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The Causes of Stunting in Toddlers: A Phenomenological Study in Aceh, Indonesia

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Abstract

Stunting is one of the nutritional problems faced in the world, especially in poor and developing countries. Stunting is associated with an increased risk of morbidity and mortality, suboptimal brain development resulting in delayed motor development and inhibited mental growth. This study aims to explore the causes of stunting in toddlers. This type of qualitative research involved a phenomenological design through in-depth interviews. Participants in this study were mothers who had toddlers with stunting health problems and lived together since the toddler was born, who were recruited by a purposive sampling technique, totaling six participants. The data collected in the form of in-depth interviews and field notes were analyzed using the Miles and Huberman technique. The study identified three main themes: feeding practices, health services utilization, and socio-economic influences. Community health centers should improve toddler nutrition programs through home visits and counseling, which can lead to positive behavioral changes related to stunting prevention in toddlers.

Keywords: Stunting, Toddlers, Health Center

1. Introduction

The success of achieving under-five nutritional status is a health indicator in the *Sustainable Development Goals* (SDGs). It is currently estimated that one in four children under the age of five years fails to grow along the trajectory defined by the *World Health Organization* (WHO) growth standards. This failure in growth is commonly known as stunting, a term that describes impaired linear growth (length/height) in the early years of life that results in failure to achieve the height in adulthood implied by genetic potential [1].

Stunting is a manifestation of malnutrition. Global predictions show that one in five children under five will be stunted by 2020. Stunting in children under five can have adverse or negative effects on their health throughout life, such as life-threatening complications in childbirth, reduced performance, impaired cognitive development, poor learning achievement, and reduced earning capacity when they become adults [2].

According to the WHO, the prevalence of stunting becomes a public health problem if the prevalence is 20% or more. Research results indicate that Indonesia has children with moderate, low, and excessive body weight, which reached 13%, 18%, and 14% respectively [4]. The prevalence of *stunting* in Indonesia has been fluctuating since 2017-2019. The results of the Basic Health Research (Riskesdas) in 2017 were 29.6%, in 2018, it was 30.8% and in 2019, the national stunting prevalence rate dropped to 27.67%. In Indonesia, Aceh is ranked third nationally for high under-five stunting rates behind East Nusa Tenggara and West Sulawesi. Based on basic health research (Riskesdas) in 2018, the prevalence rate of stunting in Aceh was 37.9%, while the national average prevalence was 30.8% [5].

Cases of stunting do not just happen, but the opportunity has existed since the fetus in the womb. Examining the causes of stunting is undoubtedly very important so that the relevant parties can determine the direction of policy more strategically, so that all toddlers in this country are free from stunting cases. Specific handling can be done based on the cause of stunting [3].

Children living in food-insecure areas will be more at risk for *stunting* than toddlers living in safe places, with an *Odds Ratio* (OR) of 1.27 [6]. In addition, income factors, maternal exposure to mass media, child weight at birth, and parental education significantly contribute to *stunting* in toddlers [6].

Many studies have been conducted on the factors that cause stunting in children under five. The results show that the factors that cause or influence stunting vary greatly. The results of a systematic review of 71 studies on the causes of stunting found that environmental factors affecting nutrition are a significant contributor to stunting in toddlers.

The environment in question, such as good or bad sanitation, and the state of family income [1]. The factors that cause *stunting* are maternal inadequate nutrition during pregnancy, children living in the same house with two or more children aged two years, low birth weight babies (LBW), born prematurely, not consuming animal protein, and toddlers living in homes with low dietary diversity [7].

Based on the analysis of several previous studies above, it can be concluded that many factors cause stunting. The research is mostly quantitative in nature, examining the extent to which the factor in question contributes to the occurrence of stunting. The results of the literature study show very little research that examines the causes of stunting qualitatively. Qualitative research such as phenomenology is more specific to the family's experience in providing nutrition to toddlers who are stunted, showing that families have diverse experiences in fulfilling the nutrition of stunted toddlers, but there are some family commonalities, namely feeling anxious when knowing their children are stunted and anxious about providing nutrition like what should be given to toddlers [8].

This study aims to explore why the factors identified above can trigger stunting by gathering in-depth information from related parties, particularly regarding the experiences of families of stunted children and how stunting occurs in their children.

This research was conducted in Pidie District, which is one of the districts with a high stunting rate and ranks second in Aceh Province. Based on data collected from the Pidie Health Office, in 2018, 1461 children were found to be stunted, while 522 children were wasted. In terms of population, 11,000 out of 40,000 toddlers in Pidie are stunted [9]. The Head of Pidie District Office said as many as three stunted toddlers died because they were attacked by comorbidities that were strongly suspected to be caused by chronic malnutrition.

The description of the background above explains that most research on factors that cause stunting in toddlers is quantitative, and only a few are qualitative. Although there are some qualitative studies, they are not specific to the causes of stunting in toddlers. Based on the foundation, the author formulates research problems, namely, how the results of the phenomenological study are used to identify the causes of stunting in toddlers in the Working Area of Pidie District Health Center.

2. Methods

This research employs a qualitative type with a phenomenological design. Collecting data using two languages, namely Acehnese and Indonesian. The results of this study were prepared in Indonesian. Participants were mothers of toddlers (aged 26-35 years), who had stunted toddlers who lived with them from birth until diagnosis, and were willing to be research subjects and fill out informed consent.

Data collection through in-depth interviews, which were conducted with 6 participants. In-depth interview techniques were carried out on all participants. This interview was conducted for 4 weeks; previously, a trial was carried out on the interview guidelines to be used with participants. The data analysis uses thematic analysis. Thematic analysis is a way of identifying themes that are patterned in a phenomenon..

3. Result

The characteristics of participants can be seen in Table 1. This research resulted in three themes, namely feeding practices, health services utilization, and socio-economic influences (Table 2).

Table 1: Participants Characteristics

Participants	Age (Year)	Jobs	Education	Relationship with Toddlers	Toddler Age	Weight and Height of children under five
1	35	Housewife	Senior High School	Birth Mother	2 years 4 months	9.5 kg, 81 cm
2	31	Housewife	Senior High School	Birth Mother	4 years and 10 months	12.5 kg, 94cm
3	28	Housewife	Junior High School	Birth Mother	3 years 2 months	10 kg, 85 cm
4	33	Housewife	Senior High School	Birth Mother	3 years and 5 months	9 kg, 86 cm
5	34	Honorary Teacher	Bachelor's Degree	Birth Mother	2 years	8.4 kg, 76 cm
6	26	Housewife	Elementary School	Birth Mother	18 months	7 kg,72 cm

Table 2: Data Analysis

Category	Sub Theme	Theme
History of non-exclusive breastfeeding	Inadequate breastfeeding and complementary feeding	Feeding Practices
Complementary feeding that lacks variety		
Inadequate food intake	Inadequate food intake	
Consumption of unhealthy snacks		
Incomplete immunization	Immunization history	Health Services Utilization
History of frequent illness		
Reliance on traditional medicine	Illness management and health service utilization	
Frequency and pattern of health services		
Unstable income	Family economic conditions	Socio-Economic Influences
Lack of capacity of mothers to access information	Mother's Knowledge	

Feeding Practices
This theme explains the practice of feeding children. Based on the results of interviews with 6 participants who care for toddlers with stunting, the author found two sub-themes, namely inadequate breastfeeding and complementary feeding, and inadequate food intake.

Inadequate breastfeeding and complementary feeding
This sub-theme explains the existence of several feeding practices/habits that are not good for toddlers, namely, a history of non-exclusive breastfeeding, provision of complementary foods (MP-ASI) that are less varied. Participants revealed that when babies were 0-6 months old, they did not receive exclusive breastfeeding. As quoted below:

"I breastfed but only for 4 months because I got pregnant again quite close together." (P4)
"I only breastfed for 4 months, I was working." (P5)
"... a month that only drinks breast milk." (P6)

Mothers of toddlers also provide complementary foods, but the food provided is less varied, and toddlers have been given formula milk before the age of 6 months. Participants revealed that toddlers were only given bread, milk, rice with vegetable soup, brown rice mixed with milk, and banana mixed rice. As the quote below:

"6 months and above I give brown rice mixed with milk..." (P2)
"I give sgm milk, green bean porridge, but he eats little, fruit once, not regularly, and bread from the health center, cakes, and vegetables do not want to eat, we just put oil on rice and eat it, eggs, and fish rarely." (P4)
"...in addition to milk, I give rice, mashed first rice and banana..." (P5)

Inadequate food intake
This sub-theme explains that the food intake for toddlers is also inadequate. Participants revealed that their children had no appetite for food. This is based on the following participants' statements:

"Three times there is still eating rice, just not much. A little bit, it's not appetizing; his appetite is lacking, there are three mouthfuls. If it tastes good, you want to eat. Fish is also eaten, but only a little. It's tough, I bring rice, I only want two mouthfuls. "(P2)
"I give sun rice even though I can't eat it. I don't make vegetables or fish, I don't even make team rice, and I don't want to eat it. I don't want porridge from the community health post either. Rice with soy sauce if there is no sauce. Sometimes tempeh with sweet soy sauce only. I didn't want to eat as a child, twice a day, eggs I didn't want to eat, one or two mouthfuls of rice, and even then, I had to be forced. When I was 2 years old, I had no appetite; I only ate one piece of bread. If you eat a little bit, you eat one or two spoons."(P3)

Consumption of unhealthy snacks is also often done by toddlers. Participants revealed that their children often eat snacks, like the quote below:

"...snacks like ice cream when I go to Quran class, somay. There are also chips and crackers, once or twice a day." (P2)
"When he was 2 years old, he often snacked on cake, bread, chocolate, and candy at the stall." (P3)
"She snacks on potato chips, and she eats noodles, fried snacks like bakwan, tempeh, tofu, and fried bananas. She doesn't like eating rice (P5)

Health Services Utilization
This theme explains the practices/habits of mothers in utilizing health services for toddlers with stunting problems. This theme is divided into two sub-themes as follows:

Immunization history
This sub-theme describes the history of giving incomplete immunizations to toddlers. Informants revealed that toddlers were not fully immunized. This is in accordance with the following informants' statements:

"...if immunization is not complete." (P2)
"...the immunization is incomplete." (P3)
"...if there are incomplete immunizations, I just forgot which ones." (P4)

In addition, participants also explained the history of illnesses often experienced by children, participants revealed that their children often get sick such as fever, cough and flu. One other participant revealed that his child often had diarrhea and even dysentery. Here are some participants' statements:

"*Often sick with cough, headache, flu, and other rare conditions. He has diarrhea, but not often because he doesn't eat fatty foods like coconut milk." (P1)*
"...sick as a child, fever, cough, flu. Mostly during the growth period." (P2)
"...my child often gets sick, 2 to 3 times a month, fever, cough, flu." (P6)

Illness management and health service utilization
This sub-theme explains the treatment mothers take when their children are sick or prevent their children from getting sick. The participants revealed that when their children fall ill, they provide the first treatment by giving traditional medicine. The other participants revealed that if their children were sick, they were taken to the health center, nurse, or midwife. Here are the participants' statements:

"*Sometimes I give traditional medicine such as marigold leaves. There is also medicine from the hospital... when my child is sick, I apply medicated oil first, and if they don't get better, I take them to the hospital" (P1)*
"...sometimes I give traditional medicine, I apply minyak brok (medicated oil) or mix tapioca flour with water, soursop leaves, and I rub it on the body." (P3)

Regarding health service-seeking patterns. Participants revealed that they rarely bring their children to the community health post or the nutrition section at the health center. Here are the quotes of participants' statements:

"I go to the community health post, but sometimes not very often, I don't ask about good food for child nutrition, I'm embarrassed."(P4)

"...rarely, I went once, the midwife told me to go. After that, I never went again. That was the one time I went to the health center, and they explained that my child needs to eat more." (P6)

Socio-Economic Influences

This theme describes the socioeconomic influences that cause stunting in toddlers. Based on the results of interviews with six participants, two sub-themes were found, namely:

Family economic conditions

This sub-theme explains that monthly family income is one of the economic factors that is quite dominant in food consumption and purchasing higher-quality food. Participants revealed that they have unstable incomes and are often low. This is based on the following participants' statements:

"*Not sure, sometimes I get thirty thousand from ketok buah melinjo, if my husband is a construction worker, if a day sometimes get a hundred thousand, later 3 days at home."(P1)*

"...if it's not much because only the father works, I'm at home. his father is a casual laborer, how much he gets is enough for one day, often not enough. Not up to one million in a month." (P3)

Mother's knowledge

This sub-theme explains the mothers' lack of knowledge about the problem of stunting in toddlers. Participants revealed that they did not know why their children could suffer from stunting. Like the quote below:

"*...I also don't understand it, honestly, I am very confused, why is he like this, different from other children, long time can walk and his body is thin." (P3)*

"...I don't know. I don't understand it either." (P4)

"...I don't know either, because when he was born, he weighed 3.2 kg, after that, it looked small, not big." (P6)

4. Discussion

Parental feeding practices influence the variety and type of food prepared for children, especially in the toddler period, when the nutritional needs of children are very high, which are needed for the growth and development process. Errors in feeding practices in toddlers at this time hurt their growth and development.

Parents' feeding practices for toddlers with stunting health problems obtained in this study are the existence of poor feeding practices/habits for toddlers. Participants revealed that these habits, such as not providing exclusive breastfeeding for toddlers. Breastfeeding is only given until the age of the baby between 1 and 4 months, providing complementary foods that lack variety, inadequate food intake for toddlers during growth, and frequent snack habits in toddlers.

Breastfeeding is key to ensuring children grow and develop optimally. Early breastfeeding initiation and exclusive breastfeeding for six months prevent gastrointestinal infections that can lead to nutrient depletion. Bwalya's study in Zambia showed that stunting was significantly associated with exclusive breastfeeding. Early initiation of breastfeeding prevents neonatal and infant mortality by reducing the risk of infectious diseases, thus reducing the risk of stunting [10].

Since the age of 6 months, breast milk alone cannot meet the energy and nutrient requirements needed by infants, so complementary foods (MP-ASI) are required to address the lack of macro and micro nutrients. Complementary feeding is assessed by the time of first feeding, type of complementary feeding, frequency of complementary feeding, and content of complementary feeding.

Judging from the frequency of providing MP-ASI, there are still discrepancies, which should be given three meals a day but the child is only given two meals a day and judging from the food that is usually given to children, there are still discrepancies because there are still many mothers who give food only in the form of rice and vegetable soup. Participants explained that the type of complementary foods (MP-ASI) given to toddlers is soft-textured solid food in the form of bread and brown rice mixed with milk or water, and mashed rice mixed with bananas.

In terms of the portion of food consumed, it was found that toddlers have problems with eating because they have no appetite. When eating, children only take 3-4 mouthfuls per meal. In addition, the lack of variety in food affects children's eating difficulties. Providing children with a variety of foods is very necessary because there is no single type of food that contains all the nutrients needed by the body. This is done so that the child does not get bored and can prevent eating difficulties at a later age.

Childhood malnutrition is a potential risk for stunting and can start from the child's nutritional history (breastfeeding, age of complete cessation of breastfeeding, and age of starting complementary foods). Some studies have shown that children who are given complementary foods at under 6 months of age are three times more likely to be severely stunted than children who are given age-appropriate complementary foods [11].

The results of research shows that children who are given inappropriate complementary foods are 2.867 more at risk of stunting [12]. In addition, children who are given inappropriate complementary foods are 4.886 times more at risk of growing stunted than children who are given appropriate complementary foods [13].

Intake is an essential factor that must be met for the sustainability of life. Intake consists of macronutrient intake namely, carbohydrates, protein, fat, and micronutrient intake, which includes fiber, vitamins, and minerals. The function of protein is as a building substance. Long-term protein deficiency will cause disruption of body regulation and disrupt growth hormones which can cause nutritional disorders such as stunting [14]. Ayumi's research found that the level of deficit protein intake in stunting elementary school children was greater than the intake of non-stunting elementary school children. Deficient protein intake in non-stunting elementary school children amounted to 6.3% [15].

Under-five nutrition problems, such as stunting can arise because the proportion of food consumed is not correct. This can be caused by the lack of purchasing power of the community or the ignorance of parents to provide balanced nutrition for toddlers [14]. Calories are the amount of energy received by toddlers. Energy sources can be in the form of carbohydrates and fats. Lack of energy can cause toddlers to lose weight in a short time and cause acute nutritional disorders such as malnutrition and stunting caused by prolonged chronic nutritional disorders [16].

Feeding infants and children with adequate food is a necessary foundation that supports child development. Reports show that about 30% of children under five years old worldwide are stunted due to poor diet and recurrent infections [17].

In addition to poor feeding habits for toddlers, mothers' habits in utilizing health services, especially community health post, were also found. Participants revealed that toddlers are rarely taken to the community health post to monitor their nutrition. Participants only bring toddlers to health services if they are sick and cannot be handled at home.

Health services are the access or affordability of children and families to disease prevention and health maintenance efforts such as immunization, pregnancy checks, childbirth assistance, child weighing, health and nutrition counseling, and good health facilities such as community health posts, health centers, midwives or doctor practices, and hospitals. Lack of education and knowledge is an obstacle to communities and families making good use of available health services. This can also have an impact on children's nutritional status.

The results of research conducted by Welasasih and Wirjatmadi [18] state that stunted children have a lower frequency of attendance at the community health post. Attendance at the community health post is an indicator of the accessibility of basic health services, including monitoring of development and growth. The level of attendance at an active community health post has a significant influence on monitoring nutritional status. Mothers of toddlers who come to the community health post will get the latest health information that is useful in determining a healthy lifestyle every day [18].

The author assumes that there is a relationship between the utilization of health services and the incidence of stunting and especially when the child is sick, because when the child is ill the child's immune system or immune system is weakened and will be more susceptible to disease especially if the child is not or rarely taken to the community health post.

Socio-economic influences that are associated with stunting in toddlers are family income per month and the level of education or knowledge of mothers. Participants revealed that unstable income even tends to be low, affecting the family's food purchasing power, and do not understand the problem of stunting that occurs in toddlers. Participants know their children suffer from stunting from midwives and local nutrition officers.

Family income is also related to the incidence of stunting. *The United Nations International Children's Emergency Fund* (UNICEF) stated that the root of the problem of infant growth and development is the economic crisis. The inability of the family head to meet the nutritional needs of the baby in terms of quantity and quality results in a harmful impact on the baby's nutrition [19]. The average family income of stunted children was lower than that of normal children [20].

Parental education is also a key factor in child development. Mothers who have higher education will easily get and understand the information they have received, and better interact with their children so that they can behave positively in maintaining good health and parenting. Educated mothers are known to have a broader knowledge of child care practices. Educated mothers are more likely to make decisions that will improve the nutrition and health of their children [21].

The level of education, especially the mother's level of education, can affect health status. This is because the role of the mother is very much in the formation of children's eating habits. After all, it is the mother who prepares food, starting from organizing the menu, shopping, cooking, preparing, and distributing food. Mothers with poor knowledge have a 1.644 times higher risk of having stunted toddlers when compared to mothers who have good knowledge [22]. Other research states that mothers with poor knowledge have a 3.27 times greater risk of stunting compared to mothers with good knowledge [23].

5. Conclusions

Based on the results of the study, it can be concluded that the causes of stunting in toddlers can be due to inappropriate maternal feeding practices, such as non–exclusive breastfeeding, complementary feeding (MP-ASI) that is not varied, and inadequate food intake. Furthermore, improper utilization of health services, including an incomplete history of immunization and underutilization of health services, can contribute to stunting. Family socio-economic influence also plays a role in the incidence of stunting.

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