27).

Health Service Related Factors

Health service related factors were also found to be key determinants of maternal health literacy. Women who attended antenatal care (ANC) and postnatal care (PNC) services exhibited higher literacy levels, as reported by three studies conducted in Ilu Abba Boor, Oromia (26), Southern Ethiopia (22) and Ambo Town, West Shoa, Oromia (24). The mode of delivery was similarly linked to MHL, with those delivering in health facilities demonstrating higher maternal health literacy, possibly due to the counseling and education received during delivery. Gravity was also associated with improved literacy in the study by Ambo Town, West Shoa, Oromia (24), as women with more pregnancies may have had greater exposure to health information (28). Two studies conducted in Southern Ethiopia (22) and Kombolcha District, East Hararghe, Oromia (23) identified that participation in the Model Household initiative was found to enhance MHL, emphasizing the role of community-level education in improving maternal knowledge.

Community and Structural Factors

Community and structural factors also played a substantial role in shaping MHL. Community-Based Health Insurance (CBHI) enrollment was a consistent determinant across four studies West Gojam and southern Gondar zone, Amhara (21), Kombolcha District, East Hararghe, Oromia (23), Southern Ethiopia (22) and Ambo Town, West Shoa, Oromia (24) indicating that insured women, who are more likely to utilize healthcare services and to have higher literacy levels. Similarly, two studies conducted in West Gojam and southern Gondar zone, Amhara (21) and Kombolcha

District, East Hararghe, Oromia (21) reported that the presence of Health Extension Workers (HEWs) contributed positively to MHL by improving access to health education and ongoing community engagement

Discussion

Summary of evidence

This scoping review mapped the available literature on maternal health literacy in Ethiopia. It also provided a general overview of what factors contribute to maternal health literacy in Ethiopia. The findings of this scoping review revealed that maternal health literacy among Ethiopian women is low with health literacy levels ranging between 25.5% (24) and 55.5% (23). The lowest levels were observed in Ambo Town, West Shoa (24) and Ilu Abba Boor, Oromia, while higher literacy rates were found in Kombolcha District, East Hararghe (23), and Southern Ethiopia. The variation in reported MHL levels appears to reflect differences in both measurement tools and contextual factors. Studies employing the Home-Based Life-Saving Skills (HBLSS) evaluation tool generally reported higher literacy levels compared to the European Health Literacy Questionnaire, likely due to the HBLSS tool's focus on practical maternal care competencies that may be more readily observable and teachable in community or facility settings.

Regarding determinant factors of maternal health literacy, three broad categories (themes) of determinants were developed: socio-demographic, health service related, and community or structural factors. Socio-demographic factors such as educational status (22), age at first pregnancy (24), residence (26), and travel time to health facilities (24) were frequently identified as

significant predictors. Women with higher educational levels, older maternal age, and urban residence demonstrated greater maternal health literacy, likely because of improved access to information and better interaction with health systems. Conversely, those living farther from health facilities or with limited education had lower literacy, underscoring the role of both educational and geographic access in shaping maternal knowledge.

Health service related factors were also critical in determining MHL. Having antenatal and postnatal care (22, 26), as well as exposure to counseling during facility-based deliveries, enhanced women's understanding of maternal and newborn health practices. This finding is supported by studies conducted in Zambia (29). Participation in programs such as the Model Household initiative further reinforced maternal health literacy, as these programs offer structured health education and promote active engagement with the health system. These findings emphasize the importance of continuous, service-linked education in empowering mothers to make informed health decisions.

Community and structural factors further influenced MHL outcomes. Enrollment in Community Based Health Insurance (CBHI) consistently improved literacy (21-23), suggesting that insured women are more likely to utilize services and receive reliable health information. The presence and accessibility of Health Extension Workers (HEWs) (21, 23) were equally important, as they serve as key sources of maternal and child health information at the household level. Communities with strong HEW engagement demonstrated higher literacy

levels, reflecting the critical role of grassroots health communication and support systems.

Implications for Policy and Practice

The finding of this scoping review underlines the need for integrated interventions to enhance maternal health literacy in Ethiopia. Policymakers should incorporate structured health literacy promotion into existing antenatal care and postnatal care programs through targeted counseling and education. Strengthening the Health Extension Program and improving facility accessibility particularly in rural areas can facilitate information delivery and service utilization. Expanding CBHI enrollment and Model Household initiatives will further enhance women's engagement with the health system and foster community empowerment. Tailored interventions should also focus on less-educated women, first-time mothers, and those living in remote areas to bridge socio-demographic gaps in literacy.

Research Gaps and Future Directions

Despite increasing attention to MHL in Ethiopia, several research gaps persist. There is no standardized, validated national tool for assessing maternal health literacy, limiting comparability across studies. All existing research is cross-sectional, preventing causal inference and the evaluation of intervention effectiveness. In addition, evidence is also geographically limited, with few studies from pastoralist and remote communities. Furthermore, limited attention has been given to the link between MHL and maternal or neonatal health outcomes. Therefore future research should focus on tool standardization, longitudinal or interventional studies, and context-specific

qualitative explorations to guide policy and practice.

Study Limitations and Strengths: This study employs a scoping review approach to map existing evidence on maternal health literacy and its determinant factors among pregnant women in Ethiopia, offering valuable insights for healthcare policymakers, researchers, and practitioners. However, this scoping review is subject to several limitations. The inclusion of only five studies two peer-reviewed and three grey literature sources reflects the scarcity of research on MHL in Ethiopia. As most studies were cross-sectional, causal relationships between determinants and MHL cannot be inferred. Despite these limitations, the inclusion of grey literature broadens the evidence base and provides a valuable overview of emerging work in this area.

Conclusions

Maternal health literacy among Ethiopian women remains low and influenced by a combination of socio-demographic, health service related, and community or structural factors. Enhancing MHL requires comprehensive, context-sensitive strategies that improve education, increase access to maternal health services, and strengthen community-based programs. Addressing these multidimensional determinants will empower women to make informed health decisions, ultimately contributing to better maternal and child health outcomes across Ethiopia.

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Consent for publication: Not applicable

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