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Nutritional Content Analysis of Stunting Toddler Food Menu Based on Local Food

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Abstract. This study aims to analyze the nutritional content of stunted toddler food menus based on local food. The study was conducted at the Culinary Laboratory of the Nutrition Study Program, State University of Medan. The research design was a qualitative descriptive study. The data used were primary data and secondary data. Primary data was obtained from interviews with mothers of toddlers about the food usually given to toddlers. Secondary data is data obtained from data collection techniques that support primary data sourced from books, journals, literature, and other documents. The stunted toddler menu in this study used local food ingredients. Therefore, identification of local food ingredients from North Sumatra was carried out which had great potential to be used as toddler food with the consideration that it was produced in the North Sumatra region, rich in certain nutrients, cheap, and easy to process with boiling and steaming techniques. Furthermore, a draft of a toddler menu that was rich in nutrition was made by developing recipes and substitutions of local food ingredients derived from energy, carbohydrates, protein and fat. The selected recipes have been tested. The nutritional content of the stunted toddler menu was analyzed using Nutrisurvey. The results of the analysis of nutritional content in the food menu for stunted toddlers based on local food shows that local food ingredients can be an alternative solution in dealing with stunting problems in toddlers. By utilizing food ingredients available in the area, the food menu can be arranged to meet the nutritional needs of toddlers, such as energy, protein, fat, vitamins, and essential minerals. This local food-based menu is not only more economical but also has the potential to improve the nutritional status and health of toddlers sustainably. The implementation and use of local food in the menu for stunted toddlers also supports community food security and the sustainability of local resources.

Keywords : Nutrition; Food Menu; Stunting Toddlers; Local Food

INTRODUCTION

Toddlers are the group most vulnerable to nutritional problems. Toddlers who are malnourished can experience malnutrition, low body weight, stunting, or have a height that is not appropriate for their age (Kusudaryati, Prananingrum, & Untari, 2017). On the other hand, toddlers can also experience excess nutrition (obesity). Based on the results of the 2022 Indonesian Nutritional Status Survey (SSGI), the stunting rate in toddlers was 21.6%. Stunting cases in the city of Medan in 2019 were recorded at 555 out of 119,225 toddlers. The number of stunting cases decreased, from 491 cases in 2020 to 393 cases in 2022. Despite the decline, the government remains focused on efforts to reduce and prevent stunting through various programs involving all related agencies.

Stunting is caused by various interrelated factors (Ministry of Health of the Republic of Indonesia, 2022). Some of the main causes include inappropriate parenting patterns, lack of understanding of health and nutrition, and inadequate nutritional intake before and during pregnancy (Yoto et al., 2020). Many children aged 0-6 months do not receive

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exclusive breastfeeding and 2 out of 3 children aged 6-24 months do not receive optimal complementary foods (MP-ASI) (Arini & Febriyatna, 2019). The impact of malnutrition during the first 1,000 days of life, from the fetus to the age of two (toddlers), not only affects physical development but also cognitive development, which ultimately affects intelligence, agility, and efficiency in thinking and working as adults. Providing good complementary foods (MP-ASI) during toddlerhood can significantly increase child growth. Conversely, inadequate MP-ASI can cause abnormal growth in children by up to a factor of 6.5 (Ministry of Health of the Republic of Indonesia, 2022)

Most people, especially parents who have children, do not realize that children who are shorter than children their age are stunted children. They assume that the short body condition of children is often said to be a hereditary factor (genetic) from both parents and accept the condition without doing anything to prevent it. (Apriluana, 2018). Experts say that genetics is the health determinant factor that has the least influence on toddler growth when compared to behavioral factors, environment (social, economic, cultural, political), and health services.

Biologically, children who are still young and unable to eat on their own have an immune system and digestive system that is still not regular (Ministry of Health of the Republic of Indonesia, 2022). Being easily sick and getting infectious diseases such as diarrhea proves that children's immune systems are still low. This makes children more likely to be at risk of disease and nutritional problems. In addition, in terms of obtaining food, children are very dependent on their parents.

Wrong eating patterns or eating habits put children in a vulnerable position to nutritional problems. This is due to environmental factors and poor parenting, especially the behavior and habits of children who do not want to eat according to their nutritional intake (Yoto, 2020). During childhood, most children only want to eat one type of food for weeks (Maulidia et al., 2022). Therefore, if these food problems are not noticed by parents, they will affect the fulfillment of nutrition and the nutritional status of children (Kusudaryati, Prananingrum, & Untari, 2017). Nutritional intake that is in accordance with the needs of toddlers can prevent a toddler from experiencing nutritional problems so that the growth and development of toddlers can be achieved optimally.

Fulfillment of nutritional food needs for toddlers is something that needs to be considered in maintaining toddler health. The impact of malnutrition in the first 1000 days of life starts from the fetus to two-year-old children (toddlers), this not only affects physical development, but also affects cognitive development such as intelligence, dexterity, and efficiency of thinking and working of children as adults. Providing good complementary foods at the age of toddlers can significantly increase child growth. Providing poor complementary foods has an impact on abnormal child growth by 6.5 times (Rahmad, AHA, 2017).

Providing nutrient-rich food for toddlers is important for supporting their health. Local food ingredients are food ingredients that are widely available or are typical in one area. Utilization of local food ingredients is important because they are easy to reach, one of which is in terms of price (Budi Prabowo et al., 2024). Local food, livestock and protein sources from the sea are food sources that have great potential to be processed into foods that are rich in nutrients, especially for toddlers (Kusudaryati, Prananingrum, & Untari,

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2017). Local foods such as sweet potatoes, corn, and vegetables have a balanced nutritional content, including carbohydrates, protein, vitamins, and minerals. For example, sweet potatoes and green beans not only provide energy but also protein and various vitamins that are important for toddler growth.

Utilization of local food to meet the nutritional needs of the community, especially toddlers who are vulnerable to nutritional problems, is very necessary, in addition to being able to preserve local culture (Budi Prabowo et al., 2024; Kasmini, 2023). Research is needed on recipes for stunting toddler menus based on local food for mothers who have stunted toddlers and posyandu cadres as a medium and guideline in providing nutritious food for their children.

METHOD

This research was conducted at the Culinary Laboratory of the Nutrition Study Program, State University of Medan. The research design used in this study was qualitative descriptive research. The data used in this study were primary data and secondary data. Primary data was obtained from interviews with mothers of toddlers about foods that are usually given to toddlers. Secondary data is data obtained from data collection techniques that support primary data sourced from books, journals, literature and other documents related to the research problem. The stunting toddler menu in this study uses local food ingredients. Therefore, identification of local food ingredients in North Sumatra that have great potential to be used as toddler food was carried out considering that they are produced in the North Sumatra region, rich in certain nutrients, cheap, and easy to process with boiling and steaming techniques. Furthermore, a draft of a toddler menu that is rich in nutrition was made by developing recipes and substitutions of local food ingredients derived from energy, carbohydrates, protein and fat. The selected recipes have been tested. The nutritional content of the stunting toddler menu was analyzed using Nutrisurvey based on the identified culinary recipes. The food ingredients in the recipe are entered into the application and then the nutritional content that can be used is listed.

RESULTS AND DISCUSSION

Stunting often occurs due to chronic nutritional deficiencies over a long period of time. Children under two years of age who experience stunting are caused by a lack of macro and micro nutritional intake such as energy, protein, iron, calcium, zinc, vitamin A, and vitamin D. A food menu with nutritional content that is in accordance with children's needs is very important to consider during the first 1,000 days of life to support physical growth, brain development, and immune system function (Margawati A, 2022).

The results of interviews with 3 mothers who have stunted toddlers showed obstacles in their children's eating patterns. The mother said that her child only ate simple food, did not like vegetables, fish and more often only consumed rice and eggs. This means that the nutritional intake received by the child is less diverse and does not meet the balanced nutritional needs needed for their growth.

The habit of children who only eat rice and eggs without other variations, especially vegetables and fruits, can cause a deficiency of important nutrients such as energy, protein,

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vitamins, minerals, and fiber which are very much needed for optimal growth and development. Limited nutritional intake can be one of the causes of stunting, because the child's body does not get enough food to support height growth and brain development. Nutritious food is needed by toddlers according to their age in order to achieve maximum growth (Kusudaryati, Prananingrum, & Untari, 2017).

To overcome this, an approach is needed that involves educating parents, especially regarding the importance of providing more varied foods that contain complete nutrition (Arini & Febriyatna, 2019). For example, encouraging children to try vegetables in an interesting way or gradually adding other foods to their daily diet. Food recipes that use local foods with easy processing are very helpful for mothers in preparing food for stunted toddlers (Rahma et al., 2022).

The menus in this study were produced with a taste that was not sharp and did not use many spices. This is because toddlers, especially children who are just starting to be introduced to complementary foods (MPASI). The menus chosen pay attention to the combination of various nutrients and the amount according to age (Irianto & Giyatmi, 2021). Providing complementary foods (MPASI) is one of the important periods in the first 1000 days of a child's life (Arini & Febriyatna, 2019). During this period, children learn to eat and this experience becomes a moment to form the correct eating behavior in children. Providing the right MPASI can support optimal growth and development of children. In this study, MPASI for babies aged 6-9 months is porridge made from local food ingredients rich in nutrients. The porridge made in addition to rice/rice porridge, also uses local foods such as pumpkin, banana, cassava, sweet potato and corn. All foods that have been calculated for their nutritional content have been tested for processing food and have been tested organoleptically on mothers and children aged> 1 year.

The menu for children under two years old is a series of dishes served in one meal. The food consumed must meet all nutritional needs for growth and development according to age in one day (Arini & Febriyatna, 2019). At the age of more than 6 months, complementary foods (MP-ASI) have been introduced. The food given is food in the form of pureed such as porridge, milk porridge, half-cooked eggs, mashed bananas, papaya and other soft foods. When entering the age of 9-12 months, soft or soft foods such as steamed rice can be introduced. After the child is 12 months old, family food can be introduced. The menu is arranged to support optimal growth and prevent malnutrition.

The results of this study obtained a menu for children under two years old grouped into 3 age groups starting from the age of 6-24 months. The menu is arranged with a 3-day cycle each for the age group 6-9 months, 9-12 months, 12-24 months. Children aged 0-6 years are given exclusive breast milk. After the age of 6 months, children begin to be introduced to pureed foods. Breast milk is still given as the main source of nutrition until the child is 2 years old.

The food chosen with various considerations includes containing high protein, fat and energy, ingredients that are easily obtained at affordable prices. At the age of 6-9 months, the food given is in the form of thick porridge and pureed food that comes from the food ingredients themselves. The processing is done by grinding the food ingredients, adding flavors and cooking. For example, pumpkin porridge, banana porridge, corn porridge. Adding fruit to baby biscuits can be done to add flavor to the Naga Pisang porridge. The

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addition of fruit, side dishes and vegetables brings out the original taste of the food ingredients and can increase the nutritional content of the food.

Tabel 1. Menu untuk anak usia 7,1-9,0 bulan

Menu	Kandungan gizi			
	Energi (kkal)	Protein gr	Lemak gr	Karbohidrat gr
Makanan Lumat/halus				
Bubur Sumsum Labu Kuning	134,8	13,8	67,5	186,4
Bubur Naga Pisang	115	3,7	3,75	18
Bubur Jagung Wortel Ayam	531,6	39,4	27,1	37,7

In Table 1, the pumpkin sumsum porridge menu is given rice flour and coconut milk as a source of fat. The results of the calculation of nutritional content, the menu has 134.8 kcal of energy and 13.8 gr of protein. Bubur Naga Pisang is a porridge made from fruit with the addition of baby biscuits and milk to complete the protein source of this porridge. Corn carrot chicken porridge provides a savory taste with an energy source from corn and protein from chicken. This menu has a high energy content from corn, chicken and carrots. This porridge can be given 2-3 times a day with the initial provision as a stage of introducing food tastes as much as 2-3 tablespoons at each meal. The provision of porridge is gradually increased to 1/2 bowl (125 ml).

At the age of 6-9 months, babies begin to recognize complementary foods (MPASI) to meet increasing nutritional needs (Arini & Febriyatna, 2019). MPASI for this age should be nutritious, varied, and soft in texture according to the ability of babies who are still learning to chew. Mashed or pureed food is very appropriate to be given to children to meet their nutritional needs such as corn porridge, carrots and chicken. At the age of 7-12 months, children's energy needs are 725 kcal per day and 18 grams of protein.

Providing a dragon porridge menu in the morning, corn carrot chicken porridge at noon and night while continuing to provide exclusive breastfeeding can meet children's nutritional needs in one day. Table 2 shows the menu for children aged 9-12 months where at this age the food given is in rough or finely chopped form. Food can be held by children so that children can learn to eat by themselves. Food is given complete, rice with side dishes and vegetables and added with fruit. The texture of food that can be given is tim rice, finely chopped and coarse food. Children can be given 3-4 times a day with 2 snacks. The amount of food can be increased to 200 ml per meal.

Tabel 2. Menu untuk anak usia 9,1-12 bulan

Menu	Kandungan gizi			
	Energi (kkal)	Protein gr	Lemak gr	Karbohidrat gr
Lauk Pauk				
Abon Ikan Tongkol	179,3	25,66	6,18	5,51
Ikan Kembung kuah kuning	231,2	21,5	13,1	8,7
Soup Tahu Telur	331,0	19,4	24,8	10,8
Sayur				

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Menu	Kandungan gizi			
	Energi (kkal)	Protein gr	Lemak gr	Karbohidrat gr
Orak arik tahu toge wortel	484,5	30	36,2	13,1
Sup labu kuning dan tempe	190,4	13,7	8,8	15,7
Kuah bening labu kuning	232,6	3,5	12,2	33,1
Selingan				
Pancake pisang	195,6	9,2	7,7	22,7
Bubur ubi ungu kelapa muda	238,9	7,3	5,3	41,6
Pancake jala-jala vla serikaya labu	326	6,56	10,2	53,2

At the age of 12-24 months, children begin to be introduced to foods consumed by the family. Children's energy needs are 800 kcal per day. At the age of 12 months, in accordance with their motor development, babies are more skilled at chewing various types of solid foods. Along with the growth of nutrition and the sense of taste, solid foods can be processed from rice, meat, eggs, chicken, broccoli, chayote, noodles, bread, apples, melons, watermelons, and others. The formulation of red snapper and carrot-based omelets has a nutritional content that comes from protein and fiber that the body needs (Fitrasyah et al., 2023).

The number of children's teeth that grow is usually much greater, making it easier for them to chew. The texture of baby food is usually much denser and heavier, similar to the family's menu (Margawati A, 2022). Children can also eat by themselves without needing much help from their mothers or other people like at previous ages. Children aged one to two years need 1000-1400 calories per day. Apart from breast milk, this number of calories can be obtained from vegetables, fruits, carbohydrate sources, animal and vegetable protein sources, and milk.

Tabel 3. Menu untuk anak usia 12,1-24 bulan

Menu	Kandungan gizi			
	Energi (kkal)	Protein gr	Lemak gr	Karbohidrat gr
Lauk pauk				
Ayam kecap tumis	413,7	26,9	28,9	11
Sop bola udang wortel brokoli	282,1	25,7	9,3	22,2
Ikan tongkol suir	148,1	12,9	10,5	1,1
Chicken Cutlet	151,3	81	94	80,1
Sayur				
Soup oyong	180,8	7,3	15,9	2,7
Tumis labu siam tempe	234	11,6	14,5	18,8
Tumis wortel, jagung dan tahu	206,9	6,7	13,5	20,2
Selingan				
Barongko pisang	142,7	2,4	2,5	29,3
Talam jagung	534,7	12,6	7,6	109,1
Pancake pisang	195,6	9,2	7,7	22,7

Table 3 contains a menu for children aged 12.1 to 24 months designed to meet nutritional needs, especially for physical growth, brain development, and overall health. At

this age, children begin to consume solid family foods with more varied textures, but must still be balanced and nutritious. Toddlers begin to learn to chew and can start to enjoy various types of denser foods, but still need to pay attention to the texture and size of the food pieces. The designed menu contains protein which is important for muscle and body tissue growth. Animal protein sources such as chicken, fish, and eggs provide complete essential amino acids. Vegetable proteins such as tofu, tempeh, and nuts. Green vegetables such as chayote, chayote and carrots are rich in important vitamins and minerals, especially iron and vitamin A. Fresh fruits such as bananas, papaya, oranges, and apples can complement the menu for stunted toddlers.

CONCLUSION

The results of the analysis of nutritional content in the food menu for stunted toddlers based on local food show that local food ingredients can be an alternative solution in dealing with stunting problems in toddlers. By utilizing locally available food ingredients, a food menu can be designed to meet the nutritional needs of toddlers, such as energy, protein, fat, vitamins, and essential minerals. This local food-based menu is not only more economical but also has the potential to improve the nutritional status and health of toddlers sustainably. The implementation and use of local foods in the menu of stunted toddlers also supports community food security and the sustainability of local resources.

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