

## The Relationship between Exclusive Breastfeeding History and the Incidence of Stunting in Children Aged 24-59 Months in Kuta Baro District, Aceh Besar Regency

Sri Dwi Wulandari<sup>1</sup>, Lia lajuna\*<sup>2</sup>, Kartinezahri<sup>3</sup>

<sup>1,2,3</sup> Department of Midwifery, Politeknik Kesehatan Aceh, Kementerian Kesehatan, Aceh, 23231, Indonesia

### ABSTRACT:

**Introduction:** The high incidence of stunting in Indonesia is caused by various factors, one of which is Exclusive Breastfeeding. Based on data from 2020, 22% or around 149.2 million under-five children in the world experienced stunting. The WHO has set a target for stunting reduction of 20%. According to data from the Aceh health profile in 2022, the stunting rate among under-five children in Aceh Besar was 32.4%.

**Research Objective:** To determine the relationship between the history of Exclusive Breastfeeding and the incidence of stunting in children aged 24-59 months in Kuta Baro District, Aceh Besar Regency in 2023.

**Research Method:** This research used an observational analytic design with a retrospective cohort approach. The sample in this study was children aged 24-59 months, taken based on inclusion and exclusion criteria.

**Research Results:** The results of the research analysis showed a relationship between the history of Exclusive Breastfeeding and the incidence of stunting, with a p-value of 0.01 ( $\alpha < 0.05$ ) and an OR of 0.285 in Kuta Baro District, Aceh Besar Regency.

**Conclusion:** Exclusive Breastfeeding has a relationship with the incidence of stunting in children aged 24-59 months.

**KEYWORDS:** Stunting, Exclusive Breastfeeding, Aceh Besar Regency, Children aged 24-59 months, Public health

### INTRODUCTION

On a global scale, the prevalence of stunting in children under 5 years of age was recorded at 22.0% in 2020, with the African and South Asian regions having the highest rates[1], [2], [3]. Although there has been a decrease in prevalence since 1990, the rate of decline is still considered too slow to achieve the Sustainable Development Goals target by 2025[2], [4], [5]. Variations in stunting are also found based on characteristics, where children from poor families and mothers with low education have a higher risk of stunting. The prevalence of stunting in Indonesia is still quite high, reaching 30.8% in children aged 24-59 months in 2018, even though the government has set a target of reducing it to 14% by 2024[6], [7], [8]. Characteristics that influence the prevalence of stunting in Indonesia include the region of residence, socioeconomic status, and the mother's level of education, with higher prevalence in rural areas, lower-middle economic groups, and mothers with low education[9], [10], [11].

The prevalence of stunting in children aged 24-59 months in Aceh Province was recorded quite high, reaching 34.1% in 2018, higher than the national average, although it had decreased from 39.2% in 2013. According to the 2021 Indonesian Nutrition Status Survey (SSGI) report, the prevalence of stunting in Aceh Province is still quite high, reaching 33.2% of the total under-five children. Stunting is one of the chronic nutrition problems that is an important issue in Aceh. Of the 23 existing districts/cities, Gayo Lues Regency has the highest stunting rate, reaching 42.9%. Meanwhile, Aceh Besar Regency is ranked 13th with a stunting prevalence of 32.4%, which means it is still higher than the national average. The latest data obtained from the Aceh Besar District Health Office in 2022 shows that out of 30,675 toddlers whose height was measured, there were 4,715 children who experienced stunting. The most stunting cases were found in Kuta Baro District, with 523 children. The high stunting rate in Aceh Besar is a serious concern, given that the World Health Organization (WHO) has set a target of reducing stunting to below 20 percent. In fact, the WHO has set a target to reduce the global prevalence of stunting to 12.2% by 2030.

According to the framework developed by UNICEF, there are three main factors causing stunting, namely low birth weight (LBW), disease history, and unbalanced food intake, including exclusive breastfeeding that does not comply with recommendations[12]. Efforts to improve nutrition and increase access to health services are the key to reducing stunting rates in Aceh, particularly in Aceh Besar Regency, which still faces significant challenges in eradicating this problem. Based on several

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studies, the characteristics that influence the prevalence of stunting in Aceh are similar to national trends, where stunting is more prevalent in rural areas, in the lower-middle economic group, and in mothers with low education. Some risk factors for stunting that are still found in Aceh include low access and quality of health services in some remote areas, inappropriate complementary feeding practices, limited sanitation and access to clean water, suboptimal maternal nutrition knowledge, and low household food security and poverty. Based on the description above, the main objective of this study can be identified as to determine the relationship between the history of exclusive breastfeeding and the incidence of stunting in children aged 24-59 months in Aceh Besar District, Aceh Province.

## METHODS

This study used an observational analytic design with a retrospective approach. Data collection was conducted in a backward-looking manner, starting from identifying the effects or consequences that had occurred, then tracing the factors that influenced them. Sampling was carried out in the Kuta Baro District, Aceh Besar Regency, during the period of February to June 2023. The population in this study was all children aged 24-59 months who experienced stunting and were domiciled in the Kuta Baro District, Aceh Besar Regency, totaling 523 people. The research sample was determined by inclusion criteria, namely healthy toddlers and those willing to follow the informed consent, as well as exclusion criteria, namely toddlers with a history of chronic illness and those who were not included. The minimum sample size set was 179 respondents, using a purposive sampling technique. In this study, primary and secondary data were collected using questionnaire sheets to determine the characteristics of the respondents, such as age, education and occupation of parents, as well as the history of breastfeeding. Sampling was done by purposive sampling by visiting the respondents' homes. The preparation stage includes obtaining approval, arranging research permits, and requesting stunting data from the health center. At the implementation stage, initial screening, determination of respondents according to the criteria, explanation of the purpose, and collection of informed consent were carried out. The data was then processed and analyzed, before being compiled into a final report. The instruments used were a questionnaire to measure Exclusive Breastfeeding and an informed consent sheet. The data processing process in this study includes coding, editing, data entry, and cleaning. Data analysis consisted of univariate analysis to describe the research variables, as well as bivariate analysis using the Chi-Square test to determine the relationship between Exclusive Breastfeeding and the incidence of stunting. The Chi-Square test was chosen because the data was on a nominal or ordinal scale. The decision-making criteria are that if the p-value  $\leq 0.05$ , there is a significant relationship between the dependent and independent variables.

## RESULTS

### General Overview of the Research Location

The Kuta Baro District is one of the districts in Aceh Besar Regency, located on Jl. Peukan Ateuk, Lambro Bileu, Kec. Kuta Baro, Aceh Besar Regency with a total area of 61.07 km<sup>2</sup>. The Kuta Baro Health Center is located on Jl. Blang Bintang Lama, Kuta Baro District. The scope of services to be provided at the health center includes: general services, MCH (maternal and child health), family planning, pulmonary TB, laboratory, immunization, IMCI (Integrated Management of Childhood Illness), and delivery. And the service programs from the health center, each village has a program for integrated health posts (posyandu) for toddlers, pregnant women, and the elderly, which are held every month.

## RESEARCH RESULTS

From the data collection that has been carried out from June 20 to July 8, 2023 in 8 villages in the Kuta Baro District, Aceh Besar Regency, this study had 179 respondents. The test results of all research variables are as follows:

### Respondent Characteristics

**Table 1: Respondent Characteristics**

| No | Characteristic   | f  | %    |
|----|------------------|----|------|
| 1  | Age              |    |      |
|    | 24-36 months     | 79 | 44.1 |
|    | 37-48 months     | 52 | 29.1 |
|    | 49-59 months     | 48 | 26.8 |
| 2  | Weight           |    |      |
|    | Very Underweight | 37 | 20.7 |
|    | Underweight      | 81 | 45.3 |
|    | Normal           | 61 | 34.1 |
| 3  | Gender           |    |      |

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|   |   |     |      |
|---|---|-----|------|
|   | Male  | 99  | 55.3 |
|   | Female  | 80  | 44.7 |
| 4 | Father's Education                                |     |      |
|   | Elementary  | 71  | 39.7 |
|   | Secondary   | 97  | 54.2 |
|   | College/University                                | 11  | 6.1  |
| 5 | Mother's Education                                |     |      |
|   | Elementary  | 39  | 21.8 |
|   | Secondary   | 108 | 60.3 |
|   | College/University                                | 32  | 17.9 |
| 6 | Father's Occupation                               |     |      |
|   | Laborer   | 82  | 45.8 |
|   | Self-employed                                     | 28  | 15.6 |
|   | Farmer  | 62  | 34.6 |
|   | Private Employee                                  | 5   | 2.8  |
|   | Civil Servant/Military/Police                     | 2   | 1.1  |
| 7 | Mother's Occupation                               |     |      |
|   | Not Working                                       | 158 | 88.3 |
|   | Laborer   | 2   | 1.1  |
|   | Farmer  | 6   | 3.4  |
|   | Private Employee                                  | 10  | 5.6  |
|   | Civil Servant/Military/Police                     | 3   | 1.7  |
| 8 | Performed Early Initiation of Breastfeeding (EIB) |     |      |
|   | EIB   | 148 | 82.7 |
|   | Not EIB   | 31  | 17.3 |
| 9 | Duration of EIB                                   |     |      |
|   | <1 hour   | 167 | 93.3 |
|   | >1 hour   | 12  | 6.7  |

Based on table 1, it can be seen that the sample in this study were children aged 24-59 months. The majority of the respondents' age was 24-36 months, which was 79 children, the majority of the children's weight who experienced stunting was underweight, which was 81 children, and male children were the most common sample, which was 99 children. The majority of the respondents' fathers' education was high school graduate, which was 97 people, the majority of the respondents' mothers' education was high school graduate, which was 108 people, the majority of the respondents' fathers' occupation was laborer, which was 82 people, and the majority of the mothers' occupation was not working, which was 108 people. Furthermore, early initiation of breastfeeding (EIB) was the most common value performed after birth, and the most common duration of EIB was <1 hour.

**Univariate Analysis**

**Frequency Distribution of Stunting Incidence**

Table 2 Frequency Distribution of Stunting in Children Aged 24-59 Months in Kuta Baro District, Aceh Besar Regency

| No | Dependent variable | f   | %     |
|----|--------------------|-----|-------|
| 1  | Stunted,           | 126 | 70,4  |
| 2  | Severely Stunted   | 53  | 29,6  |
|    | Total              | 179 | 100.0 |

Based on table 2, it shows that the incidence of stunting in children aged 24-59 months is mostly in the short classification with a total of 126 respondents (70.4%).

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## Frequency Distribution of Exclusive Breastfeeding History

**Table 3. Frequency Distribution of Exclusive Breastfeeding History in Children Aged 24-59 Months in Kuta Baro District, Aceh Besar Regency**

| No | Dependent variable          | f   | %     |
|----|-----------------------------|-----|-------|
| 1  | Non-Exclusive Breastfeeding | 134 | 74,9  |
| 2  | Exclusive Breastfeeding     | 45  | 25,1  |
|    | Total                       | 179 | 100.0 |

Based on table 3, it shows that the majority were children who did not receive Exclusive Breastfeeding with a total of 134 respondents (74.9%).

## Bivariate Analysis

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**Table 4. Frequency Distribution of the Relationship between Exclusive Breastfeeding History and the Incidence of Stunting in Children Aged 24-59 Months in Kuta Baro District, Aceh Besar Regency**

| No | History of Exclusive Breastfeeding | Stunting incidents |      |                  |      | Total (%) | OR (95% CI) | P Value |
|----|------------------------------------|--------------------|------|------------------|------|-----------|-------------|---------|
|    |                                    | Stunted            |      | Severely Stunted |      |           |             |         |
|    |                                    | f                  | %    | f                | %    |           |             |         |
| 1  | Non-Exclusive Breastfeeding        | 87                 | 64,9 | 47               | 35,1 | 100       | 0,285       | 0.01    |
| 2  | Exclusive Breastfeeding            | 39                 | 86,7 | 6                | 13,3 | 100       |             |         |
|    | Total                              | 126                | 70,4 | 53               | 29,6 | 100       |             |         |

Based on table 4, it can be seen that among children aged 24-59 months, 134 (74.9%) had a history of non-exclusive breastfeeding, with 64.9% classified as stunted (short) and 35.1% as severely stunted. In contrast, 45 (25.1%) had a history of exclusive breastfeeding, with 86.7% classified as stunted (short) and 13.3% as severely stunted. The Chi-Square test result of 0.01 is smaller than the  $\alpha$  of 0.05, indicating a statistically significant relationship between exclusive breastfeeding history and the incidence of stunting in children aged 24-59 months. The Odds Ratio (OR) test yielded a value of 0.285, which means that children who were not exclusively breastfed are a protective factor, reducing the likelihood of stunting by 0.3 times compared to those who were exclusively breastfed.

## DISCUSSION

The prevalence of stunting in children aged 24-59 months in Kuta Baro District, Aceh Besar Regency is quite high, reaching around 35%, far above the national prevalence of stunting, which is only 30.8%. One of the factors influencing the incidence of stunting in this region is the history of exclusive breastfeeding. The results of the data analysis show that there is a significant relationship between the history of Exclusive Breastfeeding and the incidence of stunting in children aged 24-59 months. This can be seen from the significance value of the Chi-Square test of 0.01, which is smaller than the significance value of 0.05. Children who are exclusively breastfed have more optimal nutrient absorption compared to children who are given complementary foods (MP-ASI) too early. This is because 75% of the iron content in breast milk can be absorbed by the child's intestines, while the iron content in formula milk (PASI) is only about 5-10%. These findings are in line with the results of research conducted by mawaddah (2019), which showed a significant relationship between the history of exclusive breastfeeding and the incidence of stunting in children aged 24-59 months, with a p-value of 0.001[13]. Other studies also reinforce that the success of exclusive breastfeeding has a positive impact on the growth and development of toddlers[14], [15]. In line with these findings, research by hadi (2021) also stated that toddlers who did not receive exclusive breastfeeding for the first 6 months had a higher risk of stunting compared to the normal toddler group[16]. Their analysis showed that exclusive breastfeeding had an effect on the incidence of stunting, with an Odds Ratio of 4.6 and a p-value of 0.025. Various studies have shown a significant relationship between the history of exclusive breastfeeding and the incidence of stunting in children aged 24-59 months. Purnamasari (2021) found that children who did not receive exclusive breastfeeding had a 6.3 times higher risk of experiencing stunting compared to children who received exclusive breastfeeding[17]. In line with this, Adani et al. (2020) also reported that children who did not receive exclusive breastfeeding had a 2.6 times greater chance of experiencing stunting. Similar findings were also obtained from the research of Suryani (2021), which stated that children who did not receive exclusive breastfeeding had a 3.5 times higher risk of experiencing stunting[18]. Overall, these various scientific findings further emphasize the importance of exclusive breastfeeding in supporting optimal child growth and development,

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especially in preventing the occurrence of stunting at an early age. In addition to the exclusive breastfeeding factor, research has also identified several other factors that contribute to the high prevalence of stunting in Kuta Baro District, such as parenting patterns, maternal nutritional status, and access to health services. Suboptimal parenting patterns, such as inappropriate feeding practices, can hinder child growth. Poor maternal nutritional status, especially during pregnancy, also affects fetal and infant growth. Furthermore, limited community access to quality health and nutrition services is also a risk factor for stunting. Comprehensive interventions involving various related sectors, such as health, nutrition, agriculture, and education, are needed to effectively address the problem of stunting.

### CONCLUSIONS

The research findings in Kuta Baro District, Aceh Besar Regency, show that the majority of children aged 24-59 months, at 74.9%, did not receive Exclusive Breastfeeding. Furthermore, 70.4% of children in this age range experienced stunting with a short stature category. There is a significant relationship between the history of Exclusive Breastfeeding and the incidence of stunting in children aged 24-59 months, with a p-value of 0.01. Children who were not given Exclusive Breastfeeding had a 0.285 times higher risk of experiencing stunting compared to children who received Exclusive Breastfeeding. These findings emphasize the importance of Exclusive Breastfeeding as one of the efforts to prevent and reduce the prevalence of stunting in children in the region. Interventions that encourage and support the practice of Exclusive Breastfeeding need to be prioritized to address the still relatively high problem of stunting.

### CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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