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Consumption Traditional Food Description in Children Under Five in the Coastal Family of Bengkulu City, Indonesia

Gambaran Konsumsi Makanan Tradisional pada Balita di Keluarga Pesisir di Kota Bengkulu, Indonesia

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ABSTRACT

Background: Traditional food is the most potent food to develop and is an essential component in intervention strategy for increasing toddler daily consumption. Traditional food contributes to micro-nutrition and protein, which are needed for toddler growth.
Objectives: This research aimed to identify traditional food and toddlers' traditional food consumption in coastal families in three ethnicity in Bengkulu.
Methods: This research used a cross-sectional design. Samples were mothers as food givers in the family, and the analysis unit was the toddler, in a total of 115, picked randomly from 137 households with 12-59 months old toddlers. Data was collected using quantitative and qualitative techniques, in-depth interviews, and food recall forms. Traditional food identification comes from FFQ (Food Frequency Questionnaire). Consumption of toddler fisherman family data that had been collected and compared with RDA 2019. Analyses were done by formulating the results from the in-depth interview and uni variate analysis.
Results: Traditional food contribution to fisherman's toddler contained 19.34% energy, 40.86% protein, 17.65% fat, 17.65% carbohydrate, 16,3% PUFA fat acid, and 13.8% MUFA. Many different traditional foods often consumed by Melayu, Serawai, and Minang ethics in coastal families could be classified as fish, vegetables, and snacks.
Conclusions: Traditional food contribution could fulfill nutritional needs of energy and macro-nutrients ranging from 17-41%. We must increase traditional food consumption in coastal families by varying processing so that each ethnicity's distinctive taste in traditional food can be maintained.

INTRODUCTION

Food consumption is the most important and modifiable lifestyle determinant of a person's health[1]. Food is a basic human need in which each individual has different criteria according to their tastes and abilities[2]. One source of food that has the potential to be developed is traditional food. Traditional food needs to be preserved as it is fundamental to a culture[3].

As it has existed for a long time, local food in Indonesia is highly valued as a cultural heritage. The recipes have also been inherited from generation to generation; even the cooking still resembles the old way. Even though modifications or variations exist, the main ingredients and cooking procedures have not changed[4]. Traditional food is also can be a local identity because of its part of the culture of the community, including (1) specific procedures for processing food ingredients, (2) community culture and celebratory arrangements, (3) recipes that have been inherited from generation to generation and (4) have specific characteristics that distinguish them from culinary arts[5].

The type or amount of food in an area develops from local food or food grown there for a long time[6]. For example, in coastal communities, most of their livelihoods are fishermen. The daily food that is chosen and usually consumed is various types of sea fish because these foods are easy to obtain or can be produced independently. Conversely, in mountainous areas generally suitable for gardening or farming, they consume various types of vegetables or fruits more often than fish[7].

The traditional food of plant and animal origin contributes to sustainable food security and nutrition at the family level[5]. However, a shift in dietary patterns is occurring globally, including in children under five. This pattern is from consuming traditional diets that tend to be more nutrient-dense to consuming westernized diets that are more energy-dense and high in sugar, salt, and

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saturated fat, which impact obesity and chronic disease[8,9].

Traditional food processing methods such as soaking, fermentation, and germination can increase the bioavailability of micro-nutrients[5]. Nowadays, people often lack micronutrient deficiency, even though iron, vitamin A, and vitamin C are abundant in traditional foods[10]. Increasing the consumption of traditional food sources is a way that can be used to increase and improve family nutrition. The consequences of changing the traditional food consumption pattern into modern food lead to reducing the consumption of fish, vegetables, and fruit[9]. As a result, the intake of micro-nutrients and fiber decreases, increases energy consumption, carbohydrates, and fats, and increases obesity and chronic diseases[11]. Personal factors (including taste, emotion, and personality), biological and psychological (including age, gender, and psychological influence), and intrinsic factors (including taste, aroma, appearance, and food quality) significantly influence preferences in choosing and consuming traditional food in toddlers[12]. Traditional food consumption is more common in men and will increase with age in men and women[9].

Traditional food can be classified into several groups: staple food, side dishes, vegetables, snacks, or snack food. Nowadays, traditional snack foods are rarely served by the community. As manager and provider of food in the family, the mother has a crucial role in introducing traditional snack foods, from providing education about traditional snack foods to providing food in the family so that toddler consumption of traditional snack foods can be maintained[13].

Increasing local food consumption is essential to intervention strategies to improve nutritional status, especially for toddlers. In Bengkulu province, the pattern of traditional food consumption is strongly influenced by the season and the availability of food ingredients; for example, a traditional food ingredient called "Bagar shark" is usually cooked when fishermen get sharks. This fish smells not too fishy, and its skin is softer than other sharks. This traditional animal side dish is often processed using "Tempoyak," which results from fermented durian. This fermented durian has acidity, and people often consume a distinctive aroma during the durian season. This traditional food was created because of local wisdom that can process an abundant durian harvest[14]. This traditional food is often served in family meals cooked with animal protein sources such as sea fish and shrimp.

Toddler age is the most critical period for both physical growth and development. Toddlers are very dependent on the food served by their parents to meet their nutritional needs[15]. It is common for the Malay, Minang, and Serawai ethnic groups to serve traditional food as snacks, side dishes, and vegetables. Serving side dishes generally uses coconut milk and tastes spicy. Family food processing is not differentiated between food for adults and children under five.

To our knowledge, there are no studies or publications on traditional food in the three tribes on the coast of Bengkulu, which are the most populous in Bengkulu City. This study aimed to identify the types of traditional food and the nutritional contribution of traditional food in the daily consumption of toddlers, especially energy and macro-nutrients, as well as polyunsaturated fatty acid (PUFA) and monounsaturated fatty acid (MUFA) in fishing families in Bengkulu.

METHODS

Exploratory research was conducted using a cross-sectional design in Bengkulu City from April to May 2018. This study received approval from the ethical committee of the Faculty of Public Health, Diponegoro University No. 31/EC/FKM/2017.

The study population was a household with children under five aged 12-59 months totaling 137 people living on the coast. The sample was mothers as food providers in selected families, and the unit of analysis was toddlers totaling 115 people. The analysis used a combination of two approaches: qualitative and quantitative. The first approach was carried out by interviewing five mothers in each tribe. Interviews were conducted with families who work as fishermen in three ethnic groups: Malay, Minang, and Serawai ethnic groups. The thematic interview guide used for the interview identified traditional foods (types) often consumed by fathers, mothers, children, and grandmothers, including types of side dishes, snacks, and vegetables. The results of traditional food identification were used to develop a questionnaire for the food frequency questionnaire (FFQ.) The FFQ consisted of snacks, side dishes, and vegetables that mothers, fathers, children, and grandmothers often consume when they live with their families. This data collection used open questions on the three tribes. To determine the intake of food consumption for toddlers, including energy, protein, fat, carbohydrates, PUFA, and MUFA fatty acids, the researcher used the 2x24-hour food recall form. Food consumption data were collected for one day off and one day of active work to represent the daily consumption of children under five.

In this study, the contribution of traditional food is the amount and type of nutrients (energy, macro-nutrients, PUFA, and MUFA fatty acids) contributed by traditional food divided by the total daily nutrient intake of each child. Processing of food consumption data for toddlers obtained by averaging toddlers' food intake was then compared with the Nutrition Adequacy Rate (RDA) multiplied by 100%. Consumption of energy, protein, fat, and carbohydrates was categorized into two groups: insufficient if consumption was ≤89% RDA and sufficient if consumption was ≥90% RDA. Data on the contribution of traditional food was processed by calculating the nutrients in traditional food alone compared to the consumption of food for toddlers multiplied by 100%.

RESULTS AND DISCUSSION

Traditional Food of the Malays, Minang, and Serawai Tribe

Malay Tribe

The Malay tribe is the fourth largest tribe in Bengkulu province. Bengkulu Malays generally live in the city of Bengkulu, and most people work as fishermen. Bengkulu Malays are commonly referred to as the "Bengkulu people." In daily life, there is no significant

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difference between the cuisine of the Malay fishing community and other ethnic groups living in Bengkulu. The Bengkulu Malays usually prepare food with a mixture of spices with a sharp aroma and do not use much coconut milk.

Table 1. Identification of types of snacks, side dishes, and vegetables that are often consumed in Malay coastal families

Type Food	Family members			
	Mother	Father	Child	Grandmother
Snacks	- *Onde-onde* (Boiled rice cake) - *Bolu semut* (Ant sponge) - *Kue Tat* (Tat cake) - *Lepat binti* - *Serabi* (Pancake)	- *Onde-onde* (Boiled rice cake) - *Kue Tat* (Tat cake) - *Bolu semut* (Ant sponge) - *Lepat binti* - *Lepat ubi* (Lepat sweet potato)	- *Bolu semut* (Ant sponge) - *Onde-onde* (Boiled rice cake) - *Kue Tat* (Tat cake) - *Lepat ubi* (Lepat sweet potato) - *Serabi* (Pancake)	- *Bolu semut (Ant sponge)* - *Lepat binti* - *Cucur pandan* - *Kue tat (Tat cake)* - *Lepat ubi (Lepat sweet potato)*
Side dishes	- *Ikan goreng balado* (Balado fried fish) - *Goreng asam* (Sour fry) - *Asam padeh* - *Taoco ikan* (Fish tacos) - *Ikan santan kuning* (Yellow coconut fish)	- *Ikan goreng balado* (Balado fried fish) - *Goreng asam* (Sour fry) - *Asam padeh* - *Taoco ikan* (Fish tacos) - *Ikan santan kuning* (Yellow coconut fish)	- *Ikan goreng balado* (Balado fried fish) - *Goreng asam* (Sour fry) - *Taoco ikan* (Fish tacos) - *Asam padeh* - *Ikan santan kuning* (Yellow coconut fish)	- *Bagar hiu* (Shark bag) - *Goreng asam* (Sour fry) - *Taoco ikan* (Fish tacos) - *Ikan pais* (Pais fish) - *Tempuyak*
Vegetables	- *Pucuk ubi* (Sweet potato tops) - *Rebung manis* (Sweet bamboo shoots) - *Gulai nangko* (Jackfruit curry) - *Sambal kabau* (Kabau chili sauce) - *Gulai pucuk kates* (Papaya shoot curry)	- *Pucuk ubi* (Sweet potato tops) - *Rebung manis* (Sweet bamboo shoots) - *Gulai nangko* (Jackfruit curry) - *Sambal kabau* (Kabau chili sauce) - *Gulai pucuk kates* (Papaya shoot curry)	- *Pucuk ubi* (Sweet potato tops) - *Gulai nangko* (Jackfruit curry) - *Rebung manis* (Sweet bamboo shoots) - *Tumis pucuk lumai* (Saute the lumai shoots) - *Gulai pucuk kates* (Papaya shoot curry)	- *Gulai jamur gerigit* (Mushroom goulash) - *Gulai pucuk kates* (Papaya shoot curry) - *Gulai keladi* (Taro curry) - *Pucuk ubi* (Sweet potato tops) - *Rebung manis* (Sweet bamboo shoots)

In the Malay ethnic group, grandmothers who live with the central family like snacks, side dishes, and vegetables from traditional specialties. In general, toddlers like traditional food the same as their mother's and father's preference. Nevertheless, the kids did not like the shark bagar cooking, which grandma likes. One of the special foods of the Bengkulu Malays that could not be found in other areas was bagar sharks. The shark bagar dish looks like Rendang curry, but the shark bagar does not use coconut milk. For the shark bagar seasoning, roasted coconut and crushed spices are used, and chili is added. An informant said, "Bengkulu people are endangered of Suko Nian Bagar sharks, so highly dependent on availability." Sharks are processed with a unique trick to eliminate the pungent smell of sharks, cleaned with lime, and using lots of spices.

Another processed fish with a spicy taste and a typical Bengkulu Malay food is Pais fish, made from sea fish. Pais fish is processed by adding chilies and delicate spices, wrapped in taro leaves, and steamed until cooked. Apart from that, there are also several processed fish without adding chili, so most of these dishes are children's dishes, including pickled fish, coconut milk with yellow seasoning, and white coconut milk.

The vegetables that the Bengkulu Malays usually eat in fishermen's families are not much different from those of other ethnic groups in Bengkulu. Vegetables consumed are generally purchased at traditional markets in Bengkulu. Most of the vegetable preparations with the addition of spices are taro curry, papaya shoot curry, and sweet potato shoot curry. Some vegetables are processed with additional stir-fried chilies, such as *Sambal unji* (unji chili sauce) and *Sambal kabal* (kabau chili sauce).

Tat cake is one of the snacks liked by every tribe in Bengkulu, but there are some differences in the processed cake. The Tat cake originates from the Bengkulu Malay community and is shaped rectangular. Unlike the Serawai tribe, tat cake is round and leaf-shaped. Another snack that is prepared like sponge cake but with the addition of jam from tamarind and is only found in Bengkulu Malays is Som cake.

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Minangkabau Tribe

The Minang tribe is a tribe closely related to overseas. The existence of the Minang tribe in Bengkulu is due to immigrants from West Sumatra. The location of these two areas is close together and can be reached by land and sea, causing most Minang people living in the city of Bengkulu to work as fishermen.

Minang ethnic cuisine is widely known in Indonesia, which is known as Padang cuisine. This Padang cuisine is known to use a lot of coconut milk and meat and has a spicy taste from the usage of herbs and spices. The Minang people who live along the coast of the city of Bengkulu consume fish as a side dish. The fish results from daily work carried out by the head of the Minang tribal family (fishermen). The fish-based side dishes are prepared with spicy flavors and sharp seasonings. Minang ethnic cuisine includes processed fish, *asam padeh*, fried fish balado, and fish cooked in coconut milk.

Table 2. Identification of the types of snacks, side dishes, and vegetables that are often consumed by fishing families of the Minang tribe

Type Food	Family members			
	Mother	**Father**	**Child**	**Grandmother**
Snacks	- *Lepat binti* - *Onde-onde* (Boiled rice cake) - *Kue Tat* (Tat cake) - *Serabi* (Pancake) - *Bolu semut* (Ant sponge)	- *Lepat binti* - *Onde-onde* (Boiled rice cake) - *Apam* - *Kue Talam* (Talam cake) - *Lemang Tapai*	- *Onde-onde* (Boiled rice cake) - *Lepat binti* - *Apam* - *Kue Talam* Talam cake - *Serabi* (Pancake)	-
Side dishes	- *Ikan goreng balado* (Balado fried fish) - *Goreng asam* (Sour fry) - *Asam padeh* - *Taoco ikan* (Fish tacos) - *Ikan santan kuning* (Yellow coconut fish)	- *Ikan goreng balado* (Balado fried fish) - *Goreng asam* (Sour fry) - *Asam padeh* - *Taoco ikan* (Fish tacos) - *Ikan santan kuning* (Yellow coconut fish)	- *Ikan goreng balado* (Balado fried fish) - *Asam padeh* - *Goreng asam* (Sour fry) - *Taoco ikan* (Fish tacos) - *Ikan santan kuning* (Yellow coconut fish)	-
Vegetables	- *Gulai nangka* (Jackfruit curry) - *Pucuk ubi* (Sweet potato tops) - *Kabau chili sauce* (Sambal kabau) - *Rebung manis* (Sweet bamboo shoots) - *Gulai keladi* (Taro curry)	- *Pucuk ubi* (Sweet potato tops) - *Gulai nangka* (Jackfruit curry) - *Kabau chili sauce* (Sambal kabau) - *Rebung manis* (Sweet bamboo shoots) - *Gulai keladi* (Taro curry)	- *Gulai nangka* (Jackfruit curry) - *Pucuk ubi* (Sweet potato tops) - *Rebung manis* (Sweet bamboo shoots) - *Kabau chili sauce* (Sambal kabau) - *Tumis pucuk lumai* (Saute the lumai shoots)	-

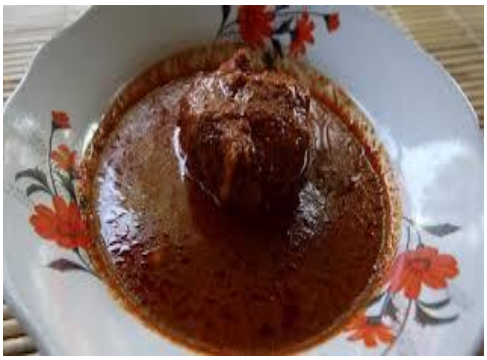

Figure 1. *Bagar Shark*

Processed vegetables in Minang cuisine are also inseparable from using coconut milk and spices. The vegetable ingredients used are widely available in Bengkulu, but the processing shows the characteristics of Minang cooking. The Minang people process vegetables by adding spices and coconut milk. They usually consume

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vegetable dishes are jackfruit curry, sweet potato shoot curry, and papaya shoot curry.

Snacks consumed by the Minang tribe living on the coast of Bengkulu City are snacks commonly found in the Bengkulu community. An informant (BY, 41 years) said, "There is no typical Minang nian food that we eat. These Bengkulu people's snacks are what we usually make because we are living in a long time in Bengkulu, so it's normal with Bengkulu people's food" (Tribal community Minang people do not eat snacks that are specific to the Minang tribe but depend on the availability of snacks available in the market). Types of snack foods that are commonly consumed include *kue tat, lemang tapai, cucur pandan, gabuk-gabuk, kembang goyang, lepat binti, onde-onde, caceh, kince, pancakes, kop sponge cake, tray cakes, lepat binti, sualow.*

Figure 2. *Cucur pandan* and *Kembang goyang*

Serawai tribe

Serawai tribe is a tribe with the second largest population living in Bengkulu. The Serawai tribe is a tribal community that lives in South Bengkulu Regency. The custom of the Serawai people is to migrate to other areas, and the city of Bengkulu is one of the areas where the Serawai tribe travels. Most Serawai people in Bengkulu City fulfill their daily needs by going to sea. Most Serawai tribe work as fishermen due to their location, which is geographically located on the coast of the Indian Ocean.

The Serawai people in Bengkulu City prepare food differently than the Serawai people in general. The food consumed is predominantly processed with spices and coconut milk. The people of the Serawai Bengkulu tribe live on the coast and work as fishermen, so they have sea fish side dishes. One processed sea fish they often consume is *ikan masak tempoyak* (cooked tempoyak fish). Tempoyak is fermented durian for about 3 to 4 days. The pungent sour aroma of tempoyak is a distinctive aroma that the Serawai people like. Tempoyak cooked fish is prepared with the essential ingredients.

Tempoyak is a traditional food made from preserved durian flesh that can last years without artificial preservatives. tempoyak has a sour taste with a sweet and salty taste. This traditional food is usually used as an addition to several processed fish and vegetable products. Lemea is made from bamboo shoots (bamboo shoots) sliced into small pieces and mixed with raw mucus fish or other freshwater fish whose innards have been cleaned and then mixed and put in a large jar covered with banana leaves closed tightly until the fish is destroyed by fermentation. The fastest fermentation process takes three days. The lemea can last for months without preservatives. Both are primary ingredients for typical regional vegetable dishes such as *pepes tempoyak* and *catfish*[14]. In addition, the fish taco *(Taoco)* is one of the processed sea fish usually served during festivals held by the Serawai tribe. Taoco is made from fermented soybeans and then processed with raw seafood materials, spices, chilies, and coconut milk added. The typical vegetables of the Serawai tribe that they consume are obtained from several traditional markets in Bengkulu, and traders bring these vegetables from the Serawai hamlet. The vegetables typical of the Serawai tribe include *kembaang, lumai, unji*, and bamboo shoots. The Serawai tribe usually adds these vegetables to processed fish curry. One of the informants (SS, 31 years) said, "When we cook fish with coconut milk, we put *jugo unji* or kembang in it."

Table 3. Identification of types of snacks, side dishes, and vegetables that are often consumed by fishing families of the Serawai tribe

Type Food	Family members			
	Mother	**Father**	**Child**	**Grandmother**
Snacks	- *Lepat binti* - *Onde-onde* (Boiled rice cake) - *Bolu semut* (Ant sponge) - *Serabi* (Pancake) - *Kembang goyang* (Rocking flower)	- *Lepat binti* - *Onde-onde* (Boiled rice cake) - *Bolu semut* (Ant sponge) - *Kue Tat* (Tat cake) - *Lepat ubi* (Lepat sweet potato)	- *Bolu semut* (Ant sponge) - *Lepat binti* - *Kembang goyang* (Rocking flower) - *Kue Tat* (Tat cake) - *Lepat ubi* (Lepat sweet potato)	-
Side dishes	- Tempuyak - *Ikan gabus masak santan* (Snakehead fish cooked in coconut milk)	- *Ikan gabus masak santan* (Snakehead fish cooked in coconut milk) - Tempuyak	- Tempuyak - *Ikan gabus masak santan* (Snakehead fish cooked in coconut milk)	-

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Type Food	Family members			
	Mother	Father	Child	Grandmother
	- *Ikan santan kuning* (Yellow coconut fish) - *Ikan goreng balado* (Balado fried fish) - *Ikan pais* (Pais fish)	- *Ikan goreng balado* (Balado fried fish) - *Ikan santan kuning* (Yellow coconut fish) - *Asam padeh*	- *Ikan santan kuning* (Yellow coconut fish) - *Ikan goreng balado* (Balado fried fish) - *Ikan pais* (Pais fish)	
Vegetables	- *Gulai nangko* (Jackfruit curry) - *Tumis pucuk lumai* (Saute the lumai shoots) - *Pucuk ubi* (Sweet potato tops) - *Gulai jamur gerigit* (Mushroom goulash) - *Gulai pucuk kates* (Papaya shoot curry)	- *Gulai nangko* (Jackfruit curry) - *Pucuk ubi* (Sweet potato tops) - Sambal kabau - *Tumis pucuk lumai* (Saute the lumai shoots) - *Rebung manis* (Sweet bamboo shoots)	- *Gulai nangko* (Jackfruit curry) - *Tumis pucuk lumai* (Saute the lumai shoots) - *Gulai jamur gerigit* (Mushroom goulash) - *Pucuk ubi* (Sweet potato tops) - *Rebung manis* (Sweet bamboo shoots)	-

Juada keghas is a typical snack of the Serawai tribe. *Juada keghas* is made from flour and eggs, kneading until smooth and thin and then fried. In addition, the Serawai tribe also usually makes Tat cakes for serving guests and dishes during Eid and alms. The Serawai tribe's Tat cake is traditionally cooked by burning it using wood coals, forming the preparations into thin rounds.

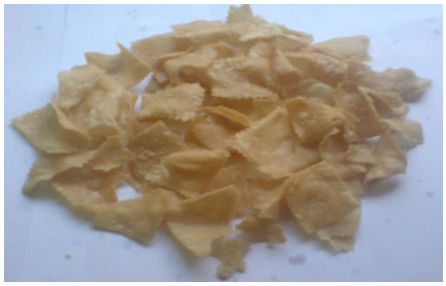

Figure 3. *Juada keghas*

Consumption and Contribution of Traditional Foods Energy, Protein, Fat, Carbohydrates

To find out the average toddler intake obtained from the recall results compared to the 2013 RDA. Toddler energy was 964.7 Kcal (457 – 1,618 Kcal) with an average % RDA of 82.8%, an average toddler protein intake of 34.2 g (11.4 – 61.5 g) with an average % RDA of 124.1%, an average toddler fat intake of 27.6 g (3.4 – 64.2 g), with an average % RDA of 65.1%, and an average toddler carbohydrate intake of 152.6 g (74.2 – 469.2 g) with an average % RDA of 94.1% (Table 4).

Estimating the adequacy of nutrients can be calculated by the ratio of nutrient intake compared to the nutritional adequacy rate at a certain age[16]. After energy intake and other nutrients were obtained, the level of nutritional adequacy was calculated. Table 4 shows that the average energy intake in toddlers from coastal families (is 82.8 ± 20.8 % RDA). In coastal families, energy intake, which was categorized as lacking, was 75 respondents from 115 toddlers.

Based on fat adequacy, 102 respondents out of 115 toddlers had less fat intake. This finding was possible because fishermen's toddlers rarely consume food with high fat, including meat, milk, and thick coconut milk. In terms of daily food processing is more often processed traditionally, including processed fish with tamarind, lemea, and others. In the processing, coastal families use liquid coconut milk and usually have to buy it, slightly different from farming families, who generally obtain coconut milk from their agriculture.

In fisherman families, 63 out of 115 toddlers experienced a lack of carbohydrate intake. Compared to toddlers in farming families, children under five were generally given traditional pastries rich in flour and tasted predominantly sweet, including *Lepat binti, Bay tat*. While toddlers in fishing families were more dominantly given extruded snack foods from stalls. The average intake of carbohydrates, fats, and proteins and their contribution to total energy intake is presented to determine the composition of macro-nutrients in the current diet of the Indonesian population. The Indonesian Minister of Health Number 41 of 2014 concerning Balanced Nutrition Guidelines recommends that fat's daily contribution not exceed 25% of total energy intake or equivalent to 47 g of protein per person per day[17]. The recommendations of the World Health Organization WHO/FAO, 2003 relate to carbohydrates and protein, namely not to consume carbohydrates more

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than 55-75% of and protein not to exceed 10-15% of total energy intake[18,10]. In this study, carbohydrate consumption was above 90% of the 2019 RDA, while protein was above 100% of the 2019 RDA, slightly different from fat, only 65% of the RDA. Fulfillment of protein adequacy was understandable because parents of toddlers are dominated by working as fishermen. When associated with the Minister of Health of the Republic of Indonesia Number 41 of 2014, the protein intake for toddlers is around 87% of toddlers have fulfilled their daily protein, and 40.86% of this protein comes from traditional foods.

Toddlerhood is a period of rapid growth and development both physically and motorically. Providing food in the right amount with a selection of quality food types can support toddlers' optimal growth and development. The introduction and provision of diverse foods to toddlers must be made early because each food ingredient contains different nutrients. The diverse diet consists of staple foods, side dishes, vegetables, and fruits. In addition, in consuming food, it is necessary to pay attention to the amount and type to suit the needs of the body[19,20].

A critical factor in achieving optimal health in children is good nutritional status. However now, there are still various nutritional deficiencies in toddlers. The direct causes of nutritional problems are broadly related to food consumption which is still insufficient compared to needs and the presence of infectious diseases. The need for nutrients for the body can be obtained through food that contains sources of macro-nutrients (carbohydrates, proteins, and fats) and micro (vitamins and minerals), which all play a role in children's growth. Children's health is influenced by the type of food consumed and the use of nutrients contained in food. Nutritional intake is significant in the early days of life, especially in the first two years[21].

The ability of the household, especially mothers, to provide both quantity and quality affects the food consumed by toddlers[22,23,24]. The diversity of food ingredients used by mothers in the family will provide a variety of dishes, so toddlers do not get bored. This will increase energy intake and other nutrients. The recall results for toddlers illustrates in Table 4, showing that the average energy intake for toddlers is 1,111 kcal per day, while traditional foods contribute 264 kcal (±19.34% RDA).

Previous research revealed that traditional foods contribute 30-40% of the average daily energy of toddlers. Traditional food contains many resources for the provision of food in the family. The contribution of traditional food has gradually decreased over this century due to protein, iron, and vitamin A[25]. Traditional food helps maintain adequate body intake of both macro and micro nutrients[26.] However, the facts show that changes in knowledge regarding traditional food are challenging to maintain, so the available local natural resources are not used optimally[27,28]. The loss of traditional food consumption will decrease the diversity of eating patterns in each tribe and a changing lifestyle, causing people to prefer to buy ready-to-eat food.

In fishing families, where it is easy to get fish as a source of protein daily, the fulfillment of protein for toddlers was obtained chiefly from traditional food. Fish consumption was higher in the diet of coastal families, providing up to 90% of animal protein per capita. Fish is a rich source of essential amino acids, long-chain polyunsaturated fatty acids, micro-nutrients such as vitamins A, B12, and D, and minerals, including calcium, phosphorus, iodine, zinc, iron, and selenium[29]. Children's protein adequacy of 40.86% RDA (12.5 g) was obtained from traditional foods. This study's results differ from research conducted by Andadari and Mahmudiono in 2017, which showed that the most protein in the community was in farming families with an adequacy level of up to 134% of the RDA[19]. At the national level, the average protein intake for toddlers (0-59 months) in urban and rural areas is 36.8 g, higher than the average RDA of protein of 25.5 grams. The average protein intake in urban areas (39.2 g) is greater than the average protein adequacy in rural areas (34.4 g). At the national and provincial levels, the average protein intake for toddlers has exceeded the RDA[17].

Fat sources are obtained from marine fish, cooking oil, and coconut milk during food processing (fried and curried). Animal side dishes (fish) because sea fish is difficult to obtain.

Table 4. Consumption and contribution of energy and macro-nutrients for traditional food for Toddlers of Coastal Families

Nutrients	Consumption of Toddlers (% RDA)		Traditional food contribution	
	n	%	intakes	% RDA
Energy			264 kcal	19.34
- Less (≤89 % RDA)	75	65,2		
- Enough (≥90% RDA)	40	34,8		
Mean±SD (% RDA)	82.8± 20.8			
Proteins				
- Less (≤89% RDA)	13	11,3	12.5 g	40.86
- Enough (≥90% RDA)	102	88.7		
Mean±SD (% RDA)	124.1 ± 40.5			
Fat				
- Less (≤89% RDA)	102	88.7	9.4 g	17.65
- Enough (≥90% RDA)	13	11.3		
Average±SD (% RDA)	65.1 ± 22.0			
Carbohydrate				
- Less (≤89% RDA)	63	54.8	33.1 g	17.65
- Enough(≥90% RDA)	52	45.2		

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Nutrients	Consumption of Toddlers (% RDA)		Traditional food contribution	
	n	%	intakes	% RDA
Mean±SD (% RDA)	94.1 ± 68.6			

Data on carbohydrate intake were obtained from the conversion of food consumed by individuals using a database of the nutritional composition of food and beverages presented by age group and province. Nationally, the average fat intake in the age group 0-59 months in urban and rural areas in Indonesia is 41.9 g. The average fat intake is higher in urban areas (46.9 g) compared to rural areas (36.7 g). The average carbohydrate intake of fishing families was 170 g. It can also be seen that the %RDA is 94.1%. The results of the Total Diet Study (SDT) show that the average intake of carbohydrates in the age group 0-59 months in urban and rural areas in Indonesia nationally is 148.0 g, with an average intake higher in urban areas (153.7 g) than in rural areas (142.1 g)[17]. The average intake of carbohydrates at the age of 0-59 months in urban and rural areas by province varies from 126.1 to 176.3 grams.

Table 5. Consumption and contribution of PUFA and MUFA fatty acids in traditional food for toddlers of coastal families

Nutrients	Toddler Consumption (% RDA)		Traditional food contribution	
	n	%	intake	% RDA
PUFA			2.2 g	16.3
- Poor (<77% RDA)	93	80.9		
- Enough (≥77 %RDA)	22	19,1		
- Average±SD (% RDA)	52.2 ± 46.2			
MUFA			1.9 g	13.8
- Poor (<77% RDA)	89	77,4		
- Enough (≥77 %RDA)	26	226		
- Average±SD (% RDA)	59.6 ± 25.2			

To find out the average intake of PUFA and MUFA for toddlers obtained from the recall results compared to the 2019 RDA. PUFA for toddlers was 6.5 mg (0 – 21.6 mg) with an average % RDA of 52.2%, and the average MUFA intake for toddlers was 6.7 mg (0.3 – 21.7 mg) with an average % RDA of 59.6%. More than 80.0% of toddlers have a shortage of PUFA and MUFA intake in toddlers of fishing families, where more than two-thirds of toddlers lack MUFA intake. The Contribution of PUFA and MUFA fatty acids for toddlers in coastal families was possible because the food source that contributes to these fatty acids is sea fish. A study conducted in India showed that the consumption of PUFA fatty acids was correlated with the frequency of consuming marine animal sources (p-value 0.0001)[10]. PUFA and MUFA are generally found in marine fish, including Beledang (layur) fish, tuna, and tuna, which fishermen's families often consume. The PUFA content of beledang, mackerel, and tuna was 50.77% each: 17.44% and 13.21%. At the same time, the highest MUFA content was found in swordfish (34.49%), tuna (25.00%), and mackerel (23.65%). PUFAs play an essential role in health at all stages of life, from pregnancy to old age[30,31].

This study's limitation was that the researcher only collected various kinds of traditional foods and their contribution to the daily adequacy of energy, macro-nutrients, PUFA, and MUFA of children under five, which were relatively rarely studied. PUFA and MUFA fatty acids were collected and analyzed to obtain primary data on toddler fatty acid intake in coastal communities living daily by marine products as a source of PUFA and MUFA. This study did not analyze the relationship between the contribution of traditional food and the nutritional status of children under five.

CONCLUSIONS

The traditional foods in the three tribes were categorized into three groups: traditional snacks, side dishes, and vegetables. Most side dishes were obtained from the beach/sea and processed using coconut milk. Traditional food contributes to the daily intake of children under five in coastal families, mainly protein, followed by fat and carbohydrates, while traditional food contributes to PUFA and MUFA, ranging from 13-16%. It is necessary to increase the consumption of traditional food in fish-based coastal families by increasing the creativity of mothers to vary the processing of resources, especially fish so that the distinctive taste image of traditional food for each ethnicity can be maintained. Ideally, fish offers excellent potential as a food-based strategy to improve the quality of the diet of young children.

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