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The Relationship Between Breastfeeding, Nutritional Status, and Exclusive Breastfeeding History with Stunting

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ABSTRACT

Introduction: Stunting remains a nutritional problem facing Indonesia. The nutritional intake of breastfeeding mothers is closely linked to the production of breast milk, which is also a key factor in ensuring the adequate nourishment of infants and toddlers.
Objective: The research aims to determine the relationship between the nutritional status of breastfeeding mothers, the history of exclusive breastfeeding, and the incidence of stunting in infants under five in Cikunir Village.
Method: The type of research used is quantitative with analytical methods which aims to determine the relationship between the nutritional status of breastfeeding mothers, the history of exclusive breastfeeding, and the incidence of stunting in babies under five. The population is mothers who have babies aged 6-24 months in Cikunir Village, the sampling technique used purposive samples, samples were 52, the data presentation method was in tabular form, the analysis used descriptive and analytical analysis, the instrument used a questionnaire consisting of questions regarding the nutritional status of breastfeeding mothers, factors which affect nutritional status, history of exclusive breastfeeding, incidence of stunting.
Result: The results of the statistical test on the relationship between the nutritional status of breastfeeding mothers and the incidence of stunting obtained a p-value of 0.307, while the results of the statistical test of the relationship between exclusive breastfeeding and the incidence of stunting obtained a p-value of 0.020.
Conclusion: There is no relationship between the nutritional status of breastfeeding and the incidence of stunting, and there is a relationship between exclusive breastfeeding and the incidence of stunting. The researcher postulates that if the nutritional status during pregnancy and breastfeeding is normal, yet the mother is ignorant, unable, or unwilling to obtain information about the nutrition that must be met during this period, this will result in stunting of the child. The prevention of stunting should commence with the provision of education and integrated services for pregnant women and mothers with children up to the age of two.

Keywords: breastfeeding, nutrition, stunting

Introduction

Stunting remains a significant nutritional problem in Indonesia. According to data from Basic Health Research (Riskesdas) 2018, the prevalence of underweight has progressively improved, decreasing from 19.6% in 2013 to 17.7%. Similarly, the prevalence of stunting reduced from 37.2% to 30.8%, and wasting decreased from 12.1% to 10.2%. However, these figures remain relatively high compared to the National Medium-Term Development Plan (RPJMN) objective of 19% by 2024 (Pusat Data dan Informasi Kementerian Kesehatan, 2018).

The prevalence of stunting, commonly referred to as short stature among toddlers, is a global nutritional issue and the primary nutritional challenge in Indonesia. Despite recent declines, the prevalence remains above the 2019 National Long-Term Development Plan (RPJMN) target of 28%. To address this, the government has implemented two types of nutritional interventions: specific nutritional interventions and sensitive nutritional interventions. Specific nutritional interventions target pregnant women, breastfeeding mothers, and children aged 0–23 months.

Malnutrition remains a critical concern in many developing countries, encompassing underweight, stunting, wasting, and micronutrient deficiencies. Stunting, in particular, reflects a failure to thrive due to chronic nutritional deficits during the first 1,000 days of life, from conception until the child reaches 23 months of age (Tim Nasional Percepatan Penanggulangan Kemiskinan, 2017; Kurniatin LF, Putri RRC, 2021).

The nutritional intake of breastfeeding mothers is closely tied to breast milk production, which is essential for the adequate nourishment of infants and toddlers. A mother's nutritional status profoundly impacts the infant's growth and development. Nutrients are defined as substances required for the body's metabolic processes. During the postpartum period, the nutritional demands of breastfeeding mothers increase to support the healing process after childbirth and ensure sufficient breast milk production. It is crucial for breastfeeding mothers to consume a higher caloric intake, as their health directly affects the well-being of their child (Humas RS Hasan Sadikin, 2018).

The quality and quantity of breast milk production depend on the mother's nutritional intake. Therefore, mothers must consume a diet that is balanced and rich in vitamins and minerals. Dr. William Sears suggests that a nutritionally balanced diet enhances energy levels and overall well-being during lactation. Adequate nutritional intake significantly impacts both the volume and quality of breast milk, and breastfeeding mothers are recommended to consume an additional 700 kcal daily. However, some mothers reduce their food intake during lactation, which can hinder milk production and disrupt their nutritional status. Moreover, fatigue and rapid weight loss often experienced by mothers may negatively affect breast milk production, leading to concerns about insufficient milk supply (Humas RS Hasan Sadikin, 2018).

Globally, less than half of babies under six months old are exclusively breastfed, according to WHO. In Indonesia, the exclusive breastfeeding rate has stagnated in recent years. Data from the Indonesian Nutrition Status Survey (SSGI) indicates that early breastfeeding initiation was 47.4% in 2021 and 58.1% in 2022 (WHO, 2022). A study conducted in Malawi reported a stunting prevalence of 39% and an exclusive breastfeeding prevalence of 43%. Comparative analysis revealed significant differences in mean TB/U scores between breastfed and non-breastfed children (-1.13 vs. -1.59) (Kuchenbecker et al., 2015).

The nutritional status of breastfeeding mothers can be assessed using Body Mass Index (BMI) and Mid-Upper Arm Circumference (LiLA). A BMI of 18.5–25 indicates normal weight, while a BMI of 17.0–18.5 suggests a thin body type. BMI is calculated using the formula

weight/height² (kg/m²). LiLA is classified as chronic energy deficiency (CED) if the measurement is less than 23.5 cm, and as normal if it is 23.5 cm or greater (Marmi, 2017).

Malnutrition during postpartum and breastfeeding can adversely affect maternal and infant health. For mothers, this includes reduced breast milk production, delayed wound healing, disrupted reproductive recovery, anemia, and infections. For infants, malnutrition may result in impaired growth, weakened immunity, and deficiencies that affect eye and bone health. Poor maternal nutrition not only increases the risk of mortality but also negatively impacts infant survival, growth, and development (Milah, 2019; Rahmanindar Nora, 2019).

Based on the Indonesian Nutrition Status Survey (SSGI) by the Ministry of Health, the prevalence of stunting in children under five in West Java was 20.2% in 2022, a decrease from 24.5% in 2021. The Regent of Tasikmalaya has designated 67 villages as special locations for stunting interventions, including Cikunir Village, Singaparna District, which has a stunting prevalence exceeding the 20% threshold.

Objective

This study aims to explore the relationship between the nutritional status of breastfeeding mothers, the history of exclusive breastfeeding, and the incidence of stunting among children under five in Cikunir Village, Singaparna District, Tasikmalaya Regency.

Method

This study employed a quantitative design with analytical methods to investigate the relationship between the nutritional status of breastfeeding mothers, the history of exclusive breastfeeding, and the incidence of stunting in children under five. The study population consisted of mothers with toddlers aged 6–24 months. A purposive sampling technique was used to select respondents based on predefined criteria, including breastfeeding mothers with toddlers aged 6–24 months who agreed to participate in the study. A total of 52 respondents were included in the sample. Data were collected using a structured questionnaire that covered topics such as the nutritional status of breastfeeding mothers, factors influencing nutritional status, the history of exclusive breastfeeding, and the incidence of stunting. Data were analyzed descriptively to summarize key characteristics and analytically to explore relationships between variables. Results are presented in tabular form for clarity and ease of interpretation.

Result

Sociodemographic of participants

Table 1. Sociodemographic of participants

Variables	f	%
Nutritional Status		
Good	45	86.5
Poor	7	13.5
Exclusive breastfeeding		
Exclusive	46	88.5
Non-exclusive	6	11.5
Incidence of stunting		
Stunting	14	26.9
Normal	38	73.1

Table 1 presents the distribution of nutritional status, exclusive breastfeeding history, and stunting incidence among the study participants. It shows that the majority of breastfeeding mothers, 45 individuals (86.5%), are in good nutritional condition, while 7 individuals (13.5%) are malnourished and categorized as experiencing Chronic Energy Deficiency (KEK). Additionally, 46 individuals (88.5%) reported providing exclusive breastfeeding, while 6 individuals (11.5%) did not. Table 3 further details the incidence of stunting in infants and toddlers, revealing that 38 infants (73.1%) were not stunted, while 14 infants (26.9%) exhibited stunting. These findings highlight the nutritional status of mothers and their breastfeeding practices in relation to child growth outcomes.

Relationship betwen Variables

Table 2. Relationship betwen variables

Variables	Stunting						p-value
	Stunting		Normal		Total		
	f	%	f	%	f	%	
Nutritional Status							
Good	34	75.6	11	24.4	45	100	0.307
Poor	4	57.1	3	42.9	7	100	
Exclusive breastfeeding							
Exclusive	36	78.3	10	21.7	46	100	0.020
Non-exclusive	2	33.3	4	66.7	6	100	

Table 2 shows that 75.6% of toddlers with stunting have good breastfeeding nutritional status (without KEK), while 42.9% of toddlers without stunting have poor breastfeeding nutritional status (KEK). The statistical test yielded a p-value of 0.307 > alpha (0.05), indicating no significant difference in the proportion of stunting between toddlers whose mothers have good and poor breastfeeding nutritional status. Therefore, it can be concluded that there is no relationship between the nutritional status of breastfeeding mothers and the incidence of stunting in infants and toddlers.

Table 2 also reveals that 33.3% of toddlers with stunting were not exclusively breastfed, while 21.7% of non-stunted toddlers were exclusively breastfed. The statistical test yielded a p-value of 0.020 < alpha (0.05), indicating a significant difference in the proportion of stunting between exclusively breastfed and non-exclusively breastfed toddlers. Thus, it can be concluded that exclusive breastfeeding is associated with a reduced incidence of stunting in infants and toddlers.

Discussion

Relationship between the nutritional status of breastfeeding mothers and the incidence of stunting in infants and toddlers

The results of the study showed that 75.6% of toddlers were stunted, and their breastfeeding mothers had good nutritional status (without KEK), while 42.9% of non-stunted toddlers had breastfeeding mothers with poor nutritional status (KEK). The statistical test yielded a p-value of 0.307, which is greater than alpha (0.05). This indicates that there is no

significant difference in the proportion of stunting between toddlers with mothers having good and poor breastfeeding nutritional status. Therefore, it can be concluded that there is no relationship between the nutritional status of breastfeeding mothers and the incidence of stunting in infants and toddlers.

This conclusion is supported by previous research, which found no relationship between pregnant women with Chronic Energy Deficiency (KEK) and the incidence of stunting (p-value = 0.23) (Warsini, Kristiana Tri, Hamam Hadi, 2016). Researchers believe that the condition of KEK in pregnant women often persists into the postpartum or breastfeeding period, due to an imbalance in energy and protein intake during pregnancy, leading to inadequate nutrition. Pregnant women with KEK are at risk of giving birth to low birth weight (LBW) babies, and if this condition is not managed properly, the child may be at risk of stunting (Alfarisi, R., Nurmalasari, Y., & Nabilla, 2019). The results of a multivariate analysis indicated that the nutritional status of mothers with KEK increased the risk of having stunted toddlers by six times after adjusting for variables such as personal hygiene, exclusive breastfeeding, access to latrines, infectious diseases, income, maternal education, and clean water sources (Pangaribuan, S.R.U., Napitupulu, D.MT., Kalsum, 2022).

Based on cross-tabulation data, it was also found that mothers with poor breastfeeding nutritional status were more likely to have stunted infants, with 57.1% of stunted toddlers having mothers with poor nutritional status. Therefore, it can be concluded that mothers with poor breastfeeding nutritional status (KEK) are more likely to have stunted children. Stunting is a condition of failure to thrive in children under five due to chronic malnutrition. Stunted toddlers are identified by a height-for-age ratio (TB/U) of less than minus two standard deviations (-2 SD) below the average, indicating that the child is shorter than expected for their age. This condition is caused by growth constraints in the womb, inadequate nutrition during pregnancy, and low birth weight (Kusumawati, E., Rahardjo, S., & Sistiarani, 2017).

Efforts to improve nutrition in pregnant women and during the first 1000 days of a child's life can help address this issue. This includes providing knowledge to mothers about available facilities, approaches, media, and information (Kusumawati, E., Rahardjo, S., & Sistiarani, 2017). Researchers suggest that even if mothers have normal nutritional status during pregnancy and breastfeeding, stunting may occur due to a lack of awareness, inability, or unwillingness to obtain information about the nutritional requirements during pregnancy, breastfeeding, and child growth. Therefore, preventing stunting should begin with education or health education services provided to mothers during pregnancy, breastfeeding, and up to the age of two.

Nursing mothers need to consume food with balanced nutrition. A balanced diet provides quality nutrition that supports breastfeeding. Several studies have shown that mothers with good nutrition are generally able to breastfeed their babies for at least six months. Conversely, an unbalanced diet during breastfeeding can make the mother's body vulnerable, as it works hard to produce breast milk. This can lead to a decrease in breast milk production (Imasrani, I.Y., Utami, N.W., 2016).

Based on the research results, it can be concluded that there is no significant relationship between the nutritional status of breastfeeding mothers and the incidence of stunting in infants under five. However, stunting is most commonly observed in toddlers whose mothers have poor nutritional status.

The relationship between exclusive breastfeeding and the incidence of stunting in infants and toddlers

The research results showed that 33.3% of stunted toddlers were not exclusively breastfed, while 21.7% of stunted toddlers were exclusively breastfed. The statistical test yielded a p-value of 0.020, which is less than alpha (0.05). This indicates a significant difference in the proportion of stunting between exclusively and non-exclusively breastfed toddlers, suggesting a relationship between exclusive breastfeeding and the incidence of stunting in infants and toddlers.

These findings are consistent with research by Aghadiati F. (2022), titled *Nutritional Status and Exclusive Breastfeeding with Stunting Incidents in the Puding Health Center Working Area*, which reported a significant relationship between exclusive breastfeeding and the incidence of stunting. Furthermore, a literature review revealed that two out of seven studies that focused on exclusive breastfeeding found a significant association with the risk of stunting in babies aged 6-23 months. The incidence of stunting was found to be 2.8 times greater in babies under five who did not receive exclusive breastfeeding (Rusliani N., Hidayani WR., 2022). Additional research also supports this, indicating that toddlers who were not exclusively breastfed were 61 times more likely to experience stunting compared to those who were exclusively breastfed (Putri, E.G.A., Wahyurainto Y., 2023).

Breast milk is produced by the mother and contains all the nutrients required by the baby (Mufdlilah, 2017). According to recommendations from UNICEF and WHO, exclusive breastfeeding should be provided for the first 6 months and continued until the child is two years old (WHO, 2017; UNICEF, 2019). An important component of breast milk is colostrum, which is produced during the Early Breastfeeding Initiation (IMD) process immediately after birth. Colostrum is a clear, dark yellowish liquid that contains protein, fat, and vitamins. It is essential for preventing and neutralizing bacteria, viruses, fungi, and parasites; improving digestion; supporting the baby's immune system to prevent infection; enhancing brain development; and providing energy through its lactose content (Nasrul, N., Hafid, F., Thaha, A. R., & Suriah, 2015). In cases where a child experiences diarrhea or malabsorption due to digestive tract infections, nutrient absorption is impaired, which can negatively affect the baby’s growth and development, particularly during the first 6 months after birth (Aridiyah, F.O., Rohmawati, N., & Ririanty, 2015).

To support government programs related to exclusive breastfeeding, it is crucial for health promoters, health workers, and community cadres to provide education and accurate information about stunting and its prevention. Women's knowledge and nutrition should be prepared before pregnancy. Education for prospective mothers before pregnancy, monitoring mothers after childbirth to ensure they practice exclusive breastfeeding, and support from family members (such as the husband and parents) and both the health and non-health sectors are essential in preventing stunting in children.

Conclusion

There is no relationship between the nutritional status of breastfeeding and the incidence of stunting, and there is a relationship between exclusive breastfeeding and the incidence of stunting. The researcher postulates that if the nutritional status during pregnancy and breastfeeding is normal, yet the mother is ignorant, unable, or unwilling to obtain information about the nutrition that must be met during this period, this will result in stunting

of the child. The prevention of stunting should commence with the provision of education and integrated services for pregnant women and mothers with children up to the age of two.

Ethical consideration

NO: 28/SGH/KEPK/VIII/2024 from the STIKes Ganesha Husada Kediri Health Research Ethics Commission Institute.

Conflict of interest

The researchers stated that there is no conflict of interest related to the implementation and publication of the results of this research. The entire research process, from planning, data collection, analysis, to report preparation, was carried out independently without any influence or pressure from any third party. A commitment to research ethics is upheld throughout the research process, ensuring transparency, accuracy and honesty in reporting results. Respondents' participation was voluntary with informed consent, and their confidentiality and privacy were maintained in accordance with applicable research ethics standards. With this statement, researchers hope that the research results can be trusted and used as a valid reference for the development of science and health practices related to ethnomedicine and reproductive health.

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Authors' contribution

Each author makes an equal contribution to all parts of the research. All authors have reviewed and approved the final draft critically and are responsible for the index and similarity of the manuscript.

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