

## Factors Influencing Home Births in Western Sudan

Ahmed Abdelkerim Ahmed Abdallah<sup>1,2,3</sup>, Nawal Ali Ahmed Mohamed<sup>1,4,5</sup>, Ahmed Amin Mohammed<sup>1,6,7</sup>, Hussain Gadelkarim Ahmed<sup>8,9\*</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Faculty of Medicine, University of Kordofan, NK, El-Obeid, Sudan

<sup>2</sup>Alfayhaa Obstetrics, Gynecology, and Laparoscopy Surgery Clinic, El-Obeid, Sudan

<sup>3</sup>Sudan Medical Specialization Board, Training Committee, Sudan

<sup>4</sup>Shikan College El-Obeid, Sudan

<sup>5</sup>Arous Elrimal Obstetrics, Gynecology, and Laparoscopy Surgery Clinic, El-Obeid, Sudan

<sup>6</sup>Highcare Specialized Clinic. Al Obied, Sudan

<sup>7</sup>Farah Fertility Center, Al Obied, Sudan

<sup>8</sup>Prof Medical Research Consultancy Center- MRCC, El-Obeid, Sudan

<sup>9</sup>Department of Histopathology and Cytology, FMLS, University of Khartoum, Sudan

DOI: [10.36348/sijog.2024.v07i05.004](https://doi.org/10.36348/sijog.2024.v07i05.004)

Received: 18.04.2024 | Accepted: 25.05.2024 | Published: 30.05.2024

\*Corresponding author: Hussain Gadelkarim Ahmed

Prof Medical Research Consultancy Center- MRCC, El-Obeid, Sudan

### Abstract

**Background:** Perinatal and maternal morbidity and mortality is decreasing in most countries with effective antenatal care and safe child delivery facilities, but it is rising in underdeveloped nations with low resources and dangerous home birth practices. The present study sought to determine the factors that influence home birth in western Sudan. **Methodology:** This is a descriptive longitudinal study that took place at the Obstetrics and Gynecology teaching hospital in Al-Obeid, North Kordofan State, Sudan, from January to December of 2023. This study has enrolled around 224 individuals. **Results:** Financial problems were the most common reason for choosing home birth (23.6%). The majority of cases (22.3%) occurred among individuals under the age of 20. The majority of cases were from rural areas, accounting for 62.1%. The majority of the study population (29.9%) were illiterates. The majority of the patients (22.7%) were from Shikan, while the remaining were from other war-affected locations. **Conclusion:** The preference for home childbirth is growing in western Sudan states, particularly among illiterates, rural residents, teenagers, and low-income patients. The most apparent factors include financial and community beliefs.

**Keywords:** Home Birth, El-Obeid, Western Sudan, Women.

**Copyright © 2024 The Author(s):** This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

## INTRODUCTION

Home delivery is described as an event in which pregnant women give birth in their own or other people's homes without the assistance of an untrained health professional [1]. Fetal and maternal morbidity and death were shown to be higher in low- and middle-income nations than in some other countries, owing to the widespread adoption of home delivery. The key factors influencing the decision of home birth include traditional beliefs and practices, poverty and gender inequity, and a lack of faith in medical workers and health-care facilities [2]. It was also discovered that women with a low or medium level of education, those with poor spouse support, and those living far from health care facilities were more likely to give birth at home [3]. Many

sociocultural attitudes, including women's personal views, influence the decision to have a home birth [4]. Some communities consider that hospital delivery is unnecessary, women do not want to be delivered by male health providers, and husbands are not motivated to support the concept [5]. It was also discovered that women who received excellent antenatal care follow-up gave birth at home, which was attributed to maternal age (20 to 35 years), illiteracy, a lack of close health care centers, poverty, and rural living [6]. Despite our exhaustive search, there is a complete lack of data on factors influencing home birth in Sudan, particularly during the ongoing war and conflicts in Sudan, which can have a negative impact on maternity health care services, particularly in the study area of western Sudan. As a result, the current study sought to investigate the

factors that influence home birth in western Sudan's war zone, given the presence of numerous barriers to hospital delivery and the increased number of women who delivered at home with a variety of fetal and maternal complications.

## MATERIALS AND METHODS

This is a descriptive longitudinal study that took place at the Obst. & Gyn. hospital in El-Obeid, North Kordofan State, Sudan, between January 2023 and December 2024. Approximately 224 participants participated in this trial. Those patients were delivered at home or were admitted to the hospital while in labor and then delivered there. The sample represented a complete coverage of the respondents during the specified period.

### Statistician Analysis

Data was initially prepared as a data sheet before being entered into a computer software statistical package for social sciences (SPSS) (Version 24, Chicago, USA). Frequencies, percentages, cross-tabulation, and the chi square test were calculated. The P-value was obtained using a 95% confidence interval

(CI). P-values < 0.05 were considered statistically significant.

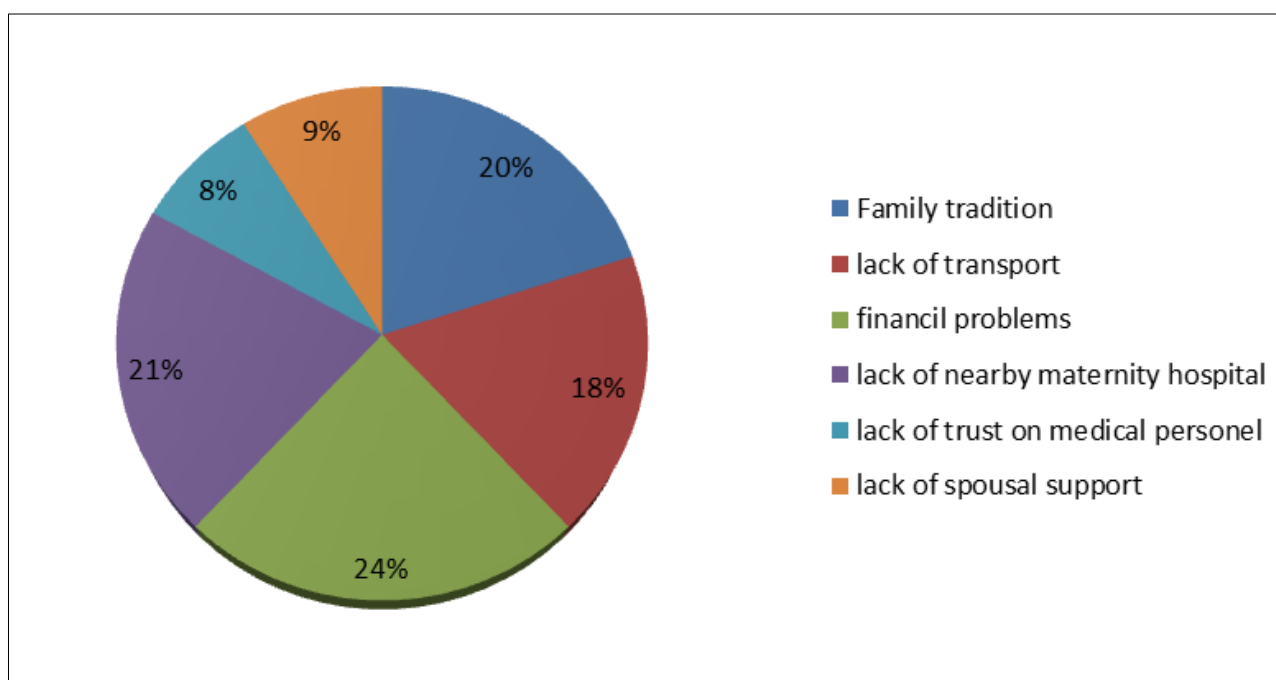
**Informed Consent:** Prior to the interview, each participant signed a documented ethical consent form.

### Ethical Approval

The human Research Ethics Committee (HREC) at Prof. Medical Research Center-MRCC accepted the protocol for this investigation. Approval Number: HREC 0010/MRCC 4/24.

## RESULTS

This study investigated 224 women aged 13 to 49 who chose to give birth at home, with an average age of 28 years. Financial problems were found to be the most common reason for choosing home birth, followed by a lack of a nearby maternity hospital, family tradition, a lack of transportation, a lack of spousal support, and a lack of trust in medical personnel, representing 53/224(23.6), 46/224(21%), 45/224(20%), 41/224(18%), 21/224(9%), and 18/224(8%), respectively (Figure 1).



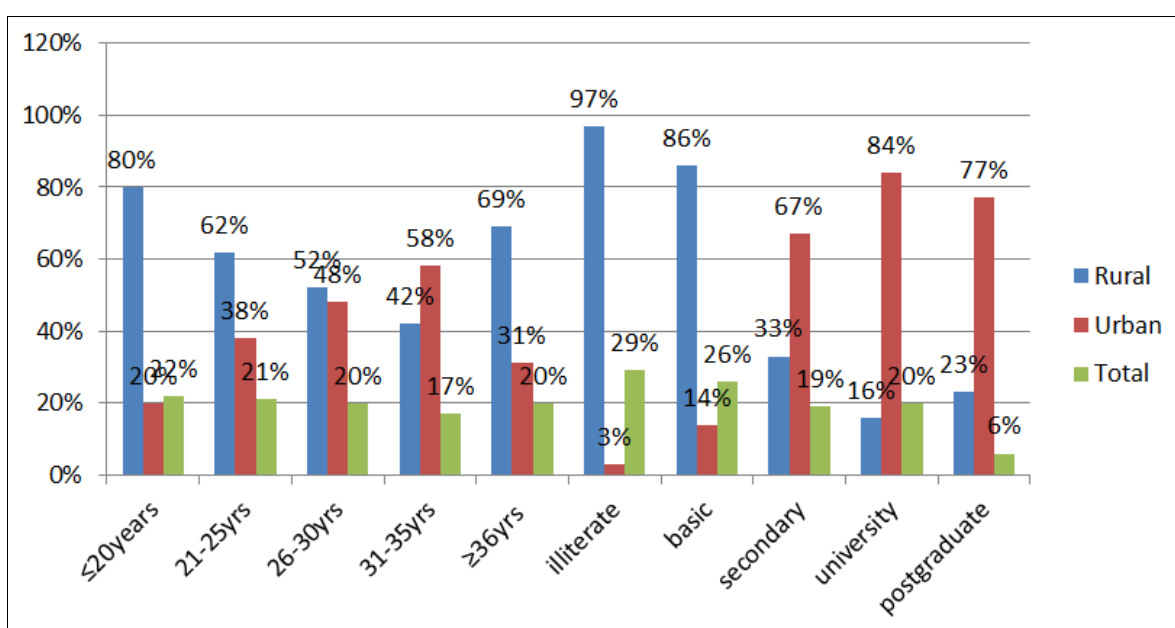
**Figure 1: Description of the study population according to the factors of opting home delivery**

It was found that of the 224 participants, 139 (62.1%) were from rural areas, while the remaining 85 (37.9%) were from metropolitan areas. The majority of rural participants were aged ≤20 years. As seen in Table 1 and Figure 2, the majority of urban contributions (40/139, 28.8%) were between the ages of 31 and 35, with 22/85 (25.8%).

The majority of the contributors were illiterates, followed by those with a basic education level and those with a university, secondary, or postgraduate degree, who made up 67/224 (29.9%), 58/224 (25.8%), 44/224 (19.6%), 42/224 (18.7%), and 13/224 (5.8%), respectively. According to Table 1 and Figure 2, illiterates make up 65/139 (46.7%) of rural dwelling groups, whereas university graduates make up 37/85 (43.5%).

**Table 1: Distribution of the participants by demographic characteristics**

Variable	Rural	Urban	Total
<b>Age</b>			
≤20 years	40	10	50
21-25 years	29	18	47
26-30 years	23	21	44
31-35 years	16	22	38
≥36 years	31	14	45
<b>Total</b>	139	85	224
<b>Education</b>			
Illiterate	65	2	67
Basic	50	8	58
Secondary	14	28	42
University	7	37	44
Postgraduate	3	10	13
<b>Total</b>	139	85	224



**Figure 2: Description of the participants by demographic characteristics**

Table 2 and Figure 3 summarize the study subjects' distribution based on factors influencing home delivery and demographic parameters. Family tradition was the most common reason for choosing home birth among rural residents (37/139, 26.6%), whereas financial problems were the most common reason among urban residents (30/85, 35.2%). Lack of transportation was the primary cause in the age group ≤20 years. 15/50 (30%), while family tradition was the largest determinant in the age range 21-25 years. Financial troubles were the leading factor among age groups 26-30 years, 31-35

years, and ≥ 36 years, accounting for 12/44 (27.2%), 12/38 (31.5%), and 13/45 (28.8%), respectively.

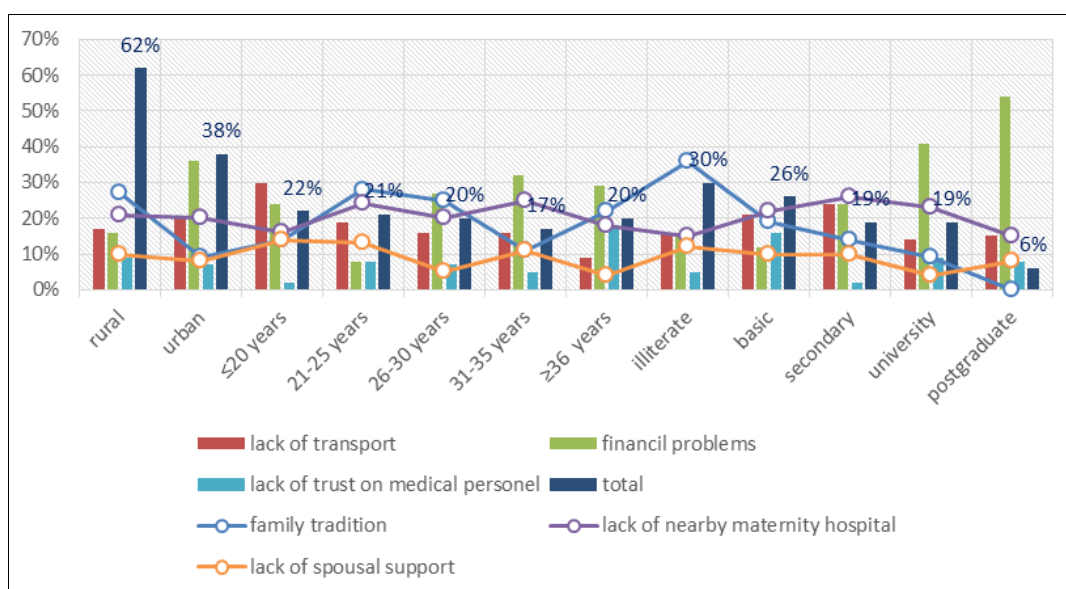
Illiterates were primarily affected by family traditions (24/67, 35.8%), while a lack of nearby maternity hospitals was a barrier for both basic and secondary school education participants (13/58, 22.4%) and 11/42, 26.1%), respectively. For university and postgraduate students, financial problems were identified as the main barrier (18/44, 40.9%) and 7/13, 53.8%).

**Table 2: Distribution of research subjects based on factors impacting home delivery and demographic characteristics**

Variable	Traditions	Transport	Financial	LNMH	LTMP	LSS	Total
<b>Residence</b>							
Rural	37	24	23	29	12	14	139
Urban	8	17	30	17	6	7	85
<b>Total</b>	45	41	53	46	18	21	224

Variable	Traditions	Transport	Financial	LNMH	LTMP	LSS	Total
<b>Age group</b>							
≤20 years	7	15	12	8	1	7	50
21-25 years	13	9	4	11	4	6	47
26-30 years	11	7	12	9	3	2	44
31-35 years	4	6	12	10	2	4	38
≥36 years	10	4	13	8	8	2	45
<b>Total</b>	45	41	53	46	18	21	224
<b>Education</b>							
Illiterate	24	11	11	10	3	8	67
Basic	11	12	7	13	9	6	58
Secondary	6	10	10	11	1	4	42
University	4	6	18	10	4	2	44
Postgraduate	0	2	7	2	1	1	13
<b>Total</b>	45	41	53	46	18	21	224

Lack of Nearby Maternity Hospital (LNMH)- Lack of Trust on Medical Personnel (LTMP)- Lack of Spousal Support (LSS)



**Figure 3: Description of the study subjects by factors influencing home birth, and demographical features.**

Table 4, Fig. 4: Shows the distribution of research participants based on factors impacting home delivery and the localities from where they presented. The majority of the participants are from Shikan locality 50/224 (22.3%). Family tradition was the most important element for participants from Umdam, Sodary, Gabra, and western Kordofan localities, accounting for 6/17 (35.2%), 4/16 (25%), 5/20 (25%), and 3/11 (27.2%), respectively. Lack of transportation was the most significant impediment for residents in Alrahad and

Darfur localities, accounting for 6/19 (31.5%) and 5/17 (29.4%), respectively. Shikan, Umruaba, and Bara participants were mostly experiencing financial difficulties, accounting for 23/50 (46%), 8/25 (32%), and 5/17 (29.4%), respectively. Participants from southern Kordofan localities 6/16 (37.5%) were most concerned about a lack of close maternity institutions. Participants from all areas did not report a lack of trust in medical professionals or spouse support.

**Table 3: Shows the distribution of research participants by characteristics impacting home delivery and the locations from which they presented**

Variable	Causes of opting home delivery						Total
Localities	Traditions	Transport	Financial	LNMH	LTMP	LSS	Total
Shikan	6	6	23	9	4	2	50
Umruaba	5	5	8	2	2	3	25
Umdam	6	4	3	3	1	0	17
Alrahad	4	6	1	4	0	4	19
Bara	1	4	5	4	1	2	17

Variable	Causes of opting home delivery						Total	
	Localities	Traditions	Transport	Financial	LNMH	LTMP		LSS
Sodary		4	1	3	3	3	2	16
Gabra		5	4	4	5	0	2	20
Western Bara		4	3	2	4	2	1	16
WKL		3	2	0	2	2	2	11
SKL		3	1	2	6	2	2	16
Darfur		4	5	2	4	1	1	17
<b>Total</b>		45	41	53	46	18	21	224

Lack of Nearby Maternity Hospital (LNMH)- Lack of Trust on Medical Personnel (LTMP)- Lack of Spousal Support (LSS)  
 - Western Kordofan localities (WKL)- Southern Kordofan localities (SKL)

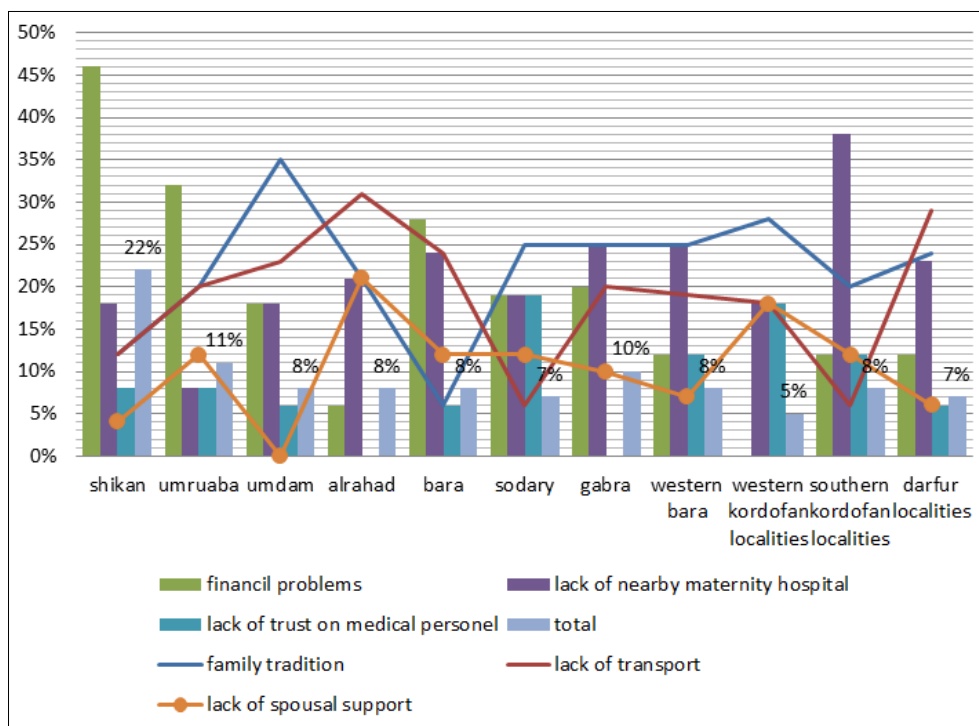


Figure 4: Description of the study participants by factors influencing home birth and the localities from where they presented

## DISCUSSION

Home birth is connected with higher maternal and perinatal morbidity and mortality rates, particularly in developing nations. In Sudan, due to restricted health care facilities caused by economic limitations and illiteracy, as well as the continuous devastating war, an increasing number of patients choose to birth at home. As a result, the current study sought to identify the most important factors influencing home delivery. According to the current study's findings, there are numerous factors that influence the study population's decision to give birth at home. Traditional beliefs and a lack of financial assistance are the primary factors in our study. In a similar context, a study from Karachi, Pakistan discovered that traditional beliefs and poverty are the most important factors influencing the decision to give birth at home [2]. Our research also revealed that additional factors were There are no maternal health care facilities nearby, and there is no transportation. The same

was revealed in a study undertaken in the African country of Sierra Leone [3]. Fortunately, and due to strong family and social links in Sudan, our study found that a lack of spouse and relative support was not a major factor in choosing home birth, as opposed to many other studies on the subject [5]. In our study, participants aged  $\leq 20$  years are more likely to choose home birth, contrary to a population-based cross-sectional study conducted in Sub-Saharan Africa countries, which found that the main age group opting for home birth was 20 to 35 years [6]. This is due to the prevalence of adolescent marriage in Sudan. The same study by Zegeye indicated that patients with no formal education prefer home delivery; this was also stated in our study, in which the majority of the participants were illiterate. Women with good education--university and postgraduate--were found to be a minority, indicating that they choose hospital childbirth. A comparable finding to our current study was reported from Sudan's neighboring country (Ethiopia), where they discovered that delivery in health care facilities among



women with higher education levels was more than twice as high as among women without education [7]. According to this study, rural residents prefer home delivery more than urban residents. A research conducted in Ethiopia revealed the same finding [8]. Participants in this study came from various locations in western Sudan. North Kordofan state, as well as the surrounding Western Kordofan, Southern Kordofan, and Darfur states. All of Sudan's localities are affected by the ongoing war and conflicts. The majority of the patients came from the north Kordofan location of Shikan, where Al obied obs&gyn hospital is located. It is the only referral hospital for all western Kordofan states, and patients had to travel a significant way to get there, resulting in poor fetal and maternal outcomes. As a result, providing equipped maternity clinics, health education, well-trained health care workers, and high-quality educational services can help to eliminate such reasons as opting for home delivery.

## IN CONCLUSION

The prevalence of home childbirth is on the rise in western Sudan states, particularly among individuals with poor literacy levels, living in rural areas, adolescents, and those with little financial resources. Immediate actions are required in the healthcare system to ensure safe childbirth for pregnant women in Western Sudan.

## Acknowledgement

The authors express their gratitude to the individuals at El-Obeid, Obs& Gyn Hospital, for their assistance in gathering the data. We express our gratitude to the volunteers for generously dedicating their time and actively taking part.

**Funding:** This work has been funded by MRCC. Grant number: MRCC\0010

## Authors' Contribution

Abdallah AAA: Conception, data collection, analysis, drafting, approval of the final version.

Mohamed NAA: Conception, data collection, approval of the final version.

Mohammed AA: Conception, data collection, approval of the final version.

Ahmed HG: Conception, consultation, critical revision, approval of the final version.

**Conflict of Interest:** Authors declare no conflict of interest

**Data Availability:** Data regarding this research can be requested from the corresponding authors.

## REFERENCES

1. Nigatu, S. G. (2023). Trend and determinants of home delivery in Gambia, evidence from 2013 and 2020 Gambia Demographic and Health Survey: A multivariate decomposition analysis. *Plos one*, 18(12), e0295219.
2. Khalid, A., Haider, K. A., Ahmer, H., Noorani, S., & Hoodbhoy, Z. (2023). Why do women still give birth at home; perceptions of Pakistani women and decision-makers from marginalized communities. *PLOS Global Public Health*, 3(10), e0002217.
3. James, P. B., Yendewa, G. A., Bah, A. J., Osborne, A., Kpagoi, S. S., Margao, E. K., ... & Wardle, J. (2023). Do disempowered childbearing women give birth at home in Sierra Leone? A secondary analysis of the 2019 Sierra Leone demographic health survey. *BMC pregnancy and childbirth*, 23(1), 810.
4. Kusumawati, N., Erlinawati, E., Safitri, Y., Nurman, M., & Erlin, F. (2023). Exploring Women's Reasons for Choosing Home Birth with the Help of Their Untrained Family Members: A Qualitative Research. *International Journal of Community Based Nursing and Midwifery*, 11(2), 72.
5. Ajayi, A. I., Ahinkorah, B. O., & Seidu, A. A. (2023). "I don't like to be seen by a male provider": health workers' strike, economic, and sociocultural reasons for home birth in settings with free maternal healthcare in Nigeria. *International Health*, 15(4), 435-444.
6. Zegeye, A. F., Negash, W. D., Kassie, A. T., Wassie, L. A., & Tamir, T. T. (2023). Home delivery among women who had optimal ANC follow-up in Sub-Saharan Africa: A multilevel analysis. *Plos one*, 18(11), e0295289.
7. Tenaw, L. A., Kumsa, H., Arage, M. W., Abera, A., Hailu, T., & Misl, E. (2023). Assessment of Place of Delivery and Associated Factors among Pastoralists in Ethiopia: A Systematic Review and Meta-Analysis Evaluation. *Journal of Pregnancy*, 2023.
8. Hailegebreal, S., Haile, F., Haile, Y., Simegn, A. E., & Enyew, E. B. (2023). Using geographically weighted regression analysis to assess predictors of home birth hot spots in Ethiopia. *Plos one*, 18(6), e0286704.