FAMILY CHARACTERISTIC RELATIONS WITH NUTRITION STATUS OF TODDLERS AT DEWANTARA ACEH HEALTH CENTER

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ABSTRACT

Dewantara Health Centre was the biggest public health centre in North Aceh District and malnutrition was still found in this district. This study aimed to find out family characteristics, and the nutritional status of toddlers (Weight/Age) at Dewantara Health Centre North Aceh District 2017.It applied quantitative observational research with cross sectional method. The population were all the infants who visited the centre during the study in Dewantara Health Centre North Aceh District. The samples were chosen by cluster sampling, to get representative samples and the samples were taken from each village. The data were collected by questionnaire and analysed by Chi Square Test.The result of the study found that there was no relation between the toddlers' nutrition status and the variables; the age toddlers and the mothers' education. Whereas the variables that related to the toddlers' nutrition status were the mothers' knowledge, the mothers' work and the family income. The Chi Square Test found that the mothers' knowledge (p=0,000), the mothers' work (p=0,000) and family income (p=0,000).It was suggested to the mother's toddlers to increase their income by utilizing the existing jobs so they could increase the purchasing power of nutrition food to improve the nutrition status of toddlers in Dewantara Health Centre North Aceh.

Keywords : Family Characteristics, Toddlers, Nutritional Status

1. Intoduction

Nutrition status was the condition of the body as the result of consuming food and the utilizing nutrients that differentiated into malnutrition, less nutrition, good nutrition and over nutrition. Malnutrition was measured based on toddlers growing in poverty that was an important indicator to monitoring health and nutrition status in community.[2]

In 2013, about 17% of toddlers or about 98 million toddlers below 5 years old in developing countries had less nutrition (low weight based according to the age based on the standard of WHO). The highest prevalence was in the area of South Asia about 30 %.[25]

Public health was considered serous if the prevalence of malnutrion to less nutrition was between 20,0-29,0%, and it was considered the highest prevalence if it was about ≥ 30%. Among 33 provinces in Indonesia, 18 provinces had prevalence nutrition (in the level malnutrion to less nutrition) above the nutritional prevalence rate about 21,2% to 33,1%. The Province of Aceh was in the seventh position of others province in Indonesia that had prevalence of malnutrion to less nutrition about 26, 3%.[7]

It was reported toddlers cases with malnutrition in North Aceh District that received treatments about 104 toddlers; 59 males and 45 females.[1] North Aceh District was one of districts in the province of Aceh that had some sub districts, one of them was Dewantara. From the the data of health department of North Aceh district in 2016, it was founded that the numbers of toddlers with malnutrition in 2015 about 104 toddlers. And from all of the data, the numbers of toddlers in 2016 were about 65.298 toddlers, and Dewantara had total 1.648 toddlers. However only 35% of them or about 577 toddlers who came to Dewantara Health Centre to weigh their weight in Januari 2017. According to data of Statistik Potensi Desa Kecamatan Dewantara in 2012, malnutrion cases were founded in the last 3 years about 9 years.[12]

Mostly residents of Dewantara sub district were farmer/fisherman (60%), salespersons (12%), labours (10%), and so on. This area was a low average economy because the residents had income under minimum standard salary of Aceh each month.[12] With the income of the household head enough or less in fulfilling daily life requires the mother to work to increase family income. Working mothers, will affect the pattern of feeding to toddlers. Because of the family characteristics that one of them family income and mother's work this will have a relationship with the nutritional status of toddlers, which is usually found less nutritional status of children less that will impact easily the toddler is attacked by disease.

According to prior survey, the data of Pemantauan Status Gizi Puskesmas Dewantara in December 2016 found about 32 toddlers had less nutrition status. And the numbers of less nutrition status increased becoming 31 toddlers in January 2017. And they are mostly the residents of Bangka Jaya that the toddlers' parents were mostly farmers and the residents of Uteun Geulinggang worked in public services.[14]

Based on the data the writer was interesting to conduct a study about the relation of family characteristics and the nutrition status of the toddlers in Dewantara Health Centre North Aceh 2017.

2. Theoritical Framework

Nutritional status

Nutrition is a process of organisms using food consumed normally through the process of digestion, absorption, transportation, storage, metabolism, and expenditure used to maintain the life, growth, and normal functioning of organs, and produce energy.[28] Nutritional status is a condition caused by the status of balance between the amount of intake (intake) of nutrients and the amount needed (requirement) by the body for various biological functions (physical growth, development, activity, health care, etc.). If there is an imbalance between the amount of intake and needed needed for biological functions, there will be a decrease / increase in nutritional status.[8]

According to Poppy (2003) toddler age is the beginning of growth and development that requires nutrients, for it is necessary to prepare food that is sufficient for nutritional needs. The role of parents in helping the process of growth and development of children is to establish personal hygiene and healthy environmental sanitation, this concerns the state of clean, neat and orderly.[5]

According to Almatsier (2013) nutritional status is a condition of the body as a result of food consumption and the use of nutrients and nutritional disorders occur both in malnutrition status and over nutritional status. Unbalanced nutritional status of children under five causes a child's growth to be disrupted, for example the child is underweight, wasted, short (stunted) or overweight.[3]

3. Method of the Study

a. Study Design

This study was a quantitative observational research with cross sectional method.

b. Population and Sample

The populations were all the toddlers who came to weigh in Dewantara Health centre North Aceh during January 2017 about 577 toddlers and the samples of the study were 82 toddlers. The sampling used cluster.

c. Data Analysis

After the data collected then it processed through editing, coding and data entry. The stages of data analysis that univariate analysis that conducted to determined the distribution, the frequency of each variable studied both the dependent and independent variables. Bivariate Analysis did to look at the relationship between independent and dependent variables used Chi-Square (x^2) with a confidence level of 95%.

4. Result and Analysis

4.1. The Result of Univariate Analysis

a. The Description of Family Characteristics

Family characteristics especially mothers related to the toddlers' growth and development. Mothers' characteristics also determined the nutrition status of toddlers.[25] Distribution frequency of family characteristics, could be seen in the following table:

Table 1. Distribution Frequency of family characteristics in Dewantara Health Centre North Aceh

Family Characteristics	n=82	%
Age of Mother Toddler		
<20 years old	16	19.5
20-29 years old	39	47.6
30-40 years old	27	32.9
Total	**82**	**100,0**
Education of Mother Toddler		
Low	43	51,4
High	39	47,6
Total	**82**	**100,0**

Knowledge of Mother Toddler		
Not good	44	53,7
Good	38	46,3
Total	**82**	**100,0**
Family Characteristics	**n=82**	**%**
Mothers' Work		
Not work	51	62,2
Work	31	37,8
Total	**82**	**100,0**
Family Income		
≤Rp.2.500.000	48	58,5
>Rp.2.500.000	34	41,5
Total	**82**	**100,0**

b. Nutritional Status of the toddlers (Weight/Age)

Nutrition status was physical condition of the toddlers according to on measurement of anthropometry based on the index of Weight referring to Age (Weight/Age), Height referring to Age (Height/Age), and Weight referring to Height (Weight/Height), by using standard of WHO-Anthro. The description of nutrition status of the toddlers could be seen in the following table:

Table 2. Distribution of Frequency of Nutrition Status of the Toddlers based on the (Weight/Age) in Dewantara Health Centre North Aceh 2017

Nutrition Status of Toddlers		
	(Weight/Age)	
	N	**%**
Less	49	59,8
Good	33	40,2
Total	**82**	**100,0**

Table of distribution of frequency of nutrition status (Weight/Age) showed that mostly 49 respondents (59,8%) had less nutrition status.

4.2. The Result of Bivariate Analysis

a. The Relation between Family Characteristics and the Nutrition Status of the Toddlers based on the Weight/Age

The result of bivariate analysis would show interconnected or not interconnected between family characteristics such as the age of the mother toddler, knowledge of mother toddler, mothers' work and family income and the nutrition status of the toddlers (Weight/Age),as seen in the following table :

Table 3. Cross Tabulation Relation between Family Characteristics and the Nutrition Status of the Toddlers Based on The (Weight/Age)in Dewantara Health Centre North Aceh, 2017

Family Characteristics	Nutrition Status of Toddlers (Weight/Age)		Total	pPR value(95%CI)	
	Less	**Good**			
	n (%)	**n (%)**	**N**		
Age of the Mothers					
30-40 yo	15 (55,6%)	12 (44,4%)	27 (32,9%)	0.364	
20-29 yo	22 (56,4%)	17 (43,6%)	39 (47,6%)		
<20 yo	12 (75,0%)	4 (25,0%)	16 (19,5%)		
Education of the Mothers					
Low	23 (53,5%)	20 (46,5%)	43 (52,4%)	0.254	
High	15 (38,5%)	24 (61,5%)	39 (47,6%)		
Knowledge of the Mothers					
Not Good	35 (79,5%)	9 (20,5%)	44 (53,7%)	0.000	1,940 (0.851-13.074)
Good	14 (36,8%)	24 (63,2%)	38 (46,3%)		
Mothers' Work					
Not Work	40 (78,9%)	11 (21,6%)	51(62,2%)	0,000	2,813 (1.237-23.844)
Work	9 (29,0%)	22 (71,0%)	31 (37,8%)		
Family Income					
<Rp.2.500.000	38 (79,2%)	10 (20,8%)	48 (58,5%)	0,000	2,399 (2.174-42.322)
>Rp.2.500.000	11 (32,4%)	23 (67,6%)	34 (41,5%)		

4.3. Discussion

a. Frequency of Nutrition Status of the Toddlers

Result of research got that from Dewantara Health Center most of toddler have good nutrition status 33 toddler (40,2%) and got 49 toddler (59,8%) with less nutrition status. This is not in line with the description of nutritional status in the research of [16] in the working area of PuskesmasSewon I Bantul Jogjakarta, from a total of 97 toddler with good nutrition status of 58 toddler (59,7%) and toddler with less nutritional status as many as 39 toddler (40,2%).

b. The Relation between Family Characteristics and the Nutrition Status of the Toddlers

The results of research on the relationship of family characteristics with nutritional status include age of mothers, knowledge of mothers, education of mothers, mother' work and family income. According [14], states that the function of families in addressing nutritional problems is very important, because it can affect the ability of families to improve health for the nutritional status of children. Especially toddlers who are susceptible to nutritional problems.

Based on the findings, they showed that family characteristics which related to nutrition status of the toddlers were the knowledge of the mother toddler, mothers' work and family income with the value of p<0,25.

c. The Relation between Age of Mothers Toddler and Nutrition Status of the Toddlers

Women's reproductive period divides into 3 periods, they were young reproductive period (15 to 19 years old), healthy reproductive period (20 to 35 years old) and old reproductive period (36 to 45 years old). Based on UNICEF opinion (2002) in[5]. The result of statistics test was founded value of p = 0,364 and α value = 0,05. So p value > α value, so that there was no relation between mothers' age and the nutrition status of the toddlers (Weight/Age).The findings showed that there was no relation between age of the mother toddler and the nutrition status of the toddlers. It was in line with[5] he stated that there was no relation between age of mother toddler and nutrition status of the toddlers. Age was one of factors that influenced social participation. Young mothers were easier to receive instruction whereas old mothers were more experience in caring their toddlers.

In accordance with[20] opinion that maternal age has no relationship with the growth of children because young mothers (15-34 years) are able to have children with normal growth if the mother has a high level of education because by having a high level of education it will the more easily one absorbs and understands when it comes to information about child growth problems.

d. The Relation between Education of Mothers Toddler and Nutrition Status of the Toddlers

The level of education also determined easy or not easy someone to absorb and to perceive knowledge of nutrition. It could be a base to differentiate the right method of nutrition counselling. The result of statistics test was founded p value = 0,416 and α value = 0,05. So p value > α value, so that there was no relation between education of mother toddler and the nutrition status of the toddlers (Weight/Age).Based on the result of the study, it found that there was no relation between education of mother toddler and nutrition status of the toddlers. The findings of the study is in accordance with [24]he said that there was no relation between level of education of mother toddler and the nutrition status of toddlers.

It supports research conducted by[8]who shows that there is no relationship between parental education levels and status nutrition of toddlers in the countryside. The results of this study contradict the results of research by [10] and [9] indicating that there is a significant relationship of maternal education with nutritional status of children. Higher education provides an overview of the family's economic status and the family's ability to better manage family resources, compared with low-education families.

e. The Relation between Knowledge of the Mother Toddler andNutrition Status of the Toddlers

The level of nutrition knowledge a big person influence for the change of attitude and behavior in the selection of foodstuffs which further affects the nutritional status of the individual concerned. Based on the results indicate that from 44 mother who is not knowledgeable is not good there are 35 people (79,5%) toddler who have less nutrition status and 9 people (20,5%) having good nutrition status. Whereas from 38 mother of toddler who have good knowledge there are 14 people (36,8%) toddler who have less nutrition status and 24 people (63,2%) having good nutritional status. The result of statistics test was founded p value = 0,000 (<0.001) and α value = 0.05, with PR = 1.940 (95% CI; 0.851-13.074). So p value < α value, meaning that there is a relationship between knowledge of mother toddler with nutritional status of toddler (Weight/Age).Where a toddler who has a mother who is knowledgeable nutrition is not good have a chance of occurring 1 times greater experience of less nutritional status compared with toddlers who have mothers who are knowledgeable of good nutrition.

Based on the result of the study [19] the correlation between the level of knowledge with the nutritional status of children. Good knowledge will affect the pattern of food consumption so that will occur a good nutritional status. Knowledge can be gained from both formal and informal education.It was in line with [13], malnutrition in infants can be attributed to a mother's attitude or behavior that is a factor in the wrong food selection. Selection of foodstuffs, the availability of adequate amounts of food and the diversity of these foods is influenced by the level of knowledge of mothers about food and nutrition. Maternal ignorance can lead to food selection errors especially for toddlers.

f. The Relation of the Mother' Work and Nutrition Status of the Toddlers

The result of the research, it is found that there are correlation between mother' work with nutrition status of toddler, it shows that from 51 unworked mother that there are 40 people (78,9%) toddler who have less nutritional status and 11 people (21,6%) who experienced good nutritional status. Whereas from 31 mother working mother there are 9 people (29,0%) toddler who have less nutritional status and 22 people (71,0%) having good nutritional status.The result of statistics was

founded p *value* = 0,000 (<0,001) and α *value* = 0,05, with PR = 2,813 (95% CI; 1.237-23.844). So p *value*< α *value*, it meant that the relation between work of mothers toddler and nutrition status of the toddlers (Weight/Age). Where toddlers who have mothers who do not work have a chance of going 2 times greater experiencing less nutritional status compared with toddlers who have working mothers.

Based on the result, it was founded that there was relation between the mothers' work and nutrition status the toddlers. The findings found that mostly the mothers' toddlers worked, however nutrition status of the toddlers was categorized as good/normal nutrition. This was caused by family income as supported factor that made working mothers having good nutrition status of their toddlers. Working mothers could increase family income so it influenced purchasing power of the family to fulfill the needs of family members and their children's nutrition needs. The more increasing of employment, the more encourage women worked especially in the private sector. At one side it had positive impact such as increasing of the income, however at another side it had negative side against the couching and caring the toddlers especially in keeping the nutritional intake of toddlers.[5]

The findings of the study is in accordance with the theory [22], which states that a good job will certainly provide income or income is also good, so that it can meet the need for food and health, if viewed from the job and in support with the number of family members are likely to meet the large demand for food will not be achieved so that the nutritional status of children will also not be good. Then suggests that although working mothers are out of the house during work, but if they have enough knowledge, the mother can manage time in caring for her child.

g. The Relation between Family Income and Nutrition Status of the Toddlers

Family income greatly affected against the food consumed daily. If the family income was low, food consumed would not considerate the nutrition value, but the family considered more material value than nutrition value. But it did not rule out the possibility that low income family could consume good nutrition food. Based on the result of this research which is assessed from the relation of family income with nutritional status according to indicator (Weight/Age)indicate that from 48 mother of toddlers which have family income equal to ≤Rp.2.500.000 there are 38 people (79,2%) less and 10 people (20.8%) who experienced good nutritional status. Whereas from 34 mothers of toddlers who have family income of> Rp.2.500.000 there are 11 people (32,4%) toddlers who have less nutritional status and 23 people (67,6%) having good nutritional status.The result of statistics test was founded p *value* = 0,000 (<0,001) and α *value* = 0,05, with PR = 2,399 (95% CI; 2.174-42.322). So p *value*< α *value*, it meant there was a relation between family income and nutrition status of the toddlers (Weight/Age). Where the toddlers who have parents earn <Rp.2.500.000 have a chance of going 2 times greater experiencing less nutritional status compared with toddlers who have parents income> Rp.2.500.000. This study showed that there was a relation between family income and nutrition status of the toddlers. It was in line to a reference, it said that poverty as the cause of less nutrition was in the first position generally.[8]

The cause of under-nutrition in infants can be affected by several causal factors, such as the direct cause, the cause is not directly, the root of the problem and the subject matter. Direct cause factors are food and infectious diseases that may be suffered by the child.[23] Indirect causes include family food security, childcare patterns, health services and environmental health. Poor nutritional status reflects an imbalance in the intake food and/or infectious diseases. It is influenced by factors environmental and socio-economic, such as household economic status, education of mother, household hygiene, and access to health services.[15]

The results support research which indicates that the main factors that affect the nutritional status of toddlers is the family economy.Prevalence of malnutrition in children can be due to environ-mental and economic status of the family.[3] Reyes identifying poor socio-economic conditions such as low salary encouraging malnutrition in children. Father works but owns low income or have unstable jobs tend to be less can provide for the nutrition of their children.[4]

In general, if family income increases then the nutritional adequacy of the family will increase. However, high income does not guarantee to get enough nutrition, so the ability to buy food does not guarantee to be able to choose good food. The above results are in accordance with research by [18] said high income if not balanced with sufficient knowledge can cause a person to be consumptive because the selection of food is not based on nutritional aspects but from the aspect of appetite. This makes most people who are high-income and

have solid activities that make them not have time to prepare their own food so they often buy food that is easy to eat just so that the child's nutritional status is not considered.

5. Conclusion and Recommendations

Conclusion in this research there was a significance relationship between knowledge of mother's toddlers, mothers' work, family income and nutrition status (Weight/Age), of the toddler who visiting Dewantara Health Centre North Aceh. For the mother's toddlers It is necessary to improve family income by utilizing available employment, so the mothers can improve purchasing power of nutrition food to increasing nutrition status of the toddlers and to improve the knowledge of mothers' toddler through counselling and training about knowledge of nutrition to the community at the events such as PKK, Posyandu in Dewantara Sub district of North Aceh.

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