



Prelacteal feeding practices with stunted in infants

Praktik pemberian makanan prelakteal dengan kejadian stunting pada bayi

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Abstract

Indonesia still has a high prevalence of stunting compared with several other Southeast Asian countries. The National Survey on Nutritional Status in Indonesia in 2022 reported that stunting in Indonesia was 18.5%, while Bangka Regency recorded a stunting prevalence of 16.2%. Feeding under the age of six months has become one of the factors of stunting. This requires concrete effort to handle the problem of stunting. This study aimed to assess the association between prelacteal feeding practices and infant stunting. The research used a cross-sectional design in the Kenangan Health Centre area, Bangka Regency, in May 2023. A sample of 173 infants aged 0-6 months was obtained using cluster random sampling. The height of the selected infants was measured using a lengthboard and an infantometer. Interviews related to practical feeding were conducted with the parents using a questionnaire. Data were analyzed using Pearson's correlation test with $\alpha = 0,05$. The results showed that 14,5% of mothers gave prelacteal food to their infants until 6 months of age. There was a relationship between prelacteal feeding practices and stunting in the Kenanga Health Center working area ($p = 0,001$; $r = -0,663$). There was a negative correlation between prelacteal feeding practices and stunting. In conclusion, there is a significant negative relationship between prelacteal feeding practices and infant stunting.

Keywords: Infants, prelacteal food, stunted

Abstrak

Indonesia masih mempunyai prevalensi stunting cukup tinggi dibandingkan beberapa negara Asia Tenggara lainnya. Studi Status Gizi Indonesia (SSGI) tahun 2022 melaporkan prevalensi stunting di Indonesia sebesar 18,5% dan Kabupaten Bangka tercatat prevalensi stunting mencapai 16,2%. Faktor pemberian makanan di bawah usia 6 bulan telah menjadi salah satu faktor terjadinya stunting. Hal tersebut dibutuhkan upaya kongkrit dalam penanganan masalah stunting. Tujuan penelitian untuk menilai hubungan praktik pemberian makanan prelakteal dengan stunting pada bayi. Rancangan penelitian menggunakan desain *cross sectional* di wilayah Puskesmas Kenangan Kabupaten Bangka, pada Mei 2023. Sampel sebanyak 173 bayi usia 0-6 bulan diambil secara *cluster random sampling*. Bayi yang terpilih menjadi sampel diukur tinggi badannya dengan menggunakan *Lengthboard* dan *infantometer*. Wawancara terkait pemberian makanan prelakteal dilakukan kepada orang tua bayi menggunakan kuesioner. Analisis data menggunakan uji korelasi *Pearson*, dengan nilai $\alpha = 0,05$. Hasil menunjukkan 14,5% ibu memberikan makanan prelakteal pada bayinya sampai usia 6 bulan. Terdapat hubungan praktik pemberian makanan prelakteal dengan stunting di wilayah kerja Puskesmas Kenanga ($p = 0,001$; $r = -0,663$). Korelasi bersifat negatif antara praktik pemberian makanan prelakteal dengan stunting. Kesimpulan, terdapat hubungan yang bermakna dengan arah negatif antara praktik pemberian makanan prelakteal dengan stunting pada bayi.

Kata Kunci: Bayi, makanan prelakteal, stunting

Introduction

Stunting, a nutritional problem that is pervasive in Indonesia's social structure, not only impacts the individuals affected but also has widespread consequences for the country's economy and the national development process as a whole. The consequences of stunting in infants not only include health problems such as disease and death, but also hinder the development of essential motor and mental skills and increase the risk of reduced intellectual capacity (Adriany & Tesar, 2023). Infants who experience stunting have a risk of morbidity and death, as well as stunted growth in their motor and mental abilities, as well as a risk of decreased intellectual capacity, productivity, and increased risk of degenerative diseases in the future (Sumarto et al., 2023). This also hurts productivity and increases the potential risk of degenerative diseases in the future. As a result, stunting has become a serious problem in Indonesia, affecting children's growth and development in the long term (Martony, 2023).

The Indonesian Nutritional Status Study (INSS) reports that the prevalence of infant stunting in Indonesia by 2022 will reach 21,6%. These findings show the percentage of children under five years who experience stunting, which specifically refers to a physical growth condition that is not in line with the growth benchmarks desired by their peers. This figure shows a decrease from the previous year, 2021, when the stunting prevalence rate reached 24,4%. This reflects the positive changes in the nutritional conditions of children in Indonesia during that period. This decline is a positive sign of efforts to improve children's welfare and overcome the serious problem of stunting. However, it is important to continue monitoring and improving promotive and preventive efforts to prevent stunting, which will have an impact on current and future health (Yuwanti et al., 2022; Mulyani et al., 2022).

Stunting is a complex nutritional problem and is influenced by several interrelated factors. Many factors have a significant direct influence on the development of stunting in infants, and the type of food provided to infants is a very important factor. These factors include the provision of breast milk and complementary foods. Breast milk is a very good source of nutrition because it contains various important

nutrients, such as protein, fat, carbohydrates, vitamins, and minerals, which help strengthen the body's immune system and increase mental and emotional intelligence (Rahmad & Miko, 2016; Yuliawati et al., 2021; Fadilah et al., 2023).

In the majority of cases, malnutrition can be avoided if parents have an adequate understanding of the procedures for maintaining nutrition and regulating children's intake. The practice of prelacteal feeding is still widely practiced, especially in Indonesia. Providing prelacteal feeding to infants has a serious impact on the practice of exclusive breastfeeding, especially because in the early stages of life, infants do not have a mature immune system. When infants are given prelacteal foods before receiving exclusive breast milk, it has the potential to disrupt the baby's digestive system and reduce their body's resistance to infection and disease. In this context, giving food other than breast milk to infants can disrupt the digestive system if given under six months of age, which in turn can cause problems such as indigestion, diarrhea, and various other health problems. Additionally, when infants do not receive exclusive breast milk, they may also miss out on the unique immune-protective benefits contained in breast milk, thereby increasing the risk of infections and diseases that can negatively affect their development. Therefore, exclusive breastfeeding is very important because it can support the baby's fitness, optimal growth and development, and ideal nutrition (Al-Rahmad & Fadillah, 2016; Haslan et al., 2023).

Prelacteal feeding practices are a significant factor in influencing children's nutritional status. The results of Sutayani's research (2021) state that there is a significant negative relationship between the provision of prelacteal food and the breastfeeding process in the work area of the Rowotengah Health Center, Jember Regency, meaning that the more the mother provides prelacteal food, the greater the chance of ineffective breastfeeding.

Therefore, this problem has attracted interest in this research to investigate the practice of prelacteal feeding and the incidence of stunting in infants at the Kenanga Community Health Center. This study aimed to increase the understanding of this issue and to identify acceptable strategies to mitigate the negative impact of prelacteal feeding practices on

children's health in the studied communities. Through this research, it is hoped that there will be increased awareness and understanding of the importance of exclusive breastfeeding practices and the dangers associated with prelacteal feeding.

Methods

This study had a cross-sectional design. It was implemented in the working area of the Kenanga Community Health Center, Bangka Regency, Bangka Belitung Islands Province, in May 2023. The population that was the focus of the research consisted of 306 infants aged 0–6 months. To determine the research sample, the researchers used the Slovin formula with a cluster random sampling technique. In this process, 173 respondents were selected for the research sample.

Data on stunting were collected by measuring the baby's body length using an infantometer. After obtaining the BL data, nutritional status was assessed based on the Length for Age Z-score (HAZ) and the baby's age was calculated in months. To gather information about the practice of prelacteal feeding, interviews were conducted with the respondents' parents, who began by signing an informed consent form. The interviews were conducted using a questionnaire that had been tested for validity and reliability by previous researchers.

Furthermore, the data that were successfully collected in this study were processed using the WHO Anthro application. To determine the nutritional status of infants by referring to Length for Age Z-score (HAZ) index and paying attention to the value limit of ≤ -2 Standard Deviations (SD) as an indicator of stunting. Next, data processing on prelacteal feeding practices was carried out by scoring the answers given by the respondent's parents regarding the food given to infants from birth to three days of age.

The data that have been processed are then analyzed using statistical applications in stages. Univariate and statistical analyses using the Pearson correlation test were performed. The Pearson correlation test provides a strong analytical basis for evaluating whether a significant relationship exists between the two variables. The research was approved by the

Health Research Ethics Committee of the Health Polytechnic of the Ministry of Health, Pangkalpinang, Pangkalan Baru on May 31 (number PP. 08.02/2.2/2657/2023).

Result and Discussion

Table 1. Distribution of respondents based on age, body length and nutritional status

Variable	Mean \pm SD	Min – Maks
Age (month)	3,96 \pm 1,29	1 – 6
Body Length (cm)	61,7 \pm 2,70	54,8 – 67,6
Nutritional Status (HAZ)	-0,53 \pm 0,88	-3,80 – 2,08

Table 1 shows that the average age of the baby is three months, with the lowest age being one month and the highest age being six months. The average body length of infants is 61,7 cm with the lowest body length being 54,8 cm and the highest body length being 67,6 cm. The practice of providing food to infants at a very early age can cause significant health problems. This is because the baby's digestive structure is not yet fully mature and is ready to accept foods other than breast milk. As a result, the practice of giving food prematurely can lead to digestive disorders such as diarrhea, vomiting, and even allergic reactions. Therefore, it is important to understand that providing additional nutrition to infants must be based on appropriate guidelines and consider the baby's physical readiness and digestive development to avoid unwanted health risks (Agustina, 2022).

Based on the results of the research (Table 2), it was found that the practice of giving prelacteal food was that 14,5% provided prelacteal food, which means that respondents still did not understand the dangers of giving prelacteal food. Evidence from the actions taken by the respondents showed that they did not comply with the practice of exclusive breastfeeding. for infants up to six months of age. Providing food other than breast milk before the age of six months can increase the risk of infection, allergies, decreased breast milk production, and a reduction in the loving relationship between mother and baby. This is because breast milk contains complex nutrients that are easily digested and do not threaten the poor functioning of the baby's kidneys (Al Rahmad et al., 2022; Hudayana et al., 2023).

Table 2. Dissemination of the practice of providing prelacteal feeding in areas under the responsibility

Variable	n	%
Feeding		
Prelacteal		
Give	25	14,5
Didn't give	148	85,5
Types of Prelacteal Foods		
Formula milk	13	52,0
Honey	11	44,0
Mineral water	1	4,0
Since when was it given		
Prelacteal Foods		
After birth	2	8,0
30 minute	7	28,0
1 hour	8	32,0
1 day	5	20,0
2 day	2	8,0
3 day	1	4,0

Based on the research results (Table 2), it was found that 52% of mothers gave prelacteal feeding types, formula milk to their children, 44% honey, and 4% water. Providing food other than breast milk to infants aged less than six months will affect digestion because their intestines cannot digest food properly. It can also cause obesity, allergies, and decreased immunity, which increases the likelihood of infectious diseases affecting a child's nutritional status (Ismi, 2023).

If breast milk production is insufficient to meet these needs, formula milk can be an alternative. However, the consumption of formula milk can cause side effects. Milk producers who are aggressive in marketing also contribute to the increased consumption of formula milk and the decreased consumption of breast milk. Consuming formula milk carries a greater risk of lactose intolerance, which can cause diarrhea (Saputra et al., 2022).

Based on the research results, it was found that 30 minutes after giving birth, the mother gave prelacteal food as much as 28%, and 1 h after birth as much as 32%. Giving foods other than breast milk can produce feelings of fullness more quickly in infants, which can reduce their interest in breastfeeding. This in turn can result in the baby not getting sufficient breast milk (Anggryni et al., 2021).

Breastfeeding from an early age has a significant impact on both the mother and the

child. The benefits of breastfeeding include not only establishing affection, but also reducing bleeding after giving birth, speeding up the recovery of the mother's health, delaying pregnancy, and reducing the risk of breast cancer. Infants who do not receive exclusive breast milk can suffer from diarrhea and even death (Kahti & Lubis, 2023).

The results showed that stunting in the Kenanga Community Health Center work area was 9,2%. This figure is considered low according to the stunting prevalence in the Bangka Regency of 16,2% and below the 2024 stunting reduction target in Bangka Belitung Province (10,38%). Several factors have a significant influence on the occurrence of stunting in children, both of which have a direct influence and an indirect impact, many of which include the birth weight of the baby, the economic position of the family, and the education level of the parents. These factors interact with each other and come together to form a complex framework that impacts the child's long-term growth and development. Stunting in toddlers can also be caused by having a habit of consuming foods that do not contain nutritional elements. Food that is not varied will also have an impact on reducing food intake, and there are still many people's assumptions about what is important about being full without looking at whether nutritional intake is adequate (Sartikah, 2023).

Parents must have extensive knowledge to ensure that their children eat healthy food. Education and knowledge are closely related to the assumption that people who receive higher education have broader knowledge. Several factors influence nutritional knowledge, such as age, where the older a person is, the better the mental development process becomes, intelligence, and the ability to learn and think abstractly to adapt. Education is an important part of knowledge and culture plays an important role in knowledge (Maigoda et al., 2023; Ramadhani et al., 2020).

The low stunting rate in the Kenanga Community Health Center working area is because 97,48% of pregnant women receive vitamin Fe according to the 2022 community health center data. All households in the research sample showed a level of clean and healthy living behavior that reached 100%. This means that all households that are research

subjects have adopted and implemented practices that support a clean and healthy life. According to Wardanu et al. (2023), the relationship between clean and healthy living behaviors and the incidence of stunting is a link that has been found in various studies. Having a clean, healthy spirit can significantly influence an individual's nutritional status. In this context, the level or quality of clean and healthy habits carried out by a person or family member can have a significant impact on nutritional conditions.

Clean and healthy living behaviors can be an option to prevent stunting. Clean and healthy living behavior is an effort to form or maintain a culture for a person, group, or society that prioritizes health to live a quality of life. In other words, the higher the level of clean and healthy living behavior carried out by a person or family, the better their nutritional status. This means that when clean and healthy living practices are improved and implemented consistently, the possibility of stunting in individuals or children in the family decreases (Komariah et al., 2023).

In this context, it is important to recognize that clean and healthy living behaviors play a significant role in maintaining and improving an individual's nutritional status. Therefore, it is important to encourage these practices to reduce the risk of stunting and other nutrition-related health problems (Wardanu et al., 2023).

Table 3. Test of the relationship between prelacteal feeding practices and stunting cases

Variable	Stunting Cases	
Prelakteal Food	r-value	-0,663
	p-value	0,001
	n	173

Based on the results of the research using the Pearson correlation test, a p-value (significant) was obtained of 0,001. These results show that, statistically ($p < 0,05$), a significant relationship was found between prelacteal feeding practices and stunting cases in the Kenanga Community Health Center.

The r-value (Pearson correlation coefficient) of -0,663 shows the strength of the relationship between these two variables. In addition, the negative direction of the relationship indicates that when mothers provide prelacteal food, the chance of stunting in

their children tends to be smaller. These results illustrate that prelacteal feeding has a strong influence on reducing the possibility of stunting. Therefore, it is very important for the public to better understand the importance of providing exclusive breastfeeding during the first six months of a baby's life to prevent stunting and other nutrition-related health problems.

This study is in line with previous research (Anggraeni et al., 2023). In 2022, research conducted in Serdang Village showed that there is a significant link between the practice of prelacteal feeding and the incidence of stunting in children. In the present study, prelacteal feeding emerged as a risk factor that significantly influenced the likelihood of stunting in children.

The results of the analysis showed that the odds ratio (OR) for the relationship between prelacteal feeding and stunting was 4,8, with a significance value of $p\text{-value} = \leq 0,05$. These results indicate that the practice of providing prelacteal feeding significantly increases the risk of stunting in children. These findings emphasize the importance of understanding and awareness of the practice of receiving only exclusive breast milk throughout the first six months of a child's life. This practice can help reduce the risk of stunting and other nutrition-related health problems that affect children's development. Prelacteal feeding is a risk factor for stunting ($p < 0,05$).

Stunting can occur due to the inappropriate feeding of infants. Prelacteal feeding of newborns can cause a lack of exclusive breastfeeding, nutritional problems, and growth delays. Infants are less able to suck breast milk because of prelacteal feeding, which is also a major cause of diarrhea and death (Nasution & Harahap, 2023).

The practice of prelacteal feeding, which refers to giving newborns food other than breast milk, has been shown to have the potential to cause health problems and can be a significant risk factor in the development of stunting in children under five. One of the main reasons for this practice is the mother's low understanding of the importance of exclusive breastfeeding and the importance of early initiation of breastfeeding (EIB) within one hour after the birth of the baby. Breast milk also has benefits for mothers in that it can prevent bleeding in postpartum mothers, reduce the risk of breast

cancer or ovarian cancer in mothers, and provide natural birth control (Marpuah et al., 2023).

The practice of providing prelacteal food can interfere with the baby's initial breastfeeding initiation process. This is because prelacteal feeding can make the baby feel full or less interested in breastfeeding from the mother within a short time after birth. Timely initiation of early breastfeeding and exclusive breastfeeding throughout the first six months of a baby's life play an important role in providing essential nutrition, building the immune system, and ensuring healthy growth. Therefore, increasing mothers' understanding and knowledge about the importance of implementing EIB and exclusive breastfeeding is key to reducing the risk of health problems and stunting in children under five (Diadjeng et al., 2023).

Newborn children should be provided breast milk after birth. Providing breast milk after birth has many benefits such as preventing infant death and determining the success of breastfeeding in children. Breastfeeding from birth is recommended without a schedule (Sari et al., 2020).

Providing exclusive breast milk throughout the first six months for infants has enormous significance in maintaining the baby's health and development. However, certain factors may encourage mothers to give prelacteal food to their infants. One common reason is that breast milk is not produced in sufficient quantities or the amount of breast milk produced by the mother is relatively small after giving birth. This situation can give rise to concern and uncertainty in mothers regarding their ability to provide adequate breast milk to their infants (Putriana et al., 2019; Noprianti et al., 2023).

Apart from that, the mother's education level also has a significant influence on the knowledge and behavior they apply in caring for their children. A higher level of education tends to enable individuals to absorb information from various sources more effectively, including information about the importance of exclusive breastfeeding practices. Longer education also directly and indirectly influences mothers' knowledge and behavior regarding their children's health problems, such as exclusive breastfeeding (Nurrahmawati et al., 2023).

Bearing this in mind, the important role of education and counseling for mothers, especially

those with lower levels of education, is becoming increasingly clear in raising awareness of the importance of exclusive breastfeeding throughout the first six months of a baby's life. Efforts to increase knowledge and understanding are expected to reduce the practice of giving prelacteal feeding, which is not recommended and encourages better practices of exclusive breastfeeding (Imawati et al., 2022).

The research results stated that the majority of mothers gave prelacteal food to their children because the breast milk they produced after giving birth was insufficient in terms of volume and frequency. As a result, mothers feel worried that breast milk alone will not meet their infants' nutritional needs. In addition, they rely on health workers and cadres as the main sources of information regarding child health and breastfeeding practices (Mustary et al., 2023).

The role played by cadres in each village has been proven to be very important in monitoring children's growth and development. Efforts to empower Integrated Health Care (IHC) cadres have had a significant impact on increasing visits to IHC by pregnant and breastfeeding mothers, as well as enabling better monitoring of the nutritional status of children under five (Wilis & Rahmad, 2018; Faiqah & Suhartatik, 2022).

To increase the scope of exclusive breastfeeding practices and reduce stunting rates, it is important to provide comprehensive training and increase the knowledge of IHC cadres. This will enable them to provide more effective education to mothers in the region regarding the importance of exclusive breastfeeding throughout the first 6 months of a baby's life and other health practices that support child development. Thus, it is hoped that this effort will help reduce the risk of stunting and other nutritional problems that can negatively affect children's growth (Pujiastuti et al., 2022).

Conclusion

There was a significant negative relationship between prelacteal feeding practices and stunting cases in the Kenanga Community Health Center working area.

Suggestions are for Community Health Centers to implement routine outreach programs aimed at increasing public knowledge,

information, and understanding of nutrition and education related to stunting. In addition, training for IHC cadres also needs to be conducted to increase their understanding of the risks associated with providing prelacteal food on child development and growth.

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