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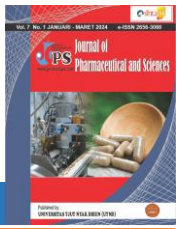

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Analysis of Factors Related to the Selection of Maternal Delivery Places in the Working Area of the Ambukha Community Health Centre, Lolofitu District, MOI, West Nias Regency in 2024

Analisis Faktor-Faktor yang Berhubungan dengan Pemilihan Tempat Persalinan Ibu di Wilayah Kerja Puskesmas Ambukha Kecamatan Lolofitu MOI Kabupaten Nias Barat Tahun 2024

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Abstract

Background: Maternal mortality remains a significant public health concern in Indonesia, where 19.3% of deliveries are still conducted outside healthcare facilities or without skilled birth attendants. The working area of Ambukha Public Health Centre (Puskesmas) has the lowest proportion of facility-based deliveries in the West Nias District (67% in 2023), indicating the need to analyse factors associated with delivery place choice. **Objective:** To identify factors related to the selection of delivery place among mothers in the working area of Ambukha Public Health Centre, Lolofitu Moi Subdistrict, West Nias District. **Methods:** This study employed an observational analytic design with a cross-sectional approach. The population consisted of all mothers who delivered within the Ambukha Public Health Centre area in 2023 (N=78), and samples were obtained using a total sampling approach. Data were collected using structured questionnaires and analysed using Chi-square tests and logistic regression. **Results:** Significant associations were found between the choice of delivery place and maternal knowledge (p=0.000; OR=2.267), maternal attitude (p=0.000; OR=4.250), national health insurance (JKN) membership (p=0.000; OR=5.333), access to healthcare facilities (p=0.000; OR=6.038), husband's support (p=0.000; OR=4.250), perceived need factors (p=0.000; OR=3.333), as well as cultural beliefs (p=0.004; OR=2.473). Multivariate logistic regression identified maternal knowledge as the most influential factor in delivery place selection, as indicated by the most significant coefficient value (B = –4.204) and statistical significance (p=0.005). **Conclusion:** Maternal knowledge, attitude, JKN membership, access to healthcare facilities, husband's support, perceived need, and cultural beliefs are significantly associated with the selection of delivery place. Efforts to increase facility-based delivery coverage in this area should prioritise improving maternal knowledge, followed by strengthening other supporting factors.

***Keywords*: Factors, Selection of Delivery Place, Delivery Mother.**

Abstrak

Latar Belakang: Tingkat kematian ibu masih menjadi masalah kesehatan masyarakat di Indonesia, di mana 19,3% persalinan tidak dilakukan di fasilitas kesehatan (faskes) atau tidak ditolong tenaga kesehatan. Wilayah kerja Puskesmas Ambukha memiliki persentase persalinan di faskes terendah di Kabupaten Nias Barat (67% pada 2023), sehingga perlu dianalisis faktor-faktor yang berhubungan dengan pemilihan tempat persalinan. **Tujuan:** Mengidentifikasi faktor-faktor yang berhubungan dengan pemilihan tempat persalinan di wilayah kerja Puskesmas Ambukha, Kecamatan Lolofitu Moi, Kabupaten Nias Barat. **Metode:** Penelitian analitik observasional dengan pendekatan *cross-sectional*. Populasi adalah seluruh ibu bersalin di wilayah kerja Puskesmas Ambukha tahun 2023 (N=78), dengan sampel diambil menggunakan teknik *total sampling*. Data dikumpulkan melalui kuesioner dan dianalisis dengan uji Chi-square serta regresi logistik. **Hasil:** Terdapat

hubungan yang signifikan antara pemilihan tempat persalinan dengan pengetahuan ibu (p=0,000; OR=2,267), sikap ibu (p=0,000; OR=4,250), kepesertaan JKN (p=0,000; OR=5,333), akses ke faskes (p=0,000; OR=6,038), dukungan suami (p=0,000; OR=4,250), faktor kebutuhan (p=0,000; OR=3,333), serta budaya dan keyakinan (p=0,004; OR=2,473). Hasil analisis regresi logistik multivariat menunjukkan bahwa faktor pengetahuan merupakan variabel yang paling dominan berhubungan dengan pemilihan tempat persalinan, dengan nilai koefisien B terbesar (-4,204) dan signifikan secara statistik (p=0,005). **Kesimpulan:** Faktor pengetahuan, sikap, kepesertaan JKN, akses, dukungan suami, kebutuhan, serta budaya dan keyakinan berhubungan signifikan dengan pemilihan tempat persalinan. Intervensi peningkatan cakupan persalinan di faskes di wilayah ini perlu memprioritaskan upaya peningkatan pengetahuan ibu, diikuti dengan penguatan faktor-faktor pendukung lainnya.

Kata Kunci: *Faktor-faktor, Pemilihan Tempat Persalinan, Ibu Bersalin.*

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Introduction

Maternal and infant mortality rates are two indicators commonly used to determine a country's health status. One priority in health development in Indonesia is improving maternal and infant health, as these groups are particularly vulnerable during pregnancy, childbirth, and the postpartum period. Therefore, assessing the health status of women in labour is crucial. The success of maternal health programs can be assessed through the primary indicator, the Maternal Mortality Rate (MMR). Maternal mortality is defined as all deaths during pregnancy, childbirth, and the postpartum period caused by maternal management, but not by other causes such as accidents or incidents [1].

According to the WHO, the global MMR (MMR) was 303,000 in 2019. In 2020, the WHO stated that a maternal death occurred almost every two minutes. In the same year, nearly 800 women died daily from preventable causes related to pregnancy and childbirth. The MMR in ASEAN was 235 per 100,000 live births [2]. The Ministry of Health's maternal mortality registration system (Maternal Perinatal Death Notification) recorded 4,005 maternal deaths in Indonesia in 2022, increasing to 4,129 in 2023. The most common causes of maternal death were hypertension during pregnancy (801 cases), haemorrhage (741 cases), heart disease (232 cases), and other causes (1,504 cases), all of which were closely related to the place/facility of delivery, whether at home or outside a health facility [3]. Furthermore, an element associated with maternal mortality is the fact that approximately 19.3% of deliveries are not conducted in a health facility or attended by a health professional.

Efforts to reduce maternal and infant mortality include encouraging all deliveries to be attended by a health professional. Competent health professionals, including obstetricians and gynaecologists (SpOG), general practitioners, midwives, and nurses, are employed. The place of delivery is at a health facility. The success of this program is measured by indicators reflecting the percentage of births in health facilities. This indicator is a key measure of the success of health programs in a region.

Based on the North Sumatra Health Profile 2019, the Maternal Mortality Rate (MMR) in North Sumatra Province was 71.96 per 100,000 live births. The coverage of deliveries assisted by health workers remained at 87.24%, falling short of the 100% target set in the North Sumatra Provincial Health Office's Strategic Plan. The

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coverage of deliveries in health facilities reached 84.33%. Meanwhile, the West Nias Regency Health Office recorded a Maternal Mortality Rate (MMR) of 383.4 per 100,000 live births in 2023, compared to the 2023 RPJMD target of 319.8 per 100,000 live births. Similarly, in 2023, coverage of mothers delivering in health facilities was 84%, and of those not delivering in health facilities, 16%. Judging from the results, the percentage of births outside of health facilities is relatively low. However, the Ministry of Health has stated that home births are no longer permitted; all mothers must deliver in health facilities and be assisted by competent health workers [4].

The persistence of unattended births, or births not performed in health facilities, is a problem that requires resolution. If this continues, it will hamper efforts to reduce maternal mortality. According to Lawrence Green, as quoted by Banerjee and Ho (2020), several factors influence a person's decision-making process regarding the use of health services. These factors include predisposing factors such as knowledge, attitudes, beliefs, and convictions. Furthermore, enabling factors include the physical environment, such as the availability or lack of health facilities and services. Finally, reinforcing factors include family members, the behaviour of health workers, and the behaviour of the surrounding community [5].

Ambukha Community Health Centre is one of the Community Health Centres located in Lolofitu Moi District, West Nias Regency, which provides birth services in health facilities. It has four working areas, two auxiliary health centres (Pustu), and one village health post (Poskesdes). Ambukha Community Health Centre is the Community Health Centre in the West Nias Regency with the highest number of non-health facility births. In the working area of this Community Health Centre, there are no maternity homes or private clinics that provide birth services. Data from the Ambukha Community Health Centre in 2022 recorded 63 births, one maternal death, and five infant deaths, where these incidents occurred during births outside health facilities or births assisted by residents' homes. In 2023, Ambukha Community Health Centre recorded 78 births, of which 52 mothers gave birth in health facilities (67%). Based on these data, it can be seen that the utilisation of health facilities by mothers giving birth at the Ambukha Community Health Centre has not yet reached the 100% target and is even lower than that of Community Health Centres in West Nias Regency, which have reached >70%. This is because some mothers choose to give birth in non-health facilities, such as at home with the help of family or traditional birth attendants (33% (26 people). There were 2 cases of infant mortality in 2023, both occurring in non-health facility deliveries.

Based on an initial survey conducted through interviews with 10 mothers giving birth, several factors related to the choice of delivery location are identified within the Ambukha Community Health Centre working area, Lolofitu Moi District, West Nias Regency. Among them, mothers do not understand the benefits of giving birth in a health care facility for the safety of the mother and her baby. Some mothers still believe that giving birth in a health care facility is more expensive than giving birth outside of a health care facility. Some also believe that giving birth in a health care facility is the same as giving birth outside of a health care facility. Some even say that the health care facility is far from their home. Furthermore, preliminary survey results indicate that, given the culture and beliefs prevailing in this region, traditional birth attendants can address all potential complications during labour and are more experienced than younger midwives. Another issue is that husbands and families often lack the necessary support or motivation to encourage mothers to endure labour. Similarly, some women stated that they usually choose a birthing location they feel comfortable in. For example, because they are familiar with the traditional birth attendant, the midwife's assistance with the birth provides a sense of comfort.

Experimental Section

Research Design

This research is an observational, analytical study that analyses the relationship between each independent variable and the dependent variable. It uses a cross-sectional design, meaning the independent and dependent variables are collected simultaneously at a single point in time.

Location and Time of Research

This research was conducted in the working area of the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, for 6 months, namely from August 2024 to January 2025.

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Sample

The population in this study comprised all mothers giving birth in the working area of the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, in 2023, based on data from the Ambukha Community Health Centre Profile, which totalled 78 people. In this study, all members of the population were used as samples (total sampling).

Research Variables

The independent variables are 1) Knowledge; 2) Attitude; 3) JKN Participation; 4) Access to Health Facilities; 5) Husband's Support; 6) Needs; 7) Culture and Beliefs, and the dependent variable is Choice of Place of Birth.

Data Collection

The types of data used in this study are primary and secondary data. Primary data is data obtained directly by the researcher, using a questionnaire administered to respondents. Secondary data is data processed by a third party for analysis to provide a general overview of the Ambukha Community Health Centre's work area in the Lolofitu Moi District, West Nias Regency.

The research instrument used was one whose validity and reliability have been tested by Latifa (2020). The validity test results for all items for each variable were >0.361, and the reliability test results were >0.600, indicating that the variables were valid and reliable. Therefore, no further validity and reliability tests were conducted in this study.

Data Processing

Data processing includes: 1) Editing: The results of interviews, questionnaires, or field observations must first be edited. 2) Coding: Converting data in the form of sentences or letters into numerical data. 3) Data Cleaning: Looking for possible coding errors, incompleteness, and so on, then making corrthe Ambukha Community Health Centre in theing: All coded data is then input into the SPSS application and processed. 5) Tabulating: The analysed data is presented in tables for easier analysis.

Data Analysis

a. Univariate analysis is a table that presents data on a single independent variable in the form of a frequency distribution, including: knowledge, attitudes, JKN participation, access to health facilities, husband's support, needs, culture and beliefs, and choice of place of delivery.
b. Bivariate analysis is an analysis conducted on two variables: the independent variable and the dependent variable. In this case, the independent variables are knowledge, attitudes, JKN participation, access to health facilities, husband's support, needs, culture and beliefs. In contrast, the dependent variable is the choice of delivery location. A significant relationship between the independent and dependent variables is determined using the chi-square statistical test, with the indicators used being the p-value and the OR (Odds Ratio).
c. Multivariate analysis is a logistic regression test, which is a regression test used to test the extent to which the independent variables can predict the probability of the dependent variable. The dependent variable in this study is the choice of delivery location. Hypothesis testing in this study was conducted using logistic regression with a significance level of 5 per cent. Testing in this study began with an overall model fit test, assessing the model's suitability (Homser and Lemeshow's goodness-of-fit test), coefficient of determination (R^2), classification table, and hypothesis testing.

Results and Discussion

General Description of the Research Location

Ambukha Community Health Centre is a community health centre (Puskesmas) in Lolofitu Moi District, West Nias Regency, North Sumatra Province. It was established pursuant to Regulation Number 46 of 2018 concerning the Upgrade of the Status of Ambukha Sub-Community Health Centres to Inpatient Community Health Centres (UPT). Ambukha is located in Ambukha Village, which consists of four villages: Ambukha, Duria, Hilimbowo Ma'u, and Sisobawino II.

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Based on data from the Ambukha Community Health Centre Profile, in 2023 the population of the Ambukha Community Health Centre area was 5,580, comprising 2,619 males and 2,961 females. The highest population in the Ambukha Community Health Centre area is in Ambukha Village, with 2,699 people, and the lowest is in Duria Village, with 419 people, for an average population density of 265.71 people per km2. The highest population density is in Ambukha Village at 367.18 people per km2, and the lowest population density is in Duria Village at 203.17 people per km2. However, the population settlements are not located at a particular point but are spread unevenly throughout the area. Consequently, access to health care facilities is not the same for every resident, and most are far from the Community Health Centre. This is further exacerbated by roads that are still in poor condition and limited means of transportation. This is what causes many people to still use the services of traditional healers when sick, because, in addition to the distance factor, it is also due to local culture that still believes in the ability of traditional healers to cure various diseases, including childbirth. Many people are still not covered by the National Health Insurance (JKN) program, even though they are economically eligible for the Indonesian Health Card (KIS) and similar programs. The only alternative when they are sick is to seek treatment from a traditional healer due to the lack of funds to access services at health facilities.

Various efforts have been made by health workers to make services accessible to the public, such as conducting home visits, but the budget for this is still limited, resulting in suboptimal performance. The health facilities within the Ambukha Community Health Centre area include: Ambukha Community Health Centre, Hilimbowo Ma'u Community Health Centre, Sisobawino II Community Health Centre, Soiiwa Village Health Post, and Duria Village Health Post. Based on service output, particularly related to maternal mortality, the Maternal Mortality Rate (MMR) according to the Community Health Centre's monthly report is 483 per 100,000 live births. Maternal deaths are largely caused by complications, delayed treatment, and deliveries performed by incompetent personnel or traditional birth attendants.

Results

Respondent Characteristics

Table 1. Characteristics of Women Giving Birth in the Ambukha Community Health Centre Work Area, Lolofitu Moi District, West Nias Regency, 2024

No	Characteristics	n	%
1	Ages:		
	a. < 20 years	18	23,1
	b. 20 – 35 years	54	69,2
	c. > 35 years	6	7,7
2	Level of education:		
	a. Primary Education	50	64,1
	b. Secondary Education	23	29,5
	c. Higher Education	5	6,4
3	Employment Status:		
	a. Not Working	43	55,1
	b. Working	35	44,9
4	Number of children:		
	a. ≤ 2 children	40	51,3
	b. > two children	38	48,7
	Jumlah	78	100,0

Table 1 shows that the majority of mothers giving birth in the Ambukha Community Health Centre (Puskesmas) working area, Lolofitu Moi District, West Nias Regency, are aged between 20 and 35, or 69.2%, categorised as a low-risk age group. In terms of education level, the majority of mothers giving birth in the Ambukha Community Health Centre (Puskesmas) working area, Lolofitu Moi District, West Nias Regency, have primary education (junior high school or lower), at 64.1%. In terms of employment status, the majority of mothers giving birth in the Ambukha Community Health Centre (Puskesmas) working area, Lolofitu Moi District, West Nias Regency, are unemployed or housewives. Furthermore, the majority of mothers giving

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birth in the Ambukha Community Health Centre (Puskesmas) working area, Lolofitu Moi District, West Nias Regency, have two or more children.

Univariate Analysis Results

The univariate analysis in this study covered: knowledge, attitudes, insurance (JKN) membership, access to health facilities, husband's support, needs, culture and beliefs, and place of delivery, as described below.

1. Maternal Knowledge

The following is a description of maternal knowledge regarding childbirth at healtsuggestsies in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency.

Table 2. Knowledge of Mothers Giving Birth in the Working Area of Ambukha Health Centre, Lolofitu Moi District, West Nias Regency in 2024

No	Knowledge	n	%
1	Good	48	61,5
2	Less	30	38,5
	Total	**78**	**100,0**

Based on Table 2, it can be seen that the knowledge of mothers giving birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, was generally good, at 61.5%.

2. Mothers' Attitudes

The following illustrates the attitudes of mothers giving birth regarding delivery locations at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency.

Table 3. Attitudes of Mothers Giving Birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

No	Attitude	n	%
1	Positive	54	69,2
2	Negative	24	30,8
	Total	**78**	**100,0**

Table 3 shows that the majority of mothers in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, are in the positive category, at 69.2%.

3. Insurance Participation

The following is a description of JKN participation for mothers in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency.

Table 4. JKN Participation for Mothers in the Ambukha Community Healindicating p < tre, Lolofitu Moi suggests West Nias Regency, 2024

No	National Health Insurance Participation (JKN)	n	%
1	Participants	48	61,5
2	Non-Participants	30	indicating p <
	Total	**78**	**100,0**

Table 4 shows that the majority of women in labour (JKN) in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, are JKN participants, at 61.5%.

4. Access to Health Facilities

The following illustrates access for women in labour to health facilities in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency.

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Table 5. Access for Women in Labour to Health Facilities in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

No	Access to Health Facilities	n	%
1	Easy	46	59,0
2	Difficult	32	41,0
	Total	**78**	**100,0**

Table 5 shows that access to health facilities for mothers giving birth at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is generally easy (59.0%).

5. Husband's Support

The following illustrates husbands' support for mothers giving birth at the Ambukha Community Health Centre in the Lolofitu Moi District, West Nias Regency.

Table 6. Husband's Support for Mothers Giving Birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

No	Husband's Support	n	%
1	Supportive	51	65,4
2	Not Supportive	27	34,6
	Total	**78**	**100,0**

Table 6 shows that husbands' support for women giving birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency is overwhelmingly supportive, at 65.4%.

6. Needs

The following illustrates the needs of women giving birth at health facilities in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency.

Table 7. Needs for Maternity Services in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

No	Need	n	%
1	Need	60	76,9
2	Less Need	18	23,1
	Total	**78**	**100,0**

Based on Table 7, the majority of mothers in labour at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, require delivery services (76.9%).

7. Culture and Beliefs

The following illustrates the role of culture and beliefs in determining a suitable delivery location in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency.

Table 8. The Role of Culture and Beliefs in Labour in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

No	The Role of Culture and Beliefs	n	%
1	Yes	53	67,9
2	No	25	32,1
	Total	**78**	**100,0**

Table 8 shows that culture and beliefs play a significant role in determining the place of delivery for women in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, with a majority (67.9%).

8. Place of Delivery

The following is a list of delivery locations for women at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency.

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Table 9. Place of Delivery for Women in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

No	Birthplace	n	%
1	Healthcare Facilities	52	66,7
2	Non-Healthcare Facilities	26	33,3
Total		**78**	**100,0**

Based on Table 9, the majority of mothers giving birth in the Ambukha Community Health Centre (Puskesmas) work area, Lolofitu Moi District, West Nias Regency, were in health facilities (66.7%).

Bivariate Analysis Results

The bivariate analysis in this study examined each independent variable (knowledge, attitudes, insurance (JKN) membership, access to health facilities, husband's support, needs, culture, and beliefs) in relation to the dependent variable (place of delivery), as described below.

1. Relationship between Maternal Knowledge and Choice of Place of Delivery

The relationship between maternal knowledge and place of delivery in the Ambukha Community Health Centre work area, Lolofitu Moi District, West Nias Regency, is shown in the following table.

Table 10. Crosstabulation of the Relationship between Knowledge and Choice of Place of Delivery in the Ambukha Community Health Centre work area, Lolofitu Moi District, West Nias Regency, 2024

		Birthplace						p-value
		Non-Health Facilities		Health Facilities		Total		
		n	%	n	%	n	%	
Knowledge	Good	3	6,3	45	93,8	48	100,0	0,000
	Less	23	76,7	7	23,3	30	100,0	
	Total	26	33,3	52	66,7	78	100,0	

Table 10 shows that among the 48 mothers with good knowledge, 93.8% chose to deliver at a health facility, and 6.3% chose a non-health facility. Meanwhile, of the 30 mothers giving birth with poor knowledge, 23.3% chose a health facility and 76.7% chose a non-health facility.

Furthermore, the Chi-square statistical test (α=0.05) yielded a p-value of 0.000, indicating $p < 0.05$. This result indicates a significant relationship between knowledge and delivery location in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency. Furthermore, the statistical test also yielded a cohort value of 2.267, indicating that mothers with good knowledge were 2.267 times more likely to deliver at a health facility than mothers with poor knowledge.

2. The Relationship between Mothers' Attitudes and Choice of Place of Birth

The relationship between mothers' attitudes and place of birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is shown in the following table.

Table 11. Cross-tabulation of the Relationship between Mothers' Attitudes and Choice of Place of Birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

		Birthplace						p-value
		Non-Health Facilities		Health Facilities		Total		
		n	%	n	%	n	%	
Attitude	Positive	9	16,7	45	83,3	54	100,0	0,000
	Negative	17	70,8	7	29,2	24	100,0	
	Total	26	33,3	52	66,7	78	100,0	

Table 11 shows that of the 54 mothers with positive attitudes, 83.3% chose to deliver at a health facility and 16.7% chose a non-health facility. Meanwhile, of the 24 mothers with negative attitudes, 29.2% chose a health facility and 70.8% chose a non-health facility.

Furthermore, the Chi-square statistical test (α=0.05) yielded a p-value of 0.000, indicating a p-value <0.05. This result suggests a significant relationship between attitudes and the mother's place of birth in the

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Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency. Furthermore, the statistical test also yielded a cohort value of 4.250, indicating that mothers with positive attitudes toward delivering at a health facility were 4.250 times more likely to deliver at a health facility than mothers with negative attitudes.

3. Relationship between Insurance Membership and Choice of Delivery Place

The relationship between insurance membership and delivery place in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is shown in the following table.

Table 12. Cross-tabulation of the Relationship between JKN Membership and Choice of Delivery Place in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

		Birthplace						p-value
		Non-Health Facilities		Health Facilities		Total		
		n	%	n	%	n	%	
JKN Participation	Participants	6	12,5	42	87,5	48	100,0	0,000
	Participants	20	66,7	10	33,3	30	100,0	
	Jumlah	26	33,3	52	66,7	78	100,0	

Table 12 shows that of the 48 women giving birth who were JKN participants, 87.5% chose a health facility and 12.5% chose a non-health facility. Meanwhile, of the 30 women giving birth who were not JKN participants, 33.3% chose a health facility and 66.7% chose a non-health facility.

Furthermore, based on the results of the Chi-square statistical test (α=0.05), the p-value was 0.000, indicating $p < 0.05$. This result indicates a significant relationship between JKN participation and the mother's place of birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency. Furthermore, the statistical test also yielded a cohort value of 5.333, indicating that JKN participants were 5.333 times more likely to give birth in a health facility than non-JKN participants.

4. Relationship between Access to Health Facilities and Choice of Delivery Location

The relationship between access to health facilities and choice of delivery location in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is shown in the following table.

Table 13. Cross-tabulation of the Relationship between Access to Health Facilities and Choice of Delivery Location in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

		Birthplace						p-value
		Non-Health Facilities		Health Facilities		Total		
		n	%	n	%	n	%	
Access to Health Facilities	Easy	5	10,9	41	89,1	46	100,0	0,000
	Difficult	21	65,6	11	34,4	32	100,0	
	Total	**26**	**33,3**	**52**	**66,7**	**78**	**100,0**	

Table 13 shows that of the 46 mothers who gave birth with easy access to health facilities, 89.1% delivered at a health facility, and 10.9% delivered at a non-health facility. Meanwhile, of the 32 mothers giving birth with difficult access to health facilities, 34.4% chose a health facility, and 65.6% chose a non-health facility.

Furthermore, based on the Chi-square statistical test (α=0.05), the p-value was 0.000, indicating $p < 0.05$. This result suggests a significant relationship between access to health facilities and the mother's place of birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency. Furthermore, the statistical test also yielded a cohort value of 6.038, indicating that mothers with easy access to health facilities were 6.038 times more likely to deliver at a health facility than mothers with difficult access.

5. Relationship between Husband's Support and Choice of Place of Birth

The relationship between husband's support and place of birth at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is shown in the following table.

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Table 14. Cross-tabulation of the Relationship between Husband's Support and Choice of Place of Birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

		Birthplace						p-value
		Non-Health Facilities		Health Facilities		Total		
		n	%	n	%	n	%	
Husband's Support	Supportive	8	15,7	43	84,3	51	100,0	0,000
	Not Supportive	18	66,7	9	33,3	27	100,0	
	Total	26	33,3	52	i.e.	78	100,0	

Table 14 shows that of the 51 mothers who received support from their husband4.3% chose a health facility and 15.7% a non-health facility. Of the 27 mothers who did not receive support from their husbands, 33.3% received support from a facility and 66.7% from a non-health facility.

Furthermore, the Chi-square test (α=0.05) yielded a p-value of 0, indicating a p-value <0.05. This result suggests a significant relationship between support and the mother's place of birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency. Furthermore, the statistical test also yielded a cohort value of 4.250, indicating that mothers whose husbands supported their delivery in a health facility were 4.250 times more likely to deliver in a health facility than mothers whose husbands did not.

6. Relationship between Needs and Choice of Delivery Location

The relationship between needs and delivery locations in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is shown in the following table.

Table 15. Cross-tabulation of the Relationship between Needs and Choice of Delivery Location in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

		Birthplace						p-value
		Non-Health Facilities		Health Facilities		Total		
		n	%	n	%	n	%	
Need	Need	13	21,7	47	78,3	60	100,0	0,000
	Less Need	13	72,2	5	27,8	18	100,0	
	Total	26	33,3	52	66,7	78	100,0	

Table 15 shows that of the 60 mothers who needed health facilities, 78.3% chose to deliver at a health facility and 21.7% chose a non-health facility. Methe Hosmer and Lemeshow Goodness-of-Fit, fewer health facilities, 27.8% chose a health facility, and 72.2% chose a non-health facility.

Furthermore, based on the Chi-square statistical test (α=0.05), the p-value was 0.000, meaning p < 0.05. This result suggests a significant association between need and place of birth at the Ambukha Community Health Centre in the Lolofitu Moi District, West Nias Regency. Furthermore, the statistical test also yielded a cohort value of 3.333, indicating that mothers who perceived a need for health facilities were 3.333 times more likely to deliver at a health facility than mothers who perceived less need.

7. The Relationship between Culture and Beliefs and the Choice of Birthplace

The relationship between culture and beliefs and the choice of birthplace at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is shown in the following table.

Table 16. Cross-tabulation of the Relationship between Culture and Beliefs and the Choice of Birthplace in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, 2024

		Birthplace						p-value
		Non-Health Facilities		Health Facilities		Total		
		n	%	n	%	n	%	
Culture and beliefs	Yes	12	22,6	41	77,4	53	100,0	0,004
	No	14	56,0	11	44,0	25	100,0	
	Total	26	33,3	52	66,7	78	100,0	

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Table 16 shows that of the 53 mothers who gave birth, in whom culture and beliefs played a role, 77.4% chose a health facility and 22.6% chose a non-health facility. Meanwhile, of the 25 mothers giving birth in whom culture and beliefs did not play a role, 44.0% chose a health facility and 56.0% chose a non-health facility.

Furthermore, the Chi-square statistical test (α=0.05) yielded a p-value of 0.004, or p <0.05. This result indicates a significant relationship between culture and beliefs, and the mother's place of birth, at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency. Furthermore, the statistical test yielded a cohort value of 2.473, indicating that mothers with specific cultural and religious beliefs about the place of birth were 2.473 times more likely to choose a health facility than mothers with different beliefs.

Multivariate Analysis Results

The multivariate analysis in this study included analysis of independent variables (knowledge, attitudes, insurance membership (JKN), access to health facilities, husband's support, needs, culture, and beliefs) together with the dependent variable (place of delivery).

1. Testing Overall Model Fit

The first step was to assess the model's overall fit to the data. Several statistical tests were conducted to determine this. The hypotheses for determining model fit were:

H0: The hypothesised model fits the data

HA: The hypothesised model does not fit the data

Based on these hypotheses, we will not reject the null hypothesis that the model fits the data. The statistic used is based on the likelihood function. The likelihood L of the model is the probability that the hypothesised model accurately describes the input data. To test the null and alternative hypotheses, L was transformed into -2LogL. This decreases the likelihood (as measured by -2LL).

Table 17. Initial Overall Model Assessment Test -2LL

Iteration History[a,b,c]

Iteration		-2 Log likelihood	Coefficients Constant
Step 0	1	99.308	.667
	2	99.296	.693
	3	99.296	.693

a. Constant is included in the model.
b. Initial -2 Log Likelihood: 99.296
c. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

Based on Table 17, the figure shown in the second column of the last row is 99.296. If the decrease in -2 Log Likelihood (LL) in the model fit test step 1 is -2, then the hypothesised model fits the data. The results of the model fit test 1 are presented as follows:

Table 18. Overall Assessment Test -2LL Step 1

Iteration History[a,b,c,d]

Iteration		-2 Log likelihood	Coefficients							
			Constant	katp(1)	katsk(1)	jkn(1)	katafk(1)	katds(1)	katkb(1)	katbk(1)
Step 1	1	44.744	2.152	-1.997	-1.175	-.011	-.903	.316	-.818	.307
	2	34.583	3.445	-2.838	-2.051	-.114	-1.543	.597	-1.539	.533
	3	31.648	4.556	-3.565	-2.835	-.225	-2.041	.864	-2.146	.623
	4	31.138	5.246	-4.049	-3.338	-.294	-2.289	1.011	-2.489	.629
	5	31.113	5.437	-4.194	-3.485	-.314	-2.338	1.041	-2.576	.627
	6	31.113	5.449	-4.204	-3.495	-.315	-2.340	1.042	-2.581	.626
	7	31.113	5.450	-4.204	-3.495	-.315	-2.340	1.042	-2.581	.626

a. Method: Enter
b. Constant is included in the model.
c. Initial -2 Log Likelihood: 99.296
d. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

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The results in Table 18 show a decrease of 68.183 in the -2LL value for step 1. This result represents the difference between the -2LL value for step 0 (99.296) and the -2LL value for step 1 (31.113). This decrease indicates a better regression model, i.e., that the hypothesised model fits the research data.

2. Coefficient of Determination (Nagelkerke's R Square)

Cox and Snell's R Square is a measure that attempts to mimic the R2 value in multiple regression, based on likelihood estimation techniques and with a maximum value of less than 1 (one), making it difficult to interpret. Nagelkerke's R^2 is a modification of the Cox and Snell coefficients to ensure that its values range from 0 (zero) to 1 (one). This is achieved by dividing the Cox and Snell's R2 values by their maximum values. Nagelkerke's R^2 can be interpreted similarly to the R^2 value in multiple regression. A small value indicates that the independent variables' ability to explain variation in the dependent variables is minimal. A value close to one means the independent variables provide almost all the information needed to predict the variation in the dependent variables.

Table 19. Coefficient of Determination Test

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	31.113[a]	.583	.809

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than .001.

The coefficient of determination in the logistic regression model was obtained from the Nagelkerke R-square value, which was 0.809 (80.9 per cent). This value indicates that 80.9 per cent of the variation in the dependent variable can be explained by the independent variables in this study. The remaining 19.1 per cent is explained by factors outside the research model.

3. Regression Model Fit Test

The fit of the regression model was assessed using the Hosmer and Lemeshow Goodness-of-Fit Test. The Hosmer and Lemeshow Goodness-of-Fit Test tests the null hypothesis that the empirical data fit the model (there is no difference between the model and the data, so the model is considered a good fit).

Table 20. Regression Model Fit Test

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	48.855	6	.000

These results indicate that the Chi-square value obtained in this study using Hosmer and Lemeshow's goodness-of-fit test was 48.855 with a significance level of 0.000. This indicates a significance level greater than 0.05. The model in this study is feasible because it fits the observed data.

4. Classification Matrix

The Classification Matrix shows the predictive power of the regression model.

Table 21. Classification Matrix Test

Classification Table

	Observed		Predicted		
			Birthplace		Percentage Correct
			Midwife	Not midwife	
Step 1	Birthplace	Midwife	23	3	88.5
		Not midwife	2	50	96.2
	Overall Percentage				93.6

a. The cut value is .500

These results indicate that the regression model's predictive ability is 93.6 per cent. This figure suggests that the regression model is 93.6 per cent robust.

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5. Hypothesis Testing

Hypothesis testing is conducted to determine the extent to which all independent variables in the model influence the dependent variable. In logistic regression, the t-test or partial test is replaced by the Wald test. If the Wald test has a significance level below 0.05, the regression coefficient is significant at the 5 per cent confidence level.

Table 22. First Hypothesis Test

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	katp(1)	-4.204	1.504	7.815	1	.005	.015	.001	.285
	katsk(1)	-3.495	1.256	7.743	1	.005	.030	.003	.356
	jkn(1)	-.315	1.336	.056	1	.813	.730	.053	10.000
	katafk(1)	-2.340	1.243	3.540	1	.060	.096	.008	1.102
	katds(1)	1.042	1.688	.381	1	.537	2.835	.104	77.534
	katkb(1)	-2.581	1.701	2.303	1	.129	.076	.003	2.122
	katbk(1)	.626	1.645	.145	1	.703	1.871	.074	47.004
	Constant	5.450	1.382	15.551	1	.000	232.647		

a. Variable(s) entered on step 1: katp, katsk, jkn, katafk, katds, katkb, katbk.

Based on these results, the logistic regression equation formed in this study is:

Y = 5.450 - 4.204 X1 - 3.495 X2 - 0.315 X3 - 2.340 X4 + 1.042 X5 - 2.581 X6 + 0.626 X7

The research hypothesis was tested at a significance level of 5 per cent (0.05). Based on these results, only the knowledge (X1) and attitude (X2) variables were continued in the following hypothesis test.

Table 23. Second Hypothesis Test

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	katp(1)	-4.484	1.101	16.575	1	.000	.011	.001	.098
	katsk(1)	-3.243	1.115	8.462	1	.004	.039	.004	.347
	Constant	4.232	1.074	15.512	1	.000	68.827		

a. Variable(s) entered on step 1: katp, katsk.

Based on these results, it is known that the sig. The value of the knowledge variable is 0.000, and the attitude variable is 0.004, indicating that both variables influence the choice of delivery location. However, based on the B value, the knowledge variable has a greater influence than the attitude variable. Therefore, it can be concluded that the most dominant independent variable in determining the choice of place of delivery for mothers in the working area of the Ambukha Health Centre, Lolofitu Moi District, West Nias Regency is knowledge.

Discussion

Relationship between Mothers' Knowledge and Place of Delivery

The results of this study indicate that the majority (61.5%) of mothers' knowledge regarding childbirth at health facilities in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is categorised as good. In comparison, the remaining 38.5% is classified as poor. This indicates that mothers' knowledge regarding the advantages of giving birth at health facilities is quite adequate. However, the remaining 38.5% have low knowledge, which poses a challenge for health workers to provide education to increase public health awareness. This is likely due to uneven population distribution, resulting in limited access to health information, particularly in areas with few health facilities. Therefore, policies such as home visits are needed to reach communities living far from or with limited access to health facilities.

The results of this study also indicate a relationship between knowledge and place of delivery in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency. Furthermore, the presence of good knowledge but giving birth outside of a health facility and low knowledge but giving birth in a health facility demonstrates that knowledge is not the sole variable associated with birth location choice, but also other factors such as attitudes, insurance coverage, access to health facilities, husband's support, needs, and culture and beliefs.

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The results of this study align with those of Wildian. et al. (2023), who found a significant relationship between knowledge and birth location choice at the Kairatu Community Health Centre, Kairatu District, West Seram Regency. [6]. Similarly, research by Ayele et al. (201.9) also demonstrated a significant relationship between maternal knowledge and birth location choice. [7]. A similar study by Sitti et al. (2022) found a relationship between knowledge and the choice of birth attendant among mothers in the Katobu Community Health Centre area. [8]. Likewise, the results of Kamila NA., et.al (2018) study stated that there was a significant relationship between maternal knowledge and the choice of birth attendant, with an OR = 5.067, meaning that mothers with good knowledge were 5 times more likely to give birth in health services compared to mothers with poor knowledge. [9]. Another study, as conducted by Yusnira (2020), concluded that there was a significant relationship between maternal knowledge and the choice of birth attendant. [10].

The relationship between maternal knowledge and place of birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is contextually driven by the source of maternal expertise, which comes not only from health workers but also from family, community leaders, and the experiences of previous mothers. When maternal knowledge is predominantly based on information provided by health workers, they tend to choose a health care facility for their birth. However, when the opposite is true, mothers will follow traditions or recommendations from those around them, including family and respected local figures.

The results of this study illustrate the importance of knowledge in influencing birth location choice. Knowledge, derived from experience and information acquired through the senses, plays a crucial role in shaping one's actions. [11]. Maternal knowledge of obstetric danger signs also plays a role in the decision to use health care professionals during childbirth, as concerns about obstetric problems can encourage mothers to seek more professional help. [12].

Good knowledge enables mothers to skillfully administer emergency care, a key factor in ensuring the safety of both mother and baby during childbirth. [13]. Knowledge can be acquired directly or through others' experiences. Knowledge is a collection of facts and theories that enable someone to solve the problems they are facing. [14].

Therefore, mothers' level of knowledge during labour is crucial, especially when choosing a place to give birth. This knowledge covers essential aspects of pregnancy, such as self-care and fetal care, early detection of danger signs, and the labour process itself. [15]. Therefore, efforts are needed to improve mothers' knowledge during labour as a crucial step toward ensuring the safety and health of mothers and babies. This improvement can be achieved through counselling for mothers in labour or mothers of couples of childbearing age (PUS) who are still potential for pregnancy.

Broadly speaking, counselling methods are divided into two: didactic methods (one-way, such as lectures, films, leaflets, booklets, posters, broadcasts) and Socratic methods (two-way, such as group discussions, panel debates, seminars, demonstrations). The counselling method is one factor influencing the achievement of optimal counselling results. Based on the target and content of the counselling, the effective counselling method in this case is individual counselling. In health counselling, this method is used to foster new behaviours or someone who has begun to be interested in a change in behaviour or innovation. The basis for using this individual approach is that each person has different problems or reasons related to the acceptance or new behaviour. Forms of this approach include guidance and interviews.

The Relationship Between Mothers' Attitudes and Place of Birth

The results of this study indicate that the majority (69.2%) of mothers' attitudes toward giving birth at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, were positive. In comparison, the remainder (30.8%) were negative. This indicates that mothers' attitudes toward giving birth at health facilities are quite adequate. However, the remaining 30.8% held negative attitudes, which presents a challenge for health workers in providing education to change community attitudes toward health in a positive direction. This is likely due to the persistence of respondents with limited knowledge. Therefore, policies such as home visits are needed, especially to reach communities living far away or with difficulty reaching health facilities.

The results of this study also indicate a relationship between attitudes and place of birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency. Furthermore, the presence of positive attitudes toward giving birth outside a health facility and negative attitudes toward giving birth in a health facility demonstrates that attitude is not the sole factor influencing birth location choice, but rather other

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factors such as knowledge level, insurance coverage, access to health facilities, husband's support, needs, and culture and beliefs.

This finding aligns with Sumarni, T. (2022), who demonstrated a relationship between attitude and the choice of birth attendant. [16]. Similarly, research by Limbong et al. (2020) demonstrated a significant relationship between attitude and choice of birth attendant. [17]. Similar findings are also found in Kamila, N. et.al (2020) study, which concluded that mothers who chose health facilities were more likely to have positive attitudes toward health care facilities (16 women (69.6%), while those who decided non-health facility birth locations were more likely to have negative attitudes (3 women (42.9%) [9]. Similarly, research by Aridasari, D. et al. (2021) showed that maternal attitudes were significantly related to the choice of health care facility for delivery (p-value = 0.032). [18].

This relationship between maternal attitudes and place of delivery at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is contextually driven by the source of knowledge, a key factor in shaping attitudes. When a mother's knowledge is predominantly based on information provided by health workers, this will lead to a positive attitude toward health care facilities as a place to give birth. However, if the opposite is true, meaning that knowledge assistance is predominantly based on family and community leaders who recommend giving birth through traditional birth attendants, the mother will have a negative attitude toward health care facilities.

According to Yusnira (2020), attitude is a mental and neural state of readiness regulated through experience that exerts a dynamic or directed influence on an individual's response to all objects or situations related to it, a combination of affective, cognitive, and conative factors. [10]. This opinion aligns with Azwar's, as quoted by Aridasari, D. et al. (2021), who stated that a person's attitude influences their behaviour, particularly in the health sector. A mother's attitude during labour influences her choice of birth attendant or delivery location. A positive attitude toward birth attendants will lead a mother to choose a health worker/health facility to assist with the delivery process. [18].

Therefore, efforts are needed to change mothers' attitudes toward delivery services in health facilities by providing positive information about the advantages of giving birth in health facilities compared to those outside of health facilities.

Similar to efforts to increase knowledge, efforts to change individual attitudes should be conducted using didactic methods on a possible dual basis. Information is used to change a person's behaviour toward an attitude or innovation. This personal approach is based on the fact that each person has different problems or reasons related to accepting or adopting new behaviours. This approach includes guidance and interviews.

The Relationship between Insurance Participation and Place of Birth

The results of this study indicate that the majority (61.5%) of mothers giving birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, are JKN participants, while the remaining 38.5% are not. The fact that 38.5%, or 30 mothers giving birth, are not yet JKN participants underscores the need for public awareness and identification of the reasons for their families' lack of JKN coverage. This is because one indicator of Universal Health Coverage (UHC) is that all Indonesians are covered by health insurance, whether due to a lack of awareness, economic factors, or other factors.

Interviews with those who have not yet participated in the JKN program generally indicate that this is due to economic factors. In essence, this group is mainly underprivileged, based on income indicators. It is included in social assistance (the Family Hope Program), so this group is automatically registered as BPJS participants under the Central PBI scheme. The characteristics of the West Nias community are that they only learn about their BPJS membership if their family or themselves seek treatment at a health care facility (registered/unregistered or active/inactive).

The results of this study also indicate a relationship between insurance membership and maternal delivery location choice within the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency. Furthermore, the presence of JKN participants who gave birth at non-healthcare facilities, as well as non-JKN participants, and JKN participants who gave birth at health care facilities, demonstrates that JKN membership is not the sole variable associated with delivery location choice, but also other variables such as knowledge level, attitudes, access to health care facilities, husband's support, needs, and culture and beliefs.

These results align with those of Nurwahyuni, A. (2023), which showed that the mother's health insurance coverage influences the choice of delivery facility. This study also concluded that mothers with health insurance (JKN) were 1.728 times more likely to deliver at a health facility than mothers without [19].

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Similarly, a study by Laksono and Wulandari (2022) found that women with health insurance were 1.363 times more likely to deliver at a health facility than uninsured women. [20].

Much earlier, research conducted by Were et al. (2017) concluded that there was a link between health service utilisation and health insurance coverage, particularly for mothers in labour and delivery. They found that mothers with health insurance were 23% more likely to deliver in a health facility and 20% more likely to have access to a skilled midwife than mothers without insurance. [21].

The relationship between insurance coverage and the mother's place of birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is contextually driven by the family's ability to finance delivery. Paying for childbirth out of pocket certainly requires sufficient financial preparation beforehand. The availability of the National Health Insurance (JKN), which waives delivery costs, will make it more preferable, leading mothers to choose healthcare facilities as their delivery locations, since JKN applies only to services provided there.

Since 2014, Indonesia has entered a new era in its healthcare insurance system, the National Health Insurance (JKN). The law mandates that all Indonesians participate in JKN. The principle of cooperation (gotong royong) underpins JKN's implementation. The BPJS, as the social security administering body, uses the premiums paid by participants to provide benefits to them through a cross-subsidy system. The state supports the underprivileged through the Contribution Assistance Recipient (PBI) membership. Participants in this category receive their premiums from the government through the state budget (APBN) or regional budget (APBD) [19] .

Therefore, it is necessary to periodically update data on BPJS participants who are free of contributions among people experiencing poverty (hopeful families) or who need to be financed through the APBD, so that, in turn, the cost factor is no longer an obstacle in choosing a health facility as a place to give birth.

The Relationship between Access to Health Facilities and Place of Birth

The results of this study indicate that the majority (59.0%) of women giving birth had easy access to health facilities in the Ambukha Community Health Centre (Puskesmas) working area, Lolofitu Moi District, West Nias Regency, while the remainder (41.0%) had difficult access. 41.0% of women had difficulty accessing health facilities due to long distances from home and limited transportation to and from them.

The results also indicate a relationship between access to health facilities and the choice of place of birth in the Ambukha Community Health Centre working area, Lolofitu Moi District, West Nias Regency. Furthermore, the presence of women who had difficulty accessing health facilities but gave birth at health facilities, and those who had easy access but gave birth at non-health facilities, demonstrates that access to health facilities is not the sole variable associated with choice of place of birth, but also other factors such as knowledge, attitudes, health insurance coverage, husband's support, needs, and culture and beliefs.

The results of this study align with those of Adriana, N., et.al. (2021, who found a relationship between distance from residence to health facilities and the choice of birth attendants among mothers in the Katobu Community Health Centre (Puskesmas) [22]. Similarly, Puspitasari, D. (2019) also found that distance from health facilities influenced the choice of birth attendants at the Molopatodu Community Health Centre. [23]. Similar research, such as that of Ladesta, N. (2021), concluded that mothers with limited access to health facilities were more likely (68.0%) to choose birth attendants outside of health facilities than those with easy access. [24]. Sumarni's (2022) study also showed a significant relationship between distance to health facilities and the choice of birth attendants, with proximity to health facilities resulting in a 1.5-fold greater likelihood of choosing a health attendant than among those with long distances. The relationship between access and the mother's place of birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is contextually driven by the ease of access to health facilities, which increases the likelihood of choosing a health facility. Conversely, if the traditional birth attendant's home is closer or more accessible than the health facility, the possibility of selecting that conventional birth attendant is greater. It should be noted that there is no regular public transportation available in this area. Hence, the only determinant of access is the distance from the home to the health facility. [16].

According to Notoatmodjo (2012), distance to health facilities also contributes to the choice of birth attendant. Access to information and positive attitudes do not guarantee successful behaviour; therefore, other factors are needed, namely, the proximity of the health facility to the choice of birth attendant. A health facility that is far from residential areas will reduce the use of birth attendants, while a relatively closer distance will increase the choice of birth attendants. Distance to health facilities also contributes to the choice of birth attendants. Positive attitudes do not guarantee successful behaviour; therefore, other factors are needed,

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namely, ease of access to health facilities and the choice of birth attendants. Difficult access to health facilities will reduce the use of skilled birth attendants, while easy access will increase the choice of skilled birth attendants [11].

Therefore, when building health care facilities, it is necessary to consider the distance and transportation to and from residential areas to increase utilisation, including for delivery. If this is no longer feasible, it is essential to revitalise the role of community health centre staff to conduct regular home visits, as mandated by Minister of Health Regulation (Permenkes) Number 39 of 2016 concerning Family Health, which regulates the implementation of the Healthy Indonesia Program (PIS) with a Family Approach. This program aims to improve access to health care for families and their members.

The Relationship Between Husband's Support and Place of Birth

The results of this study indicate that the majority (65.4%) of mothers at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, received support from their husbands to deliver at a health facility. In comparison, the remaining 34.6% did not. The 34.6%, or 27, mothers who did not receive support from their husbands were due to several factors, including their husbands' lack of knowledge about the importance of giving birth at a health facility. Husbands did not understand the risks of giving birth outside of a health facility and without the assistance of a health professional. They believed that traditional birth attendants were more experienced than health professionals and provided comfort for the mother and family. Economic factors were also cited as reasons why husbands did not support mothers giving birth at a health facility. Husbands believed that giving birth at a health facility was expensive, while with traditional birth attendants, the cost was cheaper and could even be paid in instalments or exchanged for goods. Furthermore, the distance to the health facility was also cited as a reason for husbands' lack of support. The results of this study also indicate a relationship between the husband's support and mothers' choice of place of birth at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency. Furthermore, the presence of mothers who did not receive husband's support but delivered in health facilities, and those who did receive husband's support but delivered in non-health facilities, demonstrates that husband's support is not the sole factor associated with choice of place of birth, but rather other factors such as knowledge, attitudes, health insurance coverage, access to health facilities, needs, and culture and beliefs.

These results align with those of Aryani, Y., & Islaeni, I. (2018), which demonstrated a relationship between family support and choice of birth attendant. [25]. Other research also indicates a significant relationship between the husband's support and the choice of birth attendant. Of the 60 respondents, 76.7% of mothers who received their husband's support to deliver in a health facility offered in a health facility [18].

The majority of mothers who chose to deliver outside a health facility did not receive family support (45.2%). This relates to family support for the choice of birthing location, as giving birth with a traditional midwife is common and part of the culture. [26]. Families also believe that giving birth is a woman's responsibility. [27]. Characteristics of birthing support include simplicity, effectiveness, affordability, and low risk. [8]. Improved labour progress and improved outcomes lead to improved birth support. [28].

The relationship between husband's support and the mother's birth location in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is contextually driven by the tradition that the husband is the head of the family, so any decisions within the household, including the location of birth, rest with the husband. Likewise, in terms of costs, the husband plays a significant role and is responsible for covering all necessary expenses related to the birth.

The choice of a birthing facility is closely linked to the husband's support. Husband's support is crucial for ensuring a wife's peace of mind. Husbands and families can assist their wives with their responsibilities, allowing them to rest, especially before delivery. [25]. This is reinforced by Sari, K. (2019) 's statement that family support is also a factor in selecting a birth attendant. [12].

Family support encompasses the family's attitudes, actions, and acceptance of its members, including informational, appraisal, instrumental, and emotional support. Family social support refers to social support that family members perceive as accessible or readily available, ready to assist when needed. [18].

Families play a crucial role in choosing a place of birth. [13]. This is particularly true for relatively young women, who may lack the capacity to make independent decisions. They believe that choosing an older person is best because they are more experienced. [15]. The greater the family support, the greater the likelihood that women in labour will choose a health professional as their birth attendant [28].

Therefore, to increase the utilisation of health facilities for delivery, education should not only be provided to mothers but also to husbands and other family members. This will improve family support,

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especially from husbands, as a consequence of adequate understanding of delivery in health facilities. Education methods are divided into two: didactic methods (one-way, such as lectures, films, leaflets, booklets, posters, radio broadcasts) and Socratic methods (two-way, such as group discussions, panel debates, seminars, demonstrations). Based on the objectives and content of the education, practical education methods include group discussions, brainstorming, snowballing, role-playing, and simulations.

Relationship between Need and Place of Birth

The results of this study indicate that the majority (76.9%) of mothers giving birth at the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, required delivery at a health facility. In comparison, the remaining 23.1% felt less need, meaning it was only an alternative. In this case, less need means not really needing a safe delivery, not necessarily having to be assisted by trained personnel, not having a difference between giving birth in a health facility and one not in a health facility, not really needing comprehensive services and facilities, and not having to immediately go to a health facility if symptoms of an abnormality arise. 23.1% (18) of mothers who felt they did not need a health facility for delivery cited low knowledge and attitudes toward health care services in health facilities. Mothers believed that giving birth at home and in a health facility were equally effective. In fact, they felt more comfortable giving birth at home than in a health facility because they were close to other family members. Furthermore, within the Ambukha Community Health Centre's four-village work area, there are only two auxiliary health centres (Pustu): one in Hilibowo Mau Village and one in Sisobawino II Village, with none in other villages. In other words, health facilities are not evenly distributed throughout the Ambukha Community Health Centre's work area. The availability of only two Pustu units, with inadequate facilities, and the absence of village midwives within the Ambukha Community Health Centre's work area have led to public distrust of health facilities for delivery.

The results of this study also indicate a relationship between need and the choice of delivery location within the Ambukha Community Health Centre's work area in the Lolofitu Moi District, West Nias Regency. Furthermore, the presence of mothers who did not require health facilities but gave birth at health facilities, and those who did, but gave birth at non-health facilities, demonstrates that need is not the sole variable associated with choice of delivery location; other variables include knowledge, attitudes, health insurance coverage, access to health facilities, husband's support, and culture and beliefs. The results align with Puspitasari's (2019) research, which concluded that there is a relationship between need and the choice of delivery location in the Alert Village, Kaliangkrik Community Health Centre, Magelang Regency. Research also showed a relationship between need and choice of delivery location in the Alert Village, Kaliangkrik Community Health Centre, Magelang Regency. [23]. Another similar study, conducted by Pratiwi, A. et al. (2021), concluded that there is a relationship between perceived maternal health needs and utilisation of delivery assistance at health facilities, with a strong relationship within the Barebbo Community Health Centre, Bone Regency. [27].

The relationship between need and mother's delivery location in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is contextually driven by the perception that if a health professional is needed for delivery, they are available at the health facility. Similarly, the need for services with guaranteed cleanliness is only available at the health facility.

This suggests that if a mother feels vulnerable during childbirth, she is more likely to visit a health facility. Furthermore, efforts to utilise health facilities during delivery are also driven by the seriousness of the delivery situation. If a mother feels vulnerable to problems during labour, she will likely take specific actions. This action depends on the perceived benefits and the obstacles encountered in taking the action. To achieve appropriate acceptance of the vulnerability, urgency, and benefits of the action, external cues such as information, mass media messages, advice, and recommendations from friends or other family members are needed. [11]. This is what needs to be done.

The Relationship between Culture and Beliefs and Place of Birth

The results of this study indicate that for the majority (67.9%) of women giving birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, culture and beliefs played a role in determining their place of birth. In comparison, the remainder (32.1%) did not. The cultural roles referred to include the belief in seeking medical care from a traditional healer, the need to conceal pregnancy, the need for rituals during pregnancy, the use of special drinks or concoctions during pregnancy, taboos during pregnancy, and items that must be carried during pregnancy.

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The results of this study also indicate a relationship between culture and beliefs and the choice of place of birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency. Furthermore, the presence of mothers who were influenced by local culture and beliefs but gave birth in health facilities, and those who were not influenced by local culture and beliefs but gave birth outside of health facilities, demonstrates that culture and beliefs are not the only variables associated with birth location choice, but also include other variables such as knowledge level, attitudes, health insurance coverage, access to health facilities, husband's support, and needs.

These results align with Puspitasari 's (2019) study, which demonstrated a relationship between culture and beliefs and birth location choice in Siaga Village, Kaliangkrik Community Health Centre, Magelang Regency. [23]. Furthermore, Aryani Y, Islaeni I. (2018) study also demonstrated a relationship between culture and beliefs and birth location choice in the Berseri Community Health Center area of Pelalawan Regency (p=0.028), with an odds ratio (OR) of 3.162, indicating that mothers who received support from culture and beliefs were 3.162 times more likely to choose a health facility for delivery compared to mothers who did not receive support from culture and beliefs. [25].

The relationship between culture and beliefs and the place of birth in the Ambukha Community Health Centre, Lolofitu Moi District, West Nias Regency, is contextually driven by an understanding of social life. Humans, as individuals, are also social beings. It's easier to do things when they receive social support. Mothers will choose a health facility for delivery if the surrounding community accepts it as usual.

According to Notoadmodjo (2012), the culture and beliefs prevailing in a region can influence the place of birth, such as where the mother receives her prenatal checkup and where she delivers her baby. Cultural influences on the place of birth include: regional culture and beliefs can discourage mothers from seeking prenatal checkups; regional culture and beliefs can lead to malnutrition due to dietary restrictions; and regional culture and beliefs can lead mothers to believe that these cultural practices can facilitate a smooth delivery. [11]. Furthermore, according to Susianty, N. et al. (2020), the choice of a traditional birth attendant to assist with home births is primarily driven by cultural factors and the belief that traditional birth attendants can support traditional childbirth ceremonies. [29]. In the cultural context of Indonesian society regarding the choice of birthing location, this is not always determined by the husband or wife awaiting the baby's birth, but rather by other older relatives of higher social status. [30] . This is supported by Nolan's (as quoted by Ladesta, N., 2021) statement that pregnant women are influenced by what they see and hear, especially from their own parents. If their parents are accustomed to giving birth at a particular health facility, their children will do the same. [24]. A similar opinion was expressed by Aryani Y and Islaeni I. (2018), who stated that mothers with supportive cultural and religious beliefs are more likely to deliver in health facilities because they follow the advice and counsel of their husbands and elders. The customs and culture of rural communities, which always follow the opinions and advice of local elders, make mothers more likely to adhere to these customs, including where to give birth. [25].

Therefore, collaboration between health workers and traditional or local community leaders is needed to promote the benefits of utilising health services, so that health matters become part of the local community's culture and beliefs.

Conclusion

Based on the findings of this study, it can be concluded that the choice of delivery location within the working area of Ambukha Public Health Centre is influenced by a multidimensional interplay of internal and external maternal factors. Significant associations were found between delivery place selection and maternal knowledge, attitudes, National Health Insurance (JKN) membership, accessibility of health facilities, husband's support, perceived needs, and local cultural beliefs. Among the seven factors examined, logistic regression analysis identified maternal knowledge as the most dominant variable, as indicated by the highest regression coefficient (B = –4.204) and strong statistical significance (p = 0.005). These findings suggest that improving maternal health literacy about the importance of facility-based delivery is a key determinant of behavioural change. The policy and intervention implications recommended include a tiered approach prioritizing evidence-based health education programs for mothers and families, supported by strategic measures such as: (1) optimizing JKN enrollment among low-income communities, (2) improving road infrastructure and the availability of emergency maternal transportation, (3) implementing participatory approaches involving husbands and community leaders in advocating for safe delivery practices, and (4)

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integrating positive cultural practices into the maternal referral system. Cross-sectoral synergy is expected to accelerate progress toward achieving universal coverage of standardised facility-based deliveries.

Conflict of Interest

The author declares no competing interests and asserts that the research was conducted autonomously, safeguarding the impartiality and validity of the results.

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