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## **Food Pattern for Overweight Children under the Age of Five years in Toili III Health Care Centre, Banggai Regency, Indonesia**

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### **Abstract**

Nutrition is a term used to being overweight. Based on anthropometric indices W / A, that toddler nutrition if the index Z-score > 2.0 SD. Overweight toddler in Toili III Health Care Centre at 2.67%. This study aims to identify the diet toddler nutrition in Toili III Health Care Centre. This type of research conducted is a descriptive survey. The sample is taken by total population of 28 overweight children. Computerized data processing performed by the program Excel 2007, SPSS 17.0 for Windows and Nutri survey Version Indonesia. Analysis of the data used in univariate. The results of this study indicate that the toddler who consume diverse types of food are not as many as 28 children (100%). Toddlers with eating frequency thrice / day were 22 children (78.57%), and > thrice / day for 6 children (21:42%). Toddlers with energy consuming larger quantities of needs according to age as many as 1 toddler (3:57%) and less than the requirement under the age of 27 children (96.43%). Toddlers who consume carbohydrates in greater numbers as many as four children (14:29%), Good as 6 children (21:43%) and less as many as 18 children (64.28%). Toddlers who consume greater amounts of protein as many as 1 toddler (3:57%), Good as many as 13 children (46.43%) and less as many as 14 children (50%).

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Toddlers who consume greater amounts of fat that as many as 15 children (53.57%), Good as much as 2 toddlers (7:14%) and less as many as 11 children (39.29%). This study suggested the need for parental attention to the provision of a balanced food intake for toddlers.

**Keywords:** Food Pattern; Overweight Toddler

## **1. Introduction**

One of child health problems characteristic in developing countries, including Indonesia, is double burden nutritional status, while the malnutrition problem is not resolved, over nutrition problems began to emerge in certain segments of society in big cities [1]. The term overweight is often used to describe overweight and obesity. Obesity is now starting to hit the toddler age group and school children. Obesity in children will decrease activity and creativity of children, children become lazy, reduces the level of intelligence of children. Obesity can be a trigger for many degenerative diseases if not be prevented in the future for the children. Obesity adversely affect child development, especially the development of psychosocial aspects such as low self-esteem, depression and withdrew from the environment. Moreover, obesity in children at high risk of becoming obese adults and potential future experience various causes of morbidity and mortality [2,3].

According to WHO, in 2010 the number of overweight children under the age of five years, estimated at more than 42 million, 35 million of whom live in developing countries. Prevalence of overweight and obesity is increasing rapidly, especially among children and adolescents in most countries in the world [3]. Health Basic research 2010 showed that 5.8% or 1,010,079 children who have more nutrition than 17,432,408 infants who weighed [4]. From the results of Nutritional Status Monitoring (PSG) by Central Sulawesi Provincial Health Office said that during the year 2010 from 130 228 infants who weighed shown that the prevalence of underweight children in excess of 0.62% or 811 infants [5]. Based on the Central Sulawesi Provincial Health Profile 2010 states that in Banggai are 219 children or 1.74%, which is more than 12. 551 malnourished children were weighed. From the results of monitoring of infant growth (growth trajectory) Banggai During the year 2012 by measuring height and weight simultaneously in children under five in March and September were conducted at 381 neighborhood health center, of 10,924 infants were weighed, 87.01% under five suffering good nutrition, infant malnutrition 9.81%, 1.40% under five suffer from malnutrition, and 1.78% more underweight children. Prevalence more nutrition in the work area Toili III health centers has increased in 2013 as many as 28 children [6,7,8]. Based on the problems above, the authors are interested in conducting research on "Eating Toddler Over nutrition in Toili III Health care Centre District of West Toili Banggai 2014".

## **2. Materials and Methods**

### **2.1 Location and Study Design**

This study has been conducted in Toili III, Banggai Regency. Observational Survey was used as the design of this study.

## 2.2 Population and Sample Research

Population of this study was the children with over nutrition status. Sample of this study was about 28 children.

## 2.3 Data Collection

Data taken by the research / interviews directly on the respondent. The data include: the type of food, meal frequency, obtained by using a questionnaire, in which respondents answered questions are available on the questionnaire. Data on the consumption of energy, carbohydrate, protein and fat are taken in the form of 2 x 24 hour recall and food models. Secondary data, geographic, demographic, and the resources obtained from the local government.

## 2.4 Data Analysis

After data collection, the next step was data analysis. Univariate was performed. The results of the research that has been processed and analyzed will be presented in the form of a frequency distribution table accompanied by an explanation.

## 3. Results

The study was conducted for two months, observation and nutritional assessment has been done.

**Table 1:** Distribution of children with over nutrition by type of food

Type of Food	Frequency [n (%)]
Variegated <sup>a</sup>	0 (0)
Unvariegated <sup>b</sup>	28 (100)

<sup>a</sup>) *Variegated are food with containing carbohydrate, proteins, fat, vitamins and minerals*

<sup>b</sup>) *Unvariated are food without containing carbohydrate, proteins, fat, vitamins and minerals, or just containing one or two of nutrition*

**Table 2:** Distribution of children with over nutrition by frequency of meals

Frequency of meals	Frequency [n (%)]
Twice a day <sup>*</sup>	22 (78,57)
Less or more than twice a day <sup>**</sup>	6 (21,42)

<sup>\*</sup>) Frequency of meals are good if children have meals twice a day in breakfast, lunch and dinner

<sup>\*\*</sup>) Frequency of meals are not good if children not have meals less or more twice a day

**Table 3:** Nutrition intake of children with over nutrition

Nutrition	Frequency [ <i>n (%)</i> ]
<b>Energy</b>	
>1600kkal	0
1600 kkal	0
<1600 kkal	28 (100)
<b>Carbohydrate</b>	
> 65 % total energy	9 (31,4)
50-65 % total energy	6 (21,43)
< 50 % total energy (WNPG, 2004)	13 (46,43)
<b>Protein</b>	
> 20 % total energy	1(3,57)
10-20 % total energy	23 (82,14)
< 10 % total energy (WNPG, 2004)	4 (14,29)
<b>Fat</b>	
> 30 % total energy	1 (3,57)
20-30 % total energy	2 ( 7,14)
< 20 % total energy (WNPG, 2004)	25(89,28)

#### **4. Discussion**

##### **4.1 Type of Food**

The type of food consumed in Toili III Health Care Centre can be seen in Table 1 that all children under five is 28 (100%) consume only staple food, animal side dish, vegetable side dishes and vegetables. There is a toddler who consumed fruit [9]. Vegetables and fruits contain a variety of vitamins and minerals that contribute to metabolism of organs [10]. Diversity of food in a dish a day consumed, the minimum should be from one food source of energy, a type of food source builder substance and one food source regulators. It is the application of

the principle of minimal diversity. The ideal is if every lunch and dinner, the dish consists of 4 groups of food (the staple food, side dishes, vegetables and fruit) [11]. In Toili III Health Care Centre mostly toddlers consume food sources of energy substances and builder substances. Meaning they avoid food sources of regulators. Therefore, to apply the principle of a variety of foods, they must consume more food sources regulating substances that vegetables and fruits. The reason they do not consume the fruit because their child does not like fruit and there are also some of the parents do not have cost to buy the fruit. Low income causes low purchasing power anyway, so it is not able to buy food in the quantities required, the situation is very dangerous to the health of families and ultimately can adversely impact the nutritional status of the state, especially for toddlers.

Frequency of meal; The frequency of eating is the act of taking a number of foods during certain periods, such as weekly, monthly or yearly [11]. In Toili III Health Care Centre mostly toddlers with eating frequency 3 times / day can be seen in Table 2 that the toddler feeding frequency twice / day were 22 children (78.57%), and >3 times / day for 6 children (21,42% ). Most children aged 3-5 years eat more than twice meals a day. Frequency of eating seems to be associated with nutrient intake, except when children consume less than four times or more than six times a day. Energy intake, calcium, protein, vitamin C, iron and toddlers who eat less than four times a day, less than the average intake of other children the same age who eat four times a day or more [12,13,14,15]

#### **4.2 Food Consumption**

From the results of this study illustrate the level of energy consumption in Toili III Health Care Centre in children under five years of age according to the needs in the amount of 100%. Overall average energy consumption toddler in Toili III Health care Centre of 563.3 kcal, 80.3 grams of carbohydrates, protein consumption amounted to 19.2 grams and 17.9 grams of fat consumption. As for energy consumption based on the average consumption of nutrients to the source of energy sources is 58% total energy from carbohydrates, 14% from protein and 28% from fat. The type of food sources of nutrients consumed much more underweight children in Puskesmas Toili III is a source of carbohydrates such as rice, rice porridge, porridge carrots, mashed potatoes, fried noodles, cakes gemblong, dawet, lopus cake. Food sources of protein such as fish, eggs, tempeh, tofu, and chicken. Sourced foods such as egg yolk fat. Processed foods themselves are given to infants in Toili III Health Care Centre quite varied include rice porridge, gado-gado, meatballs, white rice side dish given as fish, eggs, chicken, tempeh and tofu, but it also added to vegetables (kale, spinach, corn, beans, carrots, potatoes, beans). Toddlers do not consume enough fruit. In addition, some mothers also give yourself processed foods such as cakes semprong, gemblong cake, cake apem, dawet, popcorn, cookies lopus, martabak sweet and donuts. In addition, there are other factors that may be causing more nutrition in Toili III Health Care Centre is heredity. Congenital factors of overweight parents will be revealed to her. A 40% chance the child will be obese if they have a mother or father who suffer from obesity and opportunities for obesity will increase to 70% if both parents are equally obese [16,17,18]. Toddlers who consume energy, carbohydrate, protein and fat in this study is not more than the recommended sufficiency. It is still much less energy needs. Thus, over nutrients in the District of West Toili not in the causes for excessive food consumption levels. However, if seen again that there are some children have a birth weight more than normal which is 12 children. Birth-weight is > 4000 grams. Birth weight has a relationship with the occurrence of overweight in children under five. Nutritional

status will continue to be overweight in the absence of parental supervision of children who consume foods containing nutrients balanced[18]. The food has balanced diet is very important in the process of growth and development and intelligence. Along with a good diet and regular to be introduced as early as possible in children, can help meet the need for healthy eating in children, such as the variety of food and the introduction of the hours eating right. A good diet should be coupled with a balanced nutritional patterns, ie the fulfillment of nutrients that have been adapted to the needs of the body and obtained through the daily diet. By eating a nutritious and balanced diet on a regular basis, is expected to be optimal child growth. Nutrition is very important and useful to maintain health and prevent disease [19,20,21].

## **5. Conclusion**

Based on the results of this study concluded that the toddler who consume variegated types of food are not as many as 28 children (100%). Toddler feeding frequency 3kali / day were 22 children (78.57%), and > 3 times / day for 6 children (21:42%). Consumption of food toddlers fall into the category of less than the recommended dietary allowance figures for toddlers. However, if seen again that there are some children have a birth weight more than normal which is 12 children. Birth-weight is > 4000 grams. Birth weight has a relationship with the occurrence of overweight in children under five. Are suggested to conduct further research related to the causes of over nutrition in children under five in Toili III Health Care Centre

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