

## THE RELATIONSHIP BETWEEN NUTRITION KNOWLEDGE AND MOTHERS' BEHAVIOUR IN PROCESSING FOOD AT BANGGAI ISLAND, CENTRAL SULAWESI

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### ABSTRACT

The skills of mothers in processing healthy food determines the quality of children's nutritional intake. In addition, nutritional knowledge is sufficient to play a role in producing maternal skills in processing food. This study aims to analyze the relationship between the level of mother's knowledge and skills in processing healthy food in Banggai Islands, Central Sulawesi. This type of this research is cross sectional. The level of mother's knowledge and skills in processing healthy food is obtained from the questionnaires distributed. The relationship between the two variables was seen based on the correlation test. The results showed that 76.6% had a level of knowledge that was still lacking in nutrition, where 14.9% had a enough level of nutrition knowledge and the other 8.5% have a good level of knowledge, and besides, mothers with healthy food processing skills have quite a lot of quantity with 63.8% of them who always use fresh ingredients in processing food. The results of this study indicate that there is no correlation between the level of maternal knowledge and maternal skills in processing healthy food on Banggai Island, Central Sulawesi ( $p > 0,05$ )

**Keywords:** *mothers' nutrition knowledge, behaviour, processing food*

### ABSTRAK

Keterampilan ibu dalam mengolah makanan yang sehat mendeterminasi kualitas asupan gizi anak. Disamping itu, pengetahuan gizi yang baik berperan dalam menghasilkan keterampilan ibu dalam mengolah makanan. Penelitian ini bertujuan untuk menganalisis hubungan antara tingkat pengetahuan ibu dan keterampilan dalam mengolah makanan yang sehat di kepulauan Banggai, Sulawesi tengah. Jenis penelitian ini yaitu *cross sectional*. Tingkat pengetahuan ibu dan keterampilan mengolah makanan sehat diperoleh dari kuisioner yang dibagikan. Hubungan antara kedua variable dilihat berdasarkan uji korelasi. Hasil penelitian menunjukkan bahwa sebanyak 76.6% memiliki tingkat pengetahuan gizi kurang, dimana 14,9% memiliki tingkat pengetahuan gizi yang cukup dan 8,5% lainnya memiliki tingkat pengetahuan gizi yang baik. Ibu dengan keterampilan mengolah makanan yang sehat memiliki kuantitas yang cukup banyak yaitu 63,8%, diantaranya yang selalu menggunakan bahan segar dalam mengolah makanan. Hasil penelitian ini menunjukkan bahwa tidak ada hubungan antara tingkat pengetahuan gizi ibu dengan keterampilan ibu dalam mengolah makanan yang sehat di pulau Banggai, Sulawesi Tengah ( $p > 0,05$ )

**Kata kunci:** *pengetahuan gizi ibu, perilaku, pengolahan makanan*

## 1. Introduction

Nutritional problems in developing countries such as Indonesia in general are still dominated by the problem of Protein Energy Deficiency (PEM), the problem of iron anemia, Goiter Due to Iodine Disorders, and the problem of lack of Vitamin A (KVA). Research by Pelletier et al shows that in 53 developing countries, 56% of child deaths are related to the effects of malnutrition that have the potential for infectious diseases. Stunting prevalence, wasting and underweight are still high in countries with low per capita income. The prevalence of malnutrition in pre-school aged children in Africa reaches 14-36.5%, in Asia 28.9 - 43.6% and in Latin America 3.2 - 15.4% (Unicef, 2014). As a developing country, Indonesia has a macronutrient deficiency problem. Stunting, wasting and underweight are problems of macronutrient deficiency in Indonesia (Arisman, 2004). Age groups of children under five and children are at risk for cases of macronutrient and micronutrient deficiency in Indonesia (Department of Health of Indonesia, 2010). This has an impact on the development and growth of children, because at that age between 2 to 5 years is an age that is very crucial for brain development and children's health. During this time, children desperately needed adequate nutrition through healthy and nutritious food (Serano and Powell, 2013).

Healthy eating behaviors in childhood are very important. It helps prevent malnutrition, retardation, and acute child nutrition problems, in addition to preventing chronic, long-term health problems such as cardiovascular diseases, type 2 diabetes, cancer, obesity, and osteoporosis. Parents are mostly responsible on this subject (Nicklay and Hayles, 2008). Parents are effective on their children's eating behaviors and preferences. Especially, mothers are the role models of their children about eating behaviors. The mother's behavior in processing food for her child greatly affects the nutritional status of the child. Hence to ensure sound foundation and secure future of any society health and nutrition of their children needs adequate nutrition.

The condition of malnutrition is caused by various factors, one of which is the low level of knowledge of maternal nutrition and resulting in insufficient nutritional availability of children. Nutrition knowledge is knowledge related to food and nutrients. The attitude and behavior of mothers in choosing foods to be consumed by toddlers is influenced by various factors, including the level of one's knowledge about nutrition so that it can affect a person's nutritional status. (Notoadmojo, 2005). Mother's knowledge is also thought to affect the process of processing and serving food in children. Poor processing and serving of food is one factor in the gap between the nutritional needs of children with optimal nutritional status.

According to our previous study about mother's nutrition knowledge in Gangga Island which is a remote area in North Sulawesi dominated by less of nutrition knowledge of mothers caused by lack of information and nutrition education. This condition affects their children's nutrition status directly (Laurensi and Aldian, 2018). Banggai Regency in Central Sulawesi Province is known to be one of the regions in the list of 100 priority districts / cities that must be intervened to overcome stunting-growing children in 2018. Nevertheless stunting cases were found throughout Central Sulawesi (Litha, 2018). Banggai Island is one of the islands in the Banggai Laut Regency, Central Sulawesi province, Indonesia. The island is located to the south of the island of Paleng to the north of Pulat Salue

Besar and to the northeast of the island of Labobo. Based on preliminary observations, on Banggai Island there are still some children who are stunting as a result of malnutrition. The malnutrition is thought to be caused by a low maternal knowledge about nutrition which results in the mother's poor behavior in processing healthy food for children. Based on this, the researcher is interested in analyzing the relationship between maternal knowledge about nutrition and maternal behavior in processing food on the island of Banggai, Central Sulawesi. This study was conducted to assess the mothers' nutrition knowledge and the relationship with their behaviour to processing food on Banggai Island which is a remote area in Central Sulawesi.

## 2. Research Design

The target population for this study was the mothers who have children. This is a cross sectional descriptive study design. This research was carried out using 47 mothers in Banggai island with specific criteria as below.

### ***Inclusive Criteria***

Some individuals in Banggai island that were mothers at the time of the research who were willing to let go a piece of their time to take part of the research and could answer questions freely without being ashamed.

### ***Exclusive Criteria***

Some mothers who were not present and those mothers who refused to be part of the exercise.

## 3. Result and Discussion

### ***Distribution of Demography Data***

The study recruited 47 mothers, majority 57.4% of whom were of age between <30 years, 42.6% were aged above 30 years. Base on their education level, majority of 38.3 % were high school, and only 8.5% had completed their graduation in university. There were 57.4% of these mothers had less than 2 children and 42.6% of mothers had more than 2 children as shown in Tabel 1.

Table 1. Distribution of demography data

<b>Age</b>	Frequency(n)	Percent (%)
≥30 years	20	42,6
< 30 years	27	57,4
<b>Total</b>	<b>47</b>	<b>100</b>
<b>Education</b>	Frequency(n)	Percent (%)
Primary school or below	10	21.3
Middle school	15	31.9
High school	18	38.3
College education or more	4	8.5
<b>Total</b>	<b>47</b>	<b>100</b>
<b>Number of children</b>	Frequency(n)	Percent (%)

≤ 2 children	27	57.4
> 2 children	20	42.6
Total	47	100

### 3.2 Identification of Mother's nutrition knowledge

Table 2. Mother's knowledge level about nutrition

Level of knowledge	Frequency(n)	Percent (%)
Limited	36	76.6
Average	7	14.9
Good	4	8.5
Total	47	100

Based on the table 2, there were 76.6 % of mothers had limited knowledge about nutrition while 8.5% of mothers had great nutrition knowledge. As definition of knowledge is helps people explain important aspects of the world and gives predictability to events, thus meeting the human need for cognitive consistency or predictability (Epstein, 1994). Nutrition knowledge is defined as knowledge of nutrients. This knowledge is applicable when a consumer learns how to benefit from the knowledge of nutrients. This study was report that Most of mothers in Banggai island have bad nutrition knowledge caused by lack of interest about nutrition. It may have an impact on the health of their child in the future. The difference percentage of level of mothers' nutrition knowledge were seen clearly as shown in figure 1.

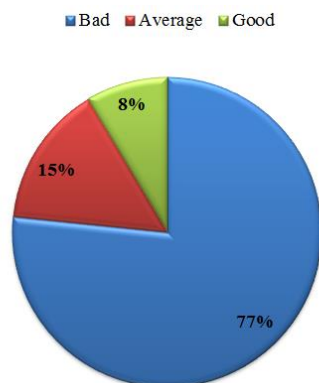


Figure 1. Distribution of mothers based on their knowledge about nutrition

Some factors such as working status, income, age, educational level and nutritional knowledge level of the mother are effective on feeding their children (Ozdogan et al, 2012; Ucar et al 2012). It is assumed that the mothers who have true nutritional knowledge prefer right foods for themselves and for their children. Sunwoong et al (2000) stated that there is a correlation between nutritional knowledge of the mothers and their nutrition status, nutritional habits and nutritional knowledge of their children (Sunwoong *et al*, 2000). In other different study, it is found that nutritional attitude and knowledge scores in mothers are positively related with diet scores of their children (Vereecken and Maes, 2010). A

study by the USDA's Economic Research Service shows that the more mothers know about food and nutrition the better the quality of their children's diets, especially younger children's diets (US Department of Agriculture Economic Research Service, 2000) Mothers who have limited knowledge about nutrition, will have no impact on nutritional behavior. Parental literacy i.e mothers' education level had an impact on child's malnutrition reported by Worley. Various studies have reported that the education of women plays a central role in improving the health of children (Damodar et al, 2013; Abbi et al, 1988). Nutrition knowledge was significantly associated with 'healthy eating' and processing food. Food processing is the set of methods and techniques used to transform raw ingredients into food or to transform food into other forms for consumption by humans or animals either at home or by the food processing industry. Food processing typically takes clean, harvested crops or butchered animal. Benefits of food processing include toxin removal, preservation, easing marketing and distribution tasks, and increasing food consistency.

### **Behaviour of Mothers**

Table 3. Relationship between behaviour of processing food with knowledge level of mothers

<b>Processing food</b>	<b>Habbit</b>			<b>p value</b>
	<b>Never</b>	<b>Sometimes</b>	<b>Always</b>	
<i>No used oil more than two times for cooking</i>	19.1%	34 %	46,8%	0.96*
<i>Used fresh material for cooking</i>	6.4%	29.8%	63.8%	0.54*
<i>Keep green herbs fresh until the end of processing food</i>	17%	31.9%	51.1%	0.37*
<i>Using spices that are stimulating and sharp-flavored in processing food for children</i>	46.8%	34%	19.1%	0.58*
<i>When making vegetables for children, vegetable ingredients are cut first before being washed and then input the vegetable ingredients to be cooked before the vegetable broth boils</i>	31.9%	34%	34%	0.63*

\*  $p > 0,05$     \*\* $p < 0,05$

The way mothers processing food greatly determines the nutritional status and health of their children. The behavior to process food from the mother was seen in Table 3. According to Table 3, most of mothers have been good skill for processing food. Majority of 46.8% of mothers had good behaviour in using oil for cooking no more than 2 times utilization, and always use fresh ingredients for cooking (63.8%), and also always keep green herbs fresh until the end of processing food (51.1%), never using spices that are in processing food for children (46.8%), and always cooking vegetables by cut first vegetables before being washed and then cooked them before the vegetable broth boils (34%).

The result showed that there is no significant relationship between the level of knowledge and behaviours of mothers in Banggai island, Central Sulawesi ( $p > 0,05$ ). Many studies show no relationship but there are some that do, albeit mainly at 'low' levels of Evidence (Worsley, 2002). However, Nutritional education for the

mothers will positively effects eating behaviours and habits both mothers and children. Correct changes in mothers' eating habits can help having healthy nutritional behaviours. Families, especially mothers are the most important sources in teaching nutritional knowledge (Bevan and Reilly, 2011). In this study, it is determined that having high nutritional knowledge of mothers do not positively effective on their behaviors in processing food. Good nnknowledge does not guarantee that it can shape good behavior. This study showed that mothers who have bad knowledge do not necessarily have a way to process bad food. The process of processing good food from a group of mothers in Banggai, caused by hereditary culture about food processing which turned out to have good meaning in health

#### 4. Conclusion

The present study has found that mothers in Banggai island had bad knowledge about nutrition (76.6%). However, mothers' behaviour in processing food gave good results. Most of mothers have good behaviour in order to processing food. But, statistically test showed there is no significant relationship between the level of nutrition knowledge and behaviours of mothers in Banggai island, Central Sulawesi ( $p > 0,05$ ).

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