



## KNOWLEDGE AND ANTENATAL CARE VISITS AS PREDICTORS OF THE DECISION TO GIVE BIRTH AT HOME

### PENGETAHUAN DAN KUNJUNGAN ANTENATAL CARE SEBAGAI PREDIKTOR PEMILIHAN TEMPAT BERSALIN DIRUMAH

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#### Abstract

Home birth selection is a complex decision influenced by various factors. This study aimed to determine the relationship between knowledge and antenatal care (ANC) visits with the decision-making of home birth in the working area of Mapaddegat Public Health Center, Mentawai Islands Regency. This research was a descriptive analytic study with a case-control design, conducted from February to May 2025, involving mothers who gave birth and were recorded in the maternal cohort data from January 2023 to December 2024. A systematic random sampling technique was applied, consisting of 21 respondents in the case group and 42 respondents in the control group. Data were analyzed using univariate and bivariate analysis with the chi-square statistical test. The univariate results showed that 74.6% had high knowledge, and 57.2% had more than four ANC visits. The bivariate analysis revealed a significant relationship between knowledge ( $p = 0.011$ ; OR = 5.455) and the number of ANC visits ( $p = 0.015$ ; OR = 4.462) with the decision to give birth at home. It can be concluded that there is a relationship between knowledge and the number of ANC visits with home birth decision-making. It is recommended for the Mapaddegat Public Health Center staff to strengthen health promotion regarding delivery in health facilities and develop innovations to increase the coverage of facility-based deliveries.

**Keywords :** Knowledge, Number of Antenatal Care (ANC) Visits, Home Birth



### Abstrak

Pemilihan persalinan di rumah merupakan keputusan yang kompleks yang dipengaruhi oleh berbagai faktor. Penelitian ini bertujuan untuk mengetahui hubungan pengetahuan dan kunjungan antenatal care dengan pengambilan keputusan pemilihan bersalin di rumah di Wilayah Kerja Puskesmas Mapaddegat Kabupaten Kepulauan Mentawai. Jenis penelitian *deskriptif analitik* dengan desain *case control*, yang telah dilakukan pada bulan Februari- Mei 2025 terhadap Ibu bersalin yang tercatat dalam data Kohort Ibu bulan Januari 2023 s/d Desember tahun 2024 dengan menggunakan teknik *systematic random sampling* yaitu sebanyak 21 orang untuk kelompok kasus dan 42 orang untuk kelompok kontrol. Data dianalisa dengan *univariat* dan *bivariat* dengan uji statistik *chi-square*. Hasil analisis univariat 74,6% pengetahuan tinggi, 57,2% jumlah kunjungan ANC > 4 kali. Hasil analisa bivariat terdapat hubungan pengetahuan ( $p$  0,011 dan OR 5,455) dan jumlah kunjungan ANC ( $p$  0,015 dan OR 4,462), dengan pengambilan keputusan pemilihan bersalin di rumah. Dapat disimpulkan ada hubungan pengetahuan dan jumlah kunjungan ANC dengan pengambilan keputusan pemilihan bersalin di rumah. Disarankan kepada petugas puskesmas Mapaddegat untuk melakukan peningkatan dan penguatan promosi persalinan di fasilitas kesehatan serta inovasi untuk meningkatkan cakupan persalinan pada fasilitas kesehatan.

**Kata Kunci :** Pengetahuan, Kunjungan ANC, Persalinan dirumah

## 1. INTRODUCTION

Maternal mortality is a serious health problem that can affect the development of children and families as a whole (Ministry of Health RI, 2024). One of the efforts to reduce the Maternal Mortality Ratio (MMR) is by encouraging every delivery to be assisted by trained health professionals, namely obstetricians/gynecologists (SpOG), general practitioners, and midwives, at health care facilities (Rumondang et al., 2021b).

The choice of place of delivery is a determining factor in ensuring a safe delivery process. According to the Regulation of the Minister of Health (Permenkes) No. 97 of 2014, Article 14 paragraph 1, it is stated that "delivery must be carried out in health facilities." However, the utilization of health facilities for childbirth in the community remains very low compared to the expected target of 100% (Marwani et al., 2023). The success of this program is measured through the indicator of the percentage of deliveries conducted in health facilities (Rumondang et al., 2021b).

Globally, the proportion of home births varies. Some developed countries such as Finland and Japan have nearly 100% of deliveries attended by health professionals, while developing countries such as Nigeria, Bangladesh, and Afghanistan report much lower rates. According to World Bank data in 2018, the proportion of births attended by health professionals was 80.89% globally, and 75% in lower-middle-income countries. In developing countries, the proportion of deliveries attended by health personnel was 43.3% in Nigeria, 52.7% in Bangladesh, 58.8% in Afghanistan, and 67.3% in Mali. In contrast, developed countries such as Finland reached 100% and Japan 99.9%, influenced by several factors such as economic conditions and human resources (Siska, 2022).



Based on the Indonesia Health Profile 2024, the coverage of facility-based deliveries was 87.2%, showing a decrease from the previous year at 87.9%. In West Sumatra Province, facility-based delivery coverage was 97.86% in 2021, 98% in 2022, but decreased significantly in 2023 and 2024, recorded at 73.6% and 75.3% respectively. The Mentawai Islands District is one of the areas with the lowest facility-based delivery coverage in West Sumatra Province, with 74.52% in 2021, 80% in 2022, and 55.85% in 2023.

Non-facility childbirth is influenced by several factors. According to Andersen's Behavioral Model of Health Service Utilization, the decision to use health services is influenced by three components: (1) predisposing factors, including knowledge, attitudes, beliefs, and values; (2) enabling factors, including family resources; and (3) need factors, which directly affect health service utilization (Yuliana & Elia, 2022).

Mapaddegat Public Health Center is one of the community health centers in Mentawai District. The coverage of facility-based deliveries at Mapaddegat PHC was 51% in 2023 and 54.15% in 2024. Meanwhile, non-facility deliveries in 2023 were 13% assisted by traditional birth attendants and 18% assisted by non-midwife health workers. In 2024, the figures were 1.99% assisted by traditional birth attendants and 0.66% by non-midwife health workers. This situation requires serious attention from the Mentawai District Health Office because the coverage is still below the Ministry of Health's strategic target of 85%. In fact, health facilities are available in almost every sub-district, with PONE community health centers, village-level health posts (poskesdes), and auxiliary health centers (pustu) capable of handling normal deliveries, supported by a referral system. There is also the maternity insurance program to provide free delivery services in health facilities. However, home deliveries still persist.

A preliminary survey conducted through interviews on January 20, 2025, with five pregnant women in the area showed that they gave birth at home assisted by traditional birth attendants. Four of the respondents had limited knowledge about safe and hygienic delivery practices. Four of the pregnant women reported that they had accessed antenatal care during pregnancy, but three of them still chose to give birth at home due to feelings of anxiety about leaving their other children at home.

Based on the above background, the researcher intends to conduct a study entitled "Knowledge and Antenatal Care Visits as Predictors of Home Birth Selection."

## 2. RESEARCH METHOD

The type of research conducted was quantitative research using a case-control approach. The population consisted of all postpartum mothers recorded in the Maternal Cohort data from January 2023 to December 2024, totaling 767 individuals. The cases in this study were all mothers who delivered outside health facilities (at home or with traditional birth attendants), based on secondary data from the Maternal Cohort for the period 2021–2023 in the working area of Mapaddegat Public Health Center, amounting to 21 cases. A 1:2 ratio was applied between the case and control samples, with the control group consisting of 42 individuals. Members of the population included in the sample were selected using systematic random sampling, namely every element with a number that was a multiple of 18, such as No. 1, 19, 37, and so on, until reaching a total of 42 respondents. The inclusion criteria were: willingness to participate as respondents throughout the study, ability to read and write, ability to communicate effectively, and being recorded in the maternal cohort. The data used in this study were primary data obtained directly through observation of the selected respondents using a



questionnaire, as well as direct interviews with the respondents who were included in the sample.

### 3. RESULTS AND DISCUSSION

This study on the relationship between knowledge and the number of antenatal care (ANC) visits with the decision-making in choosing home birth in the working area of Mapaddegat Public Health Center, Mentawai Islands Regency, was conducted from February to May 2025 involving 63 respondents. The respondents were categorized into two groups: a case group consisting of 21 respondents and a control group consisting of 42 respondents. The detailed characteristics of the respondents are presented in Table 1:

**Table 1. Respondent Characteristics**

Respondent Characteristics	f	%
<b>Age (years)</b>		
<20	7	11,1
20-35	47	74,6
>35	9	14,3
<b>Occupation</b>		
Civil Servant	2	3,2
Teacher	1	1,6
Contract Warker	13	20,6
Homemaker	47	74,6

**Table 2. Frequency Distribution of Mothers' Knowledge**

Knowledge	Case		Control		Total	
	f	%	f	%	f	%
Low	10	15,9	6	9,5	16	25,4
High	11	17,9	36	57,1	47	74,6
Total	21	33,3	42	66,7	63	100

**Table 3. Frequency Distribution of the Number of ANC Visits**

Number of ANC Visits	Case		Control		Total	
	f	%	f	%	f	%
<4 x	14	22,2	13	20,6	27	42,9
>4 x	7	11,1	29	46	36	57,1
Total	21	33,3	42	66,7	63	100

The analysis results regarding the frequency distribution of mothers' knowledge (table 2) about delivery facilities in the working area of Mapaddegat Public Health Center, Mentawai Islands District in 2025 showed that out of 63 respondents, the majority had a high level of knowledge about delivery facilities, namely 47 respondents (74.6%). And results regarding the frequency distribution of the number of ANC visits (table 3) among respondents in the working area of Mapaddegat Public Health Center, Mentawai Islands District in 2025 showed that out of 63 respondents, more than half had >4 ANC visits, namely 36 respondents (57.1%).



**Table 4. The Relationship Between Knowledge and Decision-Making in Choosing Home Delivery in the Working Area of Mapaddegat Public Health Center, Mentawai Islands District, 2025**

Knowledge	Home delivery decision-making				Total		P value	OR
	Case		Control		n	%		
	n	%	n	%				
Low	10	62,5	6	37,5	16	100	0,011	5,455 (1,616- 18,414)
High	11	23,4	36	76,6	47	100		
Total	21	33,3	42	66,7	63	100		

**Table 5. The Relationship between ANC Visits and Decision-Making in Choosing Home Delivery in the Working Area of Mapaddegat Health Center, Mentawai Islands Regency, 2025**

Number of ANC Visits	Home delivery decision-making				Total		P value	OR
	Case		Control		n	%		
	n	%	n	%				
<4 x	14	51,9	13	48,1	27	100	0,015	4,462 (1,458- 13,654)
>4 x	7	19,4	29	80,6	36	100		
Total	21	33,3	42	66,7	63	100		

The analysis results assessing the relationship between knowledge and decision-making in choosing home delivery showed a significant association in the Working Area of Mapaddegat Health Center, Mentawai Islands Regency, in 2025, with a p-value = 0.011 ( $p < 0.05$ ) and an OR = 5.455. This indicates that mothers with low knowledge have more than 5 times the likelihood of making the decision to deliver in non-healthcare facilities.

The findings of the analysis revealed a significant association between the number of ANC visits and the decision to choose home delivery in the working area of Mapaddegat Health Center, Mentawai Islands Regency, in 2025 ( $p = 0.015$ ;  $p < 0.05$ ; OR = 4.462). Mothers who attended ANC visits more than four times were found to be over four times more likely to decide on home delivery in non-healthcare facilities.

## Discussion

The researchers would like to discuss the research findings which aim to answer the problem statement. This research focuses on the relationship between knowledge and the number of antenatal care (ANC) visits with the decision-making process of home delivery. The results showed a p-value for knowledge = 0.011 and an OR = 5.455, indicating that mothers with low knowledge have more than 5 times the likelihood of making the decision to deliver outside health facilities. Meanwhile, for the number of ANC visits, the p-value = 0.015 and the OR = 4.462, indicating that mothers with more than 4 ANC visits are over 4 times more likely to decide on delivery outside health facilities.

This finding is consistent with the study by Gea et al. (2022) on the Analysis of Factors Associated with the Choice of Delivery Place in the Working Area of Namohalu Esiwa Health Center, North Nias Regency, which showed that there is a relationship between knowledge and the choice of delivery place among mothers who are about to give birth ( $p = 0.001$ ;  $p < 0.05$ ). Similarly, the study by Rukmaningsih (2024) on Factors Associated with the Choice of Delivery in Health Facilities in the Working Area of UPT Kampuri Health Center showed that the chi-square test obtained a p-value = 0.003 ( $p < 0.05$ ), which means that  $H_0$  was rejected. It



can be concluded that there is a relationship between ANC visits and the choice of birth attendants.

According to the researchers' assumptions, based on the study results, respondents with good knowledge mostly chose to give birth in health facilities compared to a small proportion of mothers who chose home delivery. In this study, there were still mothers with good knowledge who did not deliver in a fully equipped health facility. Based on the researchers' observations, several factors influenced mothers to deliver at home. Mothers with poor knowledge were more likely to choose non-health facilities (home) for delivery. This is because they lack awareness that complications may occur at any time during childbirth, and if delivery takes place at home with complications, it cannot be managed properly and promptly.

The primary objectives of antenatal care (ANC) are to monitor pregnancy progress, ensure maternal and fetal health, prepare for safe delivery, promote maternal well-being, and reduce maternal and neonatal morbidity and mortality. Complete and regular ANC visits significantly influence mothers' delivery decisions. Women who consistently attend ANC are generally more prepared for childbirth and more likely to choose health facilities, thereby enhancing maternal and neonatal safety. Increased ANC attendance is therefore strongly associated with greater awareness of the importance of health services and a higher sense of security during childbirth.

#### 4. CONCLUSION

The findings of this study indicate a significant relationship between maternal knowledge and the frequency of antenatal care (ANC) visits with the decision to give birth at home (non-health facilities). The statistical analysis revealed p-values of 0.011 and 0.015, with odds ratios (OR) of 5,455 and 4,462 respectively. These results suggest that limited knowledge and fewer ANC visits substantially increase the likelihood of mothers choosing non-health facilities for childbirth.

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