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Factors Influencing Access to Health Services and Choice to Give Birth at Home: A Scoping Review

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ABSTRACT

Background: The increase in the number of home births highlights the importance of understanding the factors that influence access to health services for childbirth.

Purpose: The aim of this scoping review was to identify the best evidence on factors influencing access to health services and choice to give birth at home.

Methods: The database was searched from 2019 to 2024 from various databases, including PubMed, Science Direct, and Wiley. As well as using search engines such as Google Scholar and Research Rabbit and selecting them using Mendeley's help. Critical appraisal and data charts were adopted from the JBI checklist, including cross-sectional, case-control, and qualitative exploratory JBI. From the 1598 articles identified, only eleven met the inclusion criteria.

Results: The results of this review identified three themes, including factors influencing access to health services for home birth, the impact of limitations and the main barriers faced by mothers.

Conclusion: Access to health services for mothers who give birth at home is limited by various factors, including but not limited to geography, economy, education, socio-culture, and occupation, among others. Improving access to maternal health services should focus on more affordable facilities, better maternal and family health education, and socio-cultural changes that support delivery in health facilities. As a result, these barriers reduce the utilization of health facilities, which increases the risk of complications and maternal mortality.

Keywords: access to health services, developing countries, home birth, mother

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BACKGROUND

Access to maternal health services is critical to reducing maternal and neonatal mortality, especially in developing countries. The World Health Organization (WHO) recommends that safe childbirth be performed in a health facility with trained health personnel to reduce life-threatening complications for both mother and baby. However, in fact, many mothers in developing countries choose to give birth at home without the assistance of a health professional. Mothers giving birth in a health facility is considered one of the best strategies to prevent maternal mortality and morbidity and improve newborn health. However, most births in low-income countries occur outside of health facilities. One tragic consequence of this underutilization is that 830 maternal deaths per day occur due to complications during pregnancy and childbirth. Approximately 99% of these deaths occur in developing countries. The mortality ratio in 2015 was in developing countries, the maternal rate was 239 per 100,000 live births, while in developed countries it was only 12 per 100,000 live births. Approximately 303,000 women died during pregnancy (WHO, 2021).

Maternal health conditions in developing countries through data from the World Health Organization (WHO) show that childbirth problems cause around 99% of maternal deaths in developing countries. This shows that many pregnant women do not have adequate access to health services. One of the main factors that prevents mothers from giving birth in hospitals or health centers is the long distance from health facilities, especially in rural areas. The results of research from (Nigatu et al., 2019) also identified factors that influence mothers to give birth at home, namely the distance of the mother's house from health facilities is the most important indicator of home birth. Mothers in rural areas are four times more likely to choose to give birth at home than mothers in urban areas.

Maternal and infant health can be affected by lack of access to health services. Higher maternal and infant deaths can be prevented if mothers are not prepared for complications of childbirth such as postpartum hemorrhage, eclampsia, or infection. Therefore, it is important to create effective policy strategies to improve access and utilization of maternal health services by understanding how access to health services correlates with the likelihood of home births. The results of the study from (Worku et al., 2023) showed that 15.9% of mothers reported experiencing pregnancy-related complications during their pregnancy. The most common complications were vaginal bleeding and severe headaches. This study also found that many mothers who experienced pregnancy complications tended to give birth at home, indicating a relationship between pregnancy complications and place of delivery.

OBJECTIVE

The aim of this scoping review was to identify the best evidence on factors influencing mothers to access health services, the impact of limited access to health services on home birth and the main barriers faced by mothers.

METHODS

This review examines the relationship between access to health services and home birth. This review uses a scoping review type, a form of systematic knowledge synthesis that applies a systematic approach to mapping the evidence on a topic, and identifying key concepts, theories, sources and knowledge gaps. Although scoping reviews have been widely conducted, there is a need to improve their methodological quality and presentation. This document introduces the PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) guidelines and their explanation (Tricco et al., 2018). This scoping review method adopts the approach developed by Arksey &

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O'Malley (2005). The steps followed in this scoping review include: (1) identifying the research question, (2) identifying relevant studies, (3) selecting appropriate studies, (4) mapping data from selected studies, and (5) systematically organizing, summarizing and reporting the results.

(1) **Identifying Research Questions**

Scoping review questions based on the PICO framework table 1 "What are the barriers to accessing health services that contribute to home births in developing countries?" Certain keywords are listed in table 2.

Table 1. PICO Framework

P (Population)	**I (Intervention)**	**C (Comparison)**	**O (Outcome)**
Mother in labor	Healthcare access	barriers healthcare access	Home birth

Literature selection was conducted using PubMed, ScienceDirect, and Wiley databases. As well as using search engines such as Google Scholar and Research Rabbit. Article searches using keywords used were limited to Labor childbirth AND healthcare access OR maternal healthcare access AND home birth OR unassisted birth AND developing country* OR low and middle income country*. Specific keywords were used in each database.

Table 2. Keywords

Variables	**Indonesian**
Women delivery healthcare access Home birth	Mother labor access to health services Home birth

Table 3. Inclusion and Exclusion Criteria

The inclusion and exclusion criteria used in this review are as follows:

No.	**Component**	**Discussion**
1.	Inclusion Criteria	1. Original articles Published in the last 5 years (2019-2024). 2. Indonesian, Portuguese or English language articles 3. Article full text
2.	Exclusion Criteria	Articles with review type, articles containing comments

(2) **Identifying Relevant Studies**

After conducting a literature search using predetermined keywords in several databases and manual search engines, the researcher identified 1598 articles. The articles were then screened to select those relevant to the review topic, and after the screening process, 11 articles were found to meet the established criteria. At this stage, using the Prima flow diagram (2020) to illustrate the process of systematic article selection.

PRISMA 2020 flow diagram for updated systematic reviews which included searches of databases, registers and other sources

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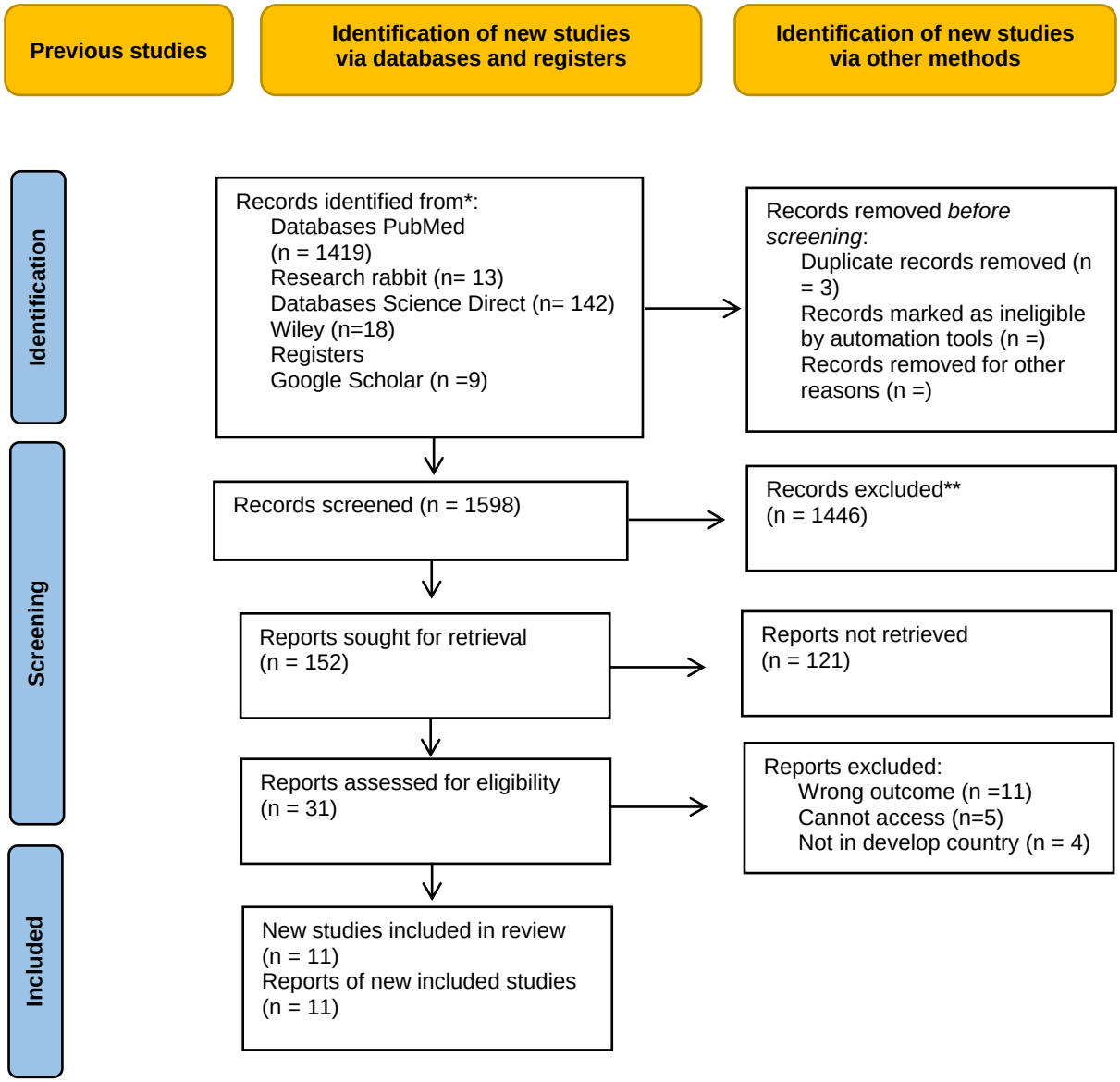

(3) Choosing the Right Lesson

The extracted data included data relevant to the topic of the relationship between access to health services and home births in developing countries, the instruments used, the country of origin of the study, the objectives of the study, the study design, participants, samples, and the results of the study (shown in Table 4).

Table 3. Data Extraction

Study ID/Title/Purpose/Design/Country/Author Name and Year of Publication	Inclusion and exclusion criteria	Sampling Method	Sample Characteristics	Data collection and analysis	Results

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A1/The social determinants of health facility delivery in Ghana/ The aim was to examine the social determinants influencing the use of health care facilities among women of reproductive age/cross sectional/Africa/Dankwah et al/2019.	Inclusion criteria were women of reproductive age (15 to 49 years)	systematic sampling	The research sample was 4,293 women of childbearing age (15 to 49 years old).	The data for this study were collected from the 2014 Ghana Demographic and Health Survey (GDHS) dataset, which was used after obtaining permission from MEASURE DHS. The analysis involved the use of univariable and multivariable logistic regression models.	The study findings showed that only 72% of deaths occurred in health facilities in Ghana. The model used showed that time of death, financial status, education, religion, parity, and needs associated with delivering in a health facility were all significant. Compared with women in rural areas, those living in rural areas had a higher chance of dying in a health facility (Adjusted Odds Ratio

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					[AOR] = 2.21; 95% Confidence Interval [CI] = 1.53 – 3.19). Compared with poor mothers, middle-class and wealthy mothers were more likely to deliver in a health facility
A2/Factors determining choice of place of delivery: analytical cross-sectional study of mothers in Accorded town, Eritrea/ This aim is to understand the factors influencing the choice of delivery location/cross sectional/Africa/Gebregziabher et al/2019	The inclusion criteria in this study were mothers who met certain eligibility requirements,	Census sampling	Total participants 282 mothers	Data collection was carried out by interviewing mothers using a structured closed questionnaire. Data were analyzed using bivariate and multivariate logistic regression to determine the relationshi	The results showed that the delivery rate at the Accorded health facility was 82.3%. Almost all mothers (96.1%) had at least one antenatal care (ANC) visit during their last pregnancy, with

				p between place of delivery and various explanatory variables.	the majority of mothers (59.7%) visiting the ANC clinic in the second trimester. In addition, several factors influencing the choice of delivery location were also found, such as the education level of the husband and mother and previous pregnancy complications.
A3/Why some women who attend focused antenatal care fail to deliver in health facilities: a qualitative study of women's perspectives from slums of Addis Ababa, Ethiopia/The aim was to explore why some mothers attending focused antenatal care fail to	Inclusion criteria were mothers who had attended focused antenatal care at a health facility.	purposive sampling	Total respondents are 20 mothers	The method of data collection was through in-depth interviews conducted by the researcher	The results of the study showed four main themes related to mothers' decisions to give birth at

deliver in health facilities/qualitative exploratory/Sendo et al/2020			and research assistants, using an interview guide covering open-ended topics in English and Amharic. Data analysis used thematic analysis and was categorized into meaningful units which were then manually coded by the principal researcher.	home rather than in a health facility. These themes are: The perceived benefits of giving birth at home include support from partners, family and neighbors, as well as the comfort and warmth of a home environment. Knowledge deficit: There is a lack of knowledge about delivery services in health facilities. Poor access to health facilities: mothers experience

					difficulties in accessing health facilities. Inadequate resources : There is a lack of resources in Health facilities.
A4/Determinants of Home Delivery among Mothers in Abobo District, Gambella Region, Ethiopia: A Case Control Study/Aim is to identify determinants of home birth/case control study/Mitiku et al/2020	Inclusion criteria were mothers who were permanent residents and had given birth in the last year before the study was conducted.	random sampling	Total respondents were 264, consisting of 88 cases and 176 controls.	The data collection method used face-to-face interview techniques by conducting house-to-house visits. The questionnaire used was adapted from various literature and the Ethiopian Demographic and Health Survey. Data analysis used Epi-Data software version 3.1 for data cleaning, coding,	The results of the study showed that several significant factors were associated with home birth. These factors include: Education: Mothers with no formal education were more likely to give birth at home (AOR: 5.07; 95% CI: 2.18-11.50) compared to mothers

			and entry. Analysis was performed using Statistical Package for Social Science (SPSS) version 20. To determine the association between dependent and independent variables,	with secondary education or more. Knowledge of obstetric complications: Mothers with poor knowledge of obstetric complications also showed significant association with home delivery (AOR: 3.83; 95% CI: 1.98-7.40). Attitudes towards maternity services: Negative attitudes towards maternity services were associated with increased likelihood of home birth (AOR: 3.25;

					95% CI: 1.70-6.19). Household wealth index: Mothers from households with poor wealth index were more likely to give birth at home (AOR: 4.55; 95% CI: 2.01-10.31). Antenatal visits: Not attending antenatal visits was also associated with home birth (AOR: 3.29; 95% CI: 1.63-6.63)
A5/Spatial variations of women's home delivery after antenatal care visits at lay Gayint District, Northwest Ethiopia/Aim to assess spatial variation and factors associated with home delivery after ANC visit/cross sectional/Nigatu	Inclusion criteria were mothers who had given birth in the last 12	random sampling	Total respondents were 528 mothers.	The data collection method used a structured questionnaire that had been previously	The results of the study showed that there was a relationship between

et al/2019	months before the study period and had made one or more ANC visits.		tested and administered by the interviewer. Data analysis was performed by entering, editing, and cleaning data using EpiInfo version 7, then exported to SPSS version 20 for further statistical analysis.	various factors and place of delivery. Mothers living in rural areas had an odds ratio (OR) of 7.2 (4.6, 11.4) for giving birth at home compared to mothers in urban areas. In addition, the distance from the health facility and the health worker's home also had an effect, with mothers living further from the health facility having a higher OR for giving birth at home.

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A6/Determinants of Home Delivery Among Women in Rural Pastoralist Community of Hamar District, Southern Ethiopia: A Case–Control Study/Aim to assess determinants of home delivery in a rural pastoralist community in Hamar District/case control study/Wondimu et al/2020	Inclusion criteria were all mothers who gave birth in the year preceding the survey.	Systematic sampling	The total respondents included 99 cases (mothers who gave birth at home) and 193 controls (mothers who gave birth at health facilities).	The data collection method was through face-to-face interviews using structured questionnaires adapted from other studies. Data analysis was carried out by checking the completeness of the data, then the data was coded, entered, cleaned, and analyzed using the Statistical Package for Social Science (SPSS) Version 20.	The results of the study showed that there were various factors that influenced the decision of where to give birth. Younger mothers and those who had better knowledge of pregnancy danger signs tended to prefer giving birth in a health facility rather than at home. In addition, the decision to give birth at home was also influenced by cultural factors and rituals

					related to childbirth .
A7/Status of Home Delivery and Its Associated Factors among Women Who Gave Birth within the Last 12 Months in East Badawacho District, Hadiya Zone, Southern Ethiopia/Aim to analyze whether preference for home birth is a predictor for home birth and to understand the reasons behind this preference/cross sectional/Delibo et al/2020	Inclusion criteria were mothers who had given birth in the last 12 months and were under 35 years of age.	random sampling	Total respondents 531 mothers	The data collection method uses a combination of quantitative and qualitative methods. Quantitative data were collected through questionnaires while qualitative data were obtained through focus group discussions (FGD) with participants selected using purposive sampling techniques . Data analysis was carried out by manually checking the completen	The results of the study showed that there was a relationship between the preference for home birth and the fact that many mothers chose to give birth at home. The study revealed that despite efforts to increase births in health facilities, the preference for home birth remained high. Factors influencing this decision included trust in

				ess and consistency of the data, then the data was entered into EpiData and exported to SPSS.	health workers, previous experience, and cultural factors. Further analysis showed that the preference for home birth was an important predictor of home birth. Reasons Behind Home Birth Preference: Issues related to ambulance services, Lack of awareness about maternal health, Negative experiences with healthcare providers Problems related to health facilities.
A8/Place of Delivery among Antenatal Clinic	Inclusion criteria	convenient sampling	Total respondent	The data collection	The results

Attendees at a Rural Community in North-Western Nigeria/Objectives to assess the proportion of home births and factors that prevent pregnant women from utilizing other health facilities as their preferred place of birth, despite having accessed antenatal care (ANC) services/cross sectional/ Gombe et al/2020	were pregnant women who had registered for antenatal care (ANC), attended postnatal clinics and immunization clinics, and had a history of previous vaginal delivery.		s 310 mothers	method is a questionnaire administered by an interviewer with open and closed questions. Data analysis was carried out by entering data into an Excel 2018 spreadsheet and then analyzing it using IBM SPSS 2016 version 20.	showed that out of a total of 310 respondents, 183 (59.0%) gave birth at home. This study also identified several factors that influenced the choice of place of delivery, including the education status of the mother and husband, the husband's occupation, parity, and the number of previous antenatal visits.
A9/Traditional birth attendants' roles and homebirth choices in Ethiopia: A qualitative study/Aims to identify reasons for home birth and to gain insights into the	Inclusion criteria involved selecting key informants from	purposive sampling	The total respondents included 4 traditional birth attendants,	The data collection method used in this study was a semi-	The results of this study are presented under three

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current roles and practices of traditional birth attendants (TBAs) along with their relationship with the formal health system from the perspective of mothers, midwives, health educators/qualitative exploratory/ Gurara et al/2020	maternal and newborn care service providers from health centers, health educators from health posts, mothers, and traditional birth attendants from the community.	14 midwives, 5 health counselors, and 6 pregnant women, so that the total was 29 respondents.	structured interview with an open-ended question guide. Data analysis, data is arranged according to predetermined themes and categorized based on relevant themes, then presented in narrative form.	main themes, each with a reason for choosing home birth: Cultural acceptability of care: Women are afraid of the presence of foreign medical personnel. Some health facilities are far away and transportation costs are considered unaffordable. The role of decision making in seeking care: Traditional birth attendants (TBAs) play a role in the decision-making process	

					to seek skilled care from health facilities. Relationship between TBAs and health facilities: There has been a change in the formal partnership between TBAs and health facilities, where currently TBAs are not allowed to assist with home births and do not have good working relationships with health facilities.
A10/The role of traditional birth attendants and problem of integration with health facilities in remote rural community of West Omo Zone 2021: exploratory	Inclusion criteria included individuals who were expected	purposive sampling	The total respondents consisted of 6 birth attendants, 18 pregnant women, 6	Data collection methods in this study include in-depth	The results showed that birth attendants used herbal

qualitative study/The aim of this study was to explore the role of traditional birth attendants during pregnancy, delivery and the postpartum period and their integration with health professionals in a remote rural community. /qualitative exploratory/ Kassie et al/2022	to have rich information for the purposes of the study.		health professionals, and 4 community or religious leaders, for a total of 32 respondents.	interviews and focus group discussions (FGD). Data analysis was conducted using thematic analysis based on inductive analysis in accordance with the objectives of the study. Data collected from interviews and FGDs were transcribed verbatim and then analyzed.	remedies to treat nausea and vomiting, reduce pain during labor, and increase the desire of pregnant women to push. However, they faced challenges such as lack of incentives, lack of logistics, and lack of training. All study participants emphasized the importance of TBA training in maternal and child health in rural communities. However, there was a lack of integratio

					n between TBA and the formal health system, and the need for TBA training was recognized by health professionals to reduce feto-maternal mortality.
A11/Complication experience during pregnancy and place of delivery among pregnant women: a cross-sectional study/The aim of this study was to determine the relationship between complications experienced during the third trimester of pregnancy and place of delivery/cross sectional/Worku et al/2023	Inclusion criteria were pregnant women in their third trimester who were selected for no less than six months and were willing to be visited by data collectors and supervisors after delivery.	Cluster sampling	Total respondents were 624 pregnant women, determined by sample size calculations for cohort studies.	The data collection method was carried out through face-to-face interviews from house to house by trained data collectors. Data analysis was performed using SPSS version 22.	The results showed that 15.9% of women reported experiencing pregnancy-related complications during their last pregnancy, and 46.90% of participants delivered at home. In addition, vaginal

		bleeding and severe headache were identified as the most common complications faced by mothers. In multivariate analysis, women who did not experience vaginal bleeding were found to be five times more likely to have a favorable outcome (AOR 5.28, CI; 1.79-15.56) compared to those who did.

Critical Assessment

Critical appraisal of a scientific article is an evaluation process that aims to assess the quality of a research article. In this review, researchers used an evaluation tool developed by the Joana Briggs Institute (JBI) to evaluate quantitative and qualitative research. The selection of the JBI evaluation tool was based on the type of research that the tool was suitable for. Researchers classified the value of the article based on the overall score obtained from the critical appraisal according to the guidelines provided by JBI. Detailed information on the results of the critical appraisal can be found in the table below.

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Table 4. Critical Appraisal Cross Sectional

No	Question items	Articles code					
		A1	A2	A5	A7	A8	A11
1.	Were the criteria for inclusion in the sample clearly defined?	3	3	3	3	3	3
2.	Were the study subjects and the setting described in detail?	3	3	3	3	3	3
3.	Was the exposure measured in a valid and reliable way?	3	3	3	3	3	3
4.	Were objective, standard criteria used for measurement of the condition?	3	3	3	3	3	3
5.	Were confounding factors identified?	3	3	3	3	3	3
6.	Were strategies to deal with confounding factors stated?	3	3	3	3	3	3
7.	Were the outcomes measured in a valid and reliable way?	3	3	3	2	2	2
8.	Was appropriate statistical analysis used?	3	3	3	3	3	3
	Score	24/A	24/A	24/A	23/A	23/A	23/A

Table 5. JBI Critical Appraisal Checklist Qualitative Research

No	Question items	Articles code		
		A3	A9	A10
1.	Is there congruity between the stated philosophical perspective and the research methodology?	3	3	3
2.	Is there congruity between the research methodology and the research question or objectives?	3	3	3
3.	Is there congruity between the research methodology and the methods used to collect data?	3	3	3
4.	Is there congruity between the research methodology and the representation and analysis of data?	3	3	3
5.	Is there congruity between the research methodology and the interpretation of results?	3	3	3
6	Is there a statement locating the researcher culturally or theoretically?	3	3	3
7.	Is the influence of the researcher on the research, and vice- versa, addressed?	3	3	3
8.	Are participants, and their voices, adequately represented?	3	3	3
9.	Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate	3	3	3

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	body?				
10.	Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	3	3	3	
	Score	30/A	30/A	30/A	

Table 6. JBI Critical Appraisal Case Control Study

No	Question items	Articles	Code
		A4	A6
1.	Were the groups comparable other than the presence of disease in cases or the absence of disease in controls?	3	3
2	Were cases and controls matched appropriately?	3	3
3	Were the same criteria used for identification of cases and controls?	3	3
4	Was exposure measured in a standard, valid and reliable way?	2	3
5	Was exposure measured in the same way for cases and controls?	3	3
6	Were confounding factors identified?	2	3
7	Were strategies to deal with confounding factors stated?	3	2
8	Were outcomes assessed in a standard, valid and reliable way for cases and controls?	3	3
9	Was the exposure period of interest long enough to be meaningful?	3	2
10	Was appropriate statistical analysis used?	3	3
	Score	28/A	28/A

RESULTS

Of the 1598 articles identified, only eleven met the criteria. These articles were written in English and published between 2019 and 2024. These eleven articles share several characteristics, such as year of publication, country of origin, and research methods used.

Table 7. Year Classification

No	Publication Year	Number of Articles
1	2019	3
2	2020	6
3	2021	0
4	2022	1
5	2023	1
6	2024	0
Total		11

Based on the table above, the reviewed articles are from 2019 to 2024. The details are: 3 articles in 2019, 6 articles in 2020, 1 article in 2022 and 1 article in 2023.

Table 8. Country Classification

No	Country	Number of Articles
1	Ghana	1
2	Eritrea	1
3	Ethiopia	6
4	Norway	1

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5	Nigeria	1
6	Omo Zone	1
Total		11

Based on the table above, the reviewed articles came from 6 countries. The details are: 1 article from Ghana, 1 article from Eritrea, 6 articles from Ethiopia, 1 article from Norway, 1 article from Nigeria and 1 article from Omo Zone.

Table 9. Classification of Research Design

No	Design	Number of Articles
1	Cross Sectional	6
2	Qualitative Study	3
3	Case Control Study	2
Total		11

Based on the table above, the reviewed articles consist of 4 types of research methods. The details are: 6 cross-sectional articles, 3 Qualitative Study articles and 2 Case Control Study articles.

Theme Analysis

Table 10. Determination of themes and subthemes

He	**Subtheme**	**Article**
Factors influencing access to health services	1. Demographic Factors	A2, A3, A4, A5, A8, A9
	2. Economic Factors	A1, A3, A4, A9,
	3. Education Factor	A1, A2, A3, A5, A6, A7, A8
	4. Socio-Cultural Factors	A1, A3, A4, A6, A7, A9
	5. Job factors	A8
The impact of limited access to health services	1. Impact of complications	A3, A10 A11
The main obstacles faced by mothers	1. Pregnancy complications 2. Attitude 3. decision	A2, A4, A7, A9

DISCUSSION

Factors influencing access to health services for mothers who give birth at home

Demographic Factors

Factors identified in the study (A2, A3, A4, A5, A8, A9) as demographic factors influencing access to health services, (A2) The results of the study showed that health service access factors, including distance to health facilities and quality of care, influenced the choice of delivery location. Transportation problems were also a reason frequently mentioned by mothers who gave birth at home, with 91.5% of mothers reporting not having their own means of transportation. Study (A3) results showed that service access factors, such as long distance to health facilities and poor road conditions, reduced access to health services. Some

participants expressed difficulty in reaching health facilities, especially at night, and lack of planning for emergencies and complications were also barriers to the use of facility-based delivery services. Study (A4) results showed that service access factors that influenced home delivery were antenatal care (ANC) visits. Mothers who did not attend ANC visits were more likely to give birth at home. Study (A5, A9) The results of the study on factors of access to health services showed that the distance to health facilities Mothers who live further from health facilities tend to prefer to give birth at home, difficulty in accessing transportation is also a factor that influences the decision to give birth at home and the availability of adequate health services in the area influences the choice of place of delivery. The results of the study (A8) showed that although free delivery services are available in some parts of the country, including Rano General Hospital, there are indirect costs that may be involved, such as transportation costs and other materials needed for delivery. This can influence the mother's decision to choose the place of delivery.

Economic Factors

Economic factors that influence mothers to access health services found in the research (A1, A3, A4, A9) are as follows: From the research results (A1) showed that financial status and costs associated with health services, influence mothers' decisions in choosing a place of delivery. In addition to the cost of health services, other factors such as transportation costs, time spent traveling, and additional costs associated with treatment at health facilities also contribute to the decision. The results of the study (A3) showed that economic factors, such as costs associated with delivery in a health facility, influenced mothers' decisions to give birth at home. Some mothers considered costs outside of direct costs for delivery as 'invisible' and difficult to prepare for. For example, they need to arrange transportation and pay for items such as gloves, medicines, and laboratory tests when going to a health facility for delivery. The study (A4) showed that home delivery was an index of household wealth. Mothers from households with a poor wealth index were more likely to give birth at home (AOR: 4.55; 95% CI: 2.01-10.31). Results of the study (A9) The results showed that economic factors played a role in mothers' decisions to choose home delivery. Mothers felt burdened by transportation costs that were considered unaffordable to reach health facilities, so they sometimes gave birth at home while their husbands earned money for transportation.

Education Factor

Educational factors that influence mothers to access health services, the results shown in (A1, A2, A3, A5, A6, A7, A8) are as follows: (A1) The results of the study showed a significant influence on the mother's decision in choosing a place of birth. Mothers with higher levels of education, such as secondary education or more, are more likely to give birth in health facilities. For example, mothers who have secondary education or more are 5.92 times more likely to give birth in health facilities compared to mothers with no education. In addition, mothers with basic education are also 1.89 times more likely to give birth in health facilities compared to those with no education. (A2) The results of the study showed that the level of education of the mother and husband significantly influenced the choice of location of delivery. Mothers with junior education and above were 8.8 times more likely to give birth in a health facility compared to those with lower education levels. In addition, husbands with junior education and above also increased the likelihood of mothers giving birth in a health facility, with an odds ratio of 3.92. Study (A3) results of the study showed that the educational characteristics of the participants showed that the majority (14 out of 20) had no formal education. In addition, two-thirds of them had one to three children. All participants gave birth to their last child at home during this study. Results of the study (A5)show that:

Unable to read and write: 159 (64.4%) gave birth at home. Able to read and write: 21 (52.5%) gave birth at home. Primary school (1-8): 76 (54.3%) gave birth at home. Secondary school (9-12): 19 (24.7%) gave birth at home. College and above: 3 (12.5%) gave birth at home. Lower education level was associated with a higher likelihood of giving birth at home. (A6) The results showed that the husband's education level influenced the decision of place of delivery. Mothers whose husbands had low education (illiterates) had a higher odds ratio (AOR) for giving birth at home compared to mothers whose husbands had primary education or more. Specifically, the AOR for uneducated husbands was 2.0 (95% CI: 0.9, 4.5). Study (A7, A8) The results of the study showed that the majority of respondents (48.7%) had no formal education, while 23.2% had completed primary education, 23.2% secondary education, and only 4.9% had post-secondary education. Maternal education and husband's education level were reported as determinants for home birth, with a significant relationship between education level and place of birth (p=0.009). In addition, maternal education was considered a strong determinant for the use of health facilities during childbirth.

Socio-cultural factors

Socio-cultural factors that influence mothers to access health services are shown in (A1, A3, A4, A6, A7, A9).

(A1) The results showed that religion and traditional views influence mothers' decisions in choosing the place of delivery. Mothers who are Christian or Muslim are more likely to give birth in a health facility compared to those who have traditional and other beliefs. Mothers with traditional beliefs may assume that pregnancy and childbirth are natural processes that do not require medical intervention, except in emergencies. (A3) The results showed that traditional practices influence some mothers' decisions to give birth at home rather than in a health facility. Parturient mothers may not have control over the decision to seek delivery services in a facility, and often rely on decisions made by their mothers-in-law, husbands, other family members, and neighbors. Mothers-in-law have the greatest influence and power in decision-making regarding the location of delivery, and the decision-making process is often dominated by men, with the male head of the household usually responsible for making the final decision. Study (A4) showed that home delivery includes mothers' attitudes towards delivery services. Mothers who have negative attitudes towards delivery services showed a significant association with an increased likelihood of home delivery (AOR: 3.25; 95% CI: 1.70-6.19). The results of the study (A6) showed that preferences for traditional health workers (TBAs) and decisions taken by husbands significantly influenced the decision on the place of delivery. Mothers who preferred to give birth with the help of TBAs had an odds ratio (AOR) of 3.9 (95% CI: 1.2, 12.5), and the decision taken only by the husband showed an AOR of 7.2 (95% CI: 2.1, 24.5), which increased the risk of home birth. (A7) The results showed that trust in health workers, negative experiences with health services, and cultural norms that support home birth. In addition, factors such as joint decisions in the family and the influence of local traditions also influenced the choice of place of birth, (A9) The results showed that mothers felt afraid of seeing unknown health workers, especially if the health workers were men, which could make them feel uncomfortable and exposed. One participant stated, "I prefer to give birth at home because I can take different birthing positions without exposing my body to strangers". In addition, there is also the influence of deep traditions and rituals in the community that can influence the decision not to seek medical help.

Job Factors

From the results of the study A8) showed that the majority of respondents (270 or 87.1%) were unemployed, while only 40 respondents (12.9%) had jobs. On the other hand,

the majority of respondents' partners were involved in various types of work, where 104 (33.6%) worked as farmers, 96 (31.0%) as traders, 64 (20.6%) as civil servants, 27 (8.7%) were involved in sewing businesses, and 19 (6.1%) as street vendors.

The impact of limited access to health services

From the study (A3) shows the impact of limited access to health services including difficulty in reaching health facilities, which causes some mothers to give birth at home. Long distances to health facilities and poor road conditions reduce access, and lack of planning for emergencies and complications are barriers to the use of facility-based delivery services.

The results of the study showed that limited access to health services, such as negative attitudes towards birth attendants (TBAs), financial problems for TBAs, long distances to health facilities, transportation problems, and delays in seeking care by mothers, can affect the role of TBAs and their integration with the formal health system. These limitations are major challenges for the sustainability of the role of TBAs in providing maternal and child care, (Sendo et al, 2020).

The results of the study from (A11) the impact of limited access to health services can lead to low use of maternal health services, which contributes to high rates of maternal complications and mortality. Despite government efforts to increase the use of maternal health services, the level of use of skilled birth services and facilities remains very low, especially in rural areas. These limitations can result in mothers who experience complications during pregnancy not getting the necessary care, which in turn can increase the risk of morbidity and mortality.

The main obstacles faced by mothers

From the study (A2, A4, A7, A9) showed several barriers in facing access to health services. Study (A2) showed that mothers preferred home birth despite complications during delivery in previous pregnancies for several reasons, including comfort and previous positive experiences. Although 12.8% of mothers experienced complications in previous pregnancies, many of them may have had experience with home births that did not experience complications, so they felt more comfortable giving birth at home. Mothers showed diverse attitudes in facing barriers to accessing health services. Some mothers reported lack of knowledge as a reason for not attending antenatal care (ANC), and some also mentioned being busy at home as a barrier. This suggests that there are challenges in overcoming these barriers, which may influence their decision to seek health services. Mothers make the decision to give birth at home when faced with obstacles such as transportation problems and distance to health facilities. Although many mothers mentioned health facilities as the ideal place to give birth, they still chose not to go to health facilities for these reasons.

Studies (A4) The attitudes faced by mothers regarding delivery services showed that mothers who had negative attitudes towards delivery services were more likely to give birth at home. In this study, 65.9% of mothers with negative attitudes gave birth at home, compared to 34.1% of mothers with positive attitudes. The attitudes faced by mothers regarding delivery services showed that mothers who had negative attitudes towards delivery services were more likely to give birth at home. In this study, 65.9% of mothers with negative attitudes gave birth at home, compared to 34.1% of mothers with positive attitudes.

Research study (A7) complications faced by the mother include postpartum hemorrhage (PPH) which occurs in 48% of patients, where 61.2% is primary hemorrhage and 38.8% is secondary hemorrhage. In addition, other complications that often occur are retained placenta/placental tissues in 26% of women. Three women died from puerperal sepsis after

giving birth at home, indicating a high frequency of maternal death among patients who give birth at home.

The attitude faced by mothers related to home birth shows that the majority of respondents have a negative attitude towards birth in health facilities. Of the 531 respondents, 388 (73.1%) have a negative attitude, while only 107 (20.1%) have a positive attitude towards birth in health facilities.

The decisions mothers face regarding where to give birth are often influenced by a variety of factors, including issues with health services, such as poor provider behavior, lack of skills, and issues related to health facilities. Many mothers feel pressured to give birth at home even though they have a preference for a health facility, especially in situations where there are obstetric complications or certain conditions such as sudden labor.

Research results (A9) Attitudes faced by mothers in the context of home births included fear of medical interventions and negative experiences in health facilities. Some mothers were afraid of medical procedures such as episiotomy or cesarean section, and they preferred to give birth at home to avoid the pain associated with these procedures. One participant stated, "at home, no one cuts our skin with scissors and sticks their fingers into our bodies; which is very painful". In addition, unpleasant experiences in health facilities, such as disrespectful treatment by medical personnel, also made mothers reluctant to seek medical help. Decisions faced by mothers in the context of childbirth include choosing to give birth at home or seek medical assistance. Many mothers feel powerless in household decision-making, particularly around financial matters, which are often made by their husbands or other family members. One participant stated that they were "encouraged to have their own birth plan, but often have difficulty doing so because they are not the ones making financial decisions at the household level". In addition, the decision to seek medical assistance is also influenced by the role of Traditional Birth Assistance Workers (TBA) who often make the final decision on whether medical assistance should be sought.

CONCLUSION

Based on the discussion of various studies on access to health services for mothers who give birth at home is limited by various factors, but not limited to geographical, economic, educational, socio-cultural, and employment factors, these barriers reduce the use of health facilities, which increases the risk of complications and maternal death. To improve access to maternal health services should be focused on more affordable facilities, better maternal and family health education, and socio-cultural changes that support childbirth in health facilities and must ensure that pregnant women receive safe and quality care during the labor process, efforts need to be made to improve access to maternal health services because the relationship between access to health services and the decision to give birth at home is very related. Recommendations for health professionals, especially midwives, are to continue strengthening the role of village midwives or mobile medical personnel to assist with home births, involve community and religious leaders to change perceptions and culture related to home births and provide village ambulances or subsidized transportation services so that pregnant women can quickly get to health facilities.

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