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# **THE RELATIONSHIP OF FEEDING PATTERN AND NUTRITIONAL STATUS IN UNDER 5-YEARS OLD CHILDREN BY USE INTEGRATED MANAGEMENT OF CHILDHOOD ILLNES (IMCI) IN SURABAYA**

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## **ABSTRACT**

Feeding pattern was common problem in under 5-years old children. It could influence the nutritional status of children. The aim of this study was to analyse relationship between feeding pattern and nutritional status in under 5-years old children.

This research used cross sectional design. Feeding pattern and nutritional status measured by questionnaire based on IMCI. The sample were 100 under 5-years children wich are taken by consecutive sampling. The result showed almost under 5-years children have problem in feeding pattern (74%), nutritional status were normal 55%, undernutrition 26% and severe undernutrition 19%. Analysis with chi square test showed  $p=0.001$ , it means that there was relationship between feeding pattern problem with nutritional status in under 5-years old children.

This research showed, the most problem's in under 5-years old children's feeding pattern were under standart feding pattern, feeding by bottle and feeding not active. Recommendation from this research is health promotion about feeding pattern standart.

Keyword : feeding pattern problem, nutritional status and 5-years old children.

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## **Introduction**

Growth and development is an integral part of nursing care in children. Every age has the different development task. Along with advances in the field of health, especially in children, developmental problems getting noticed. However, the problem of child development require adequate nutritional support. Until now,

the child nutrition remains a global problem in Indonesia. The aim of this research was to identify nutritional status and feeding pattern in under five years old children by using integrated management of childhood ilnes (IMCI) in Surabaya.

Nutritional problem solving become the first millennium development goals. The prevalence of infant malnutrition has been reduced by nearly half. The prevalence rate of malnutrition among children under five by 1989 by 31% to 18.4% in 2007. The 2015 target of 15.5% is expected to be achieved. Disparity in the prevalence of malnutrition among children under five between provinces still require a more effective response. Although the national prevalence rate of malnourished children has decreased almost reached the target of the MDG's, but there are still disparities between provinces, between rural and urban areas and between socio-economic groups (Bappenas, 2010).

Ministry for Development of National / National Development Planning Agency (Bappenas), child mortality, infant and neonatal mortality has decreased. 1991 mortality rate of 97 per 1,000 live births has dropped to 44 per 1,000 live births in 2007, the MDG's will decline to 32 in 2015. The infant mortality rate in 1991 was 68 per 1,000 live births has decreased in the year 2007 to 34 per 1,000 live births and is targeted to decline to 23 per 1,000 live births in 2015. While neonatal mortality rate in 1991 at 32 per 1,000 live births has declined in 2007 amounted to 19 per 1,000 live births and the target will continue to decline in 2015 (Bappenas, 2010).

The decline in child mortality, infant and neonatal continue to be pursued by the government through various strategies, one of which is the National Action Plan on Food and Nutrition 2006-2010 made by Bappenas. There were 17 interventions that have been implemented to address the nutritional problems in Indonesia. The programs include food subsidies, community-based nutrition intervention program as part of primary health care, nutrition education, promotion of breastfeeding in hospitals, integrated child

care program, an injection of iodine, iodized water, iodized salt, iodine supplementation in women, vitamin A supplements in infants, fortification of vitamin A in sugar, supplementation of iron tablets to pregnant women, the iron fortification of salt, iron fortification of sugar, fortifikasi iron, the iron fortification of staple foods (wheat) and supplementary feeding in infants. In the execution of Bappenas has involved a variety of health care structure began at the health center to the hospital. This shows the seriousness of the government to address the issue of malnutrition in Indonesia (Bappenas, 2006).

Handling of nutritional problems in Indonesia has been disseminated to the health care arrangements at the primary level. Puskesmas as the spearhead of basic health services have implemented programs related to the handling of nutritional problems in the community. Infants and toddlers with severe malnutrition receive special attention from the health center. Nutritional counseling and empowerment of volunteers conducted to address nutrition problems in the community, but a variety of other factors have a considerable influence that until now the condition of malnutrition, poor nutrition and over nutrition remains a problem in Indonesia. Based on the results of preliminary studies on the community in Surabaya authors obtained from 40 children who carried out the integrated management of sick children earned 15 emaciated children, 1 child is very thin. Factors affecting the provision of nutrition in children include parental knowledge about the presentation of the meal was still less, socio-economic ability and willingness of parents to provide nutrition to children. Detection of nutritional status of children from an early age is required to monitor and provide appropriate treatment to the problem of child nutrition.

Detection of the nutritional status of children be integrated with management of pain management of infants and young children in the community with the implementation of the IMCI (Integrated Management of Childhood Illness). The use of IMCI greatly assist in detecting nutritional status of children as well as providing a reference handling sick child health issues. According to Bappenas (2010), there are 35-50 children do not have access appropriate care when sick and 40% of children have not been protected from preventable diseases, nutrition treatment interventions are lacking and yet cost-effective nutrition still needs to be developed so that the use of IMCI still needs to be improved. By optimizing the expected IMCI child health problems that occur can be quickly resolved, including the issue of nutrition. While in the case that require further help at the hospital can be done referral.

The role of nurses in addressing nutrition problems in Indonesia is very important. In the order of service in the health center, monitoring the nutritional status of children through IMCI greatly help the early detection of a child's nutritional status. By optimizing the implementation of IMCI is expected that children with nutritional problems immediately receive appropriate treatment so that his condition immediately improved. The nursing child looked at the child as a unique individual, including in response to meeting the needs of nutritional disorders. In nursing children, growth and development are inseparable. Impaired nutritional needs will affect the development of the child. Various factors affect a child's response to meeting the needs of nutritional disorders. These factors are the stimulus that comes from the environment and the individual has the ability to adapt to the stimulus to maintain the integrity of health. One of the nursing concept that sees humans as a system that is able to adapt to the stimulus

from the environment dalam Roy Adaptation theory (Tomey & Alligood, 2002).

### **Literature review**

#### 1. Feeding pattern in under five years old children

Feeding a first interaction between the child and his mother. It is a focus of concern of health workers and the social interaction between mother and child. Feeding not only the process of feeding the child, but a series of learning experience both parents and children. The process of learning and experience not only affects the health status of children, but also affects the growth and development of children both socially and emotionally ([Liu and Stein, 2013](#)).

Feeding in children is a complex set of processes. Feeding on an interaction between nannies with children, this involves non-verbal communication and the ability to understand the child. Feeding behavior in children varies, children are often more fun with a toy rather than eating ([Liu and Stein, 2013](#)).

Feeding mainly unchanged in the first 3 years of age. At this age the ability to eat and feed the child needs to change because of the development of motoric, cognitive and social. In the first stage of a child's life (birth-3 months) self-regulation and regulation of eating is an integration of the experience of hunger and fulfillment through oral satisfaction. In the second stage (3-7 months), infants begin to learn the trust of interaction with parents. Furthermore, until the age of 36 months children begin to develop autonomy, so at this stage requires environmental control skills and independence in eating ([Liu and Stein, 2013](#)).

Feeding patterns are influenced by the habits and temperament of children's nanny. Parents who allow their children to determine the timing, amount and snacks will help children float capability of self control and sense of security. Parents who allow children ages toddler to explore the environment will help children develop motoric and social skills. Effective parents will respond with his right temperament. Child's temperament can influence how children respond to the new food and feeding patterns by parents ([Liu and Stein, 2013](#)).

## 2. Nutritional status of under five years old children

Nutritional status is a measure of the adequacy of the intake and energy needs. Nutritional status would decrease if there is a decrease in intake, an increased need for nutrients and substance use disorders (Jeejeebhoy KN, Detsky AS and Baker JP, 1990). Children with nutritional status of thin and very thin requiring more intake, nutrition with better quality, better density and early detection to menanggulangannya (JL Wood, Walker KZ, Iuliano BJ BS & Strauss, 2009).

Management of the nutritional status of children with thin and very thin require more attention. Children with nutritional status and category of malnutrition and poor nutrition are more vulnerable to diseases, especially diarrhea and pneumonia (UNICEF, 2013). Children with nutritional status and category of malnutrition and malnutrition are more susceptible to disease because of low immunity. The severity of illness of patients with refractive exceed normal nutritional status, therefore, needs proper management.

Nutritional status is influenced by three factors, food, health and management of food and feeding. Optimal nutrition status

is obtained if the children get enough food, varied, nutrient-rich well of health practitioners as well as from their parents. This affects directly on nutrient intake and disease. Interaction between poor nutrition and infection is a cycle that is often encountered in children who are malnourished (UNICEF, 2013).

Food, health and care are influenced by social factors, economics and politics. The combination of these factors vary from one country to another. An understanding of the factors that influence terhadap status nutrients in one country needs to be understood in depth in order to set appropriate interventions (UNICEF, 2013).

## Methodology

The study design is a research plan was structured so that researchers can obtain an answer to the question of research (Setiadi, 2007). The design of the correlation in this study using cross sectional design.

Population is a larger group of subjects where research results can be generalized. The population in this study is a toddler with nutritional status thin and very thin (malnutrition) in Surabaya.

Samples are part of the population who do research. The sample in this study was Toddlers with nutritional status thin and very thin in Surabaya who match the inclusion criteria.

In this study, the sampling method used method of consecutive sampling, ie sampling based on availability (Portney & Watkins, 2000). Samples taken in this study is all respondents who met the inclusion criteria for the study period is May to June 2013.

Sample criteria :

Inclusion criteria :

- a. Under five years old children with nutritional status thin and very thin
- b. No other disease

Exclusion criteria :

- a. No cooperative
- b. Children with indigestion

This study was conducted in community setting in Surabaya. Time the study was divided into three, namely making proposals, data retrieval and reporting of research results. Making the proposal began in April 2013, data collection was divided into two, namely the completion of the administration in May and implemented data collection was conducted in May-June, 2013, and the reporting of the results of research conducted in July 2013.

### Result

- a. Characteristic respondent based on sex and age

Table 1.1. Characteristic respondent based on sex and age May – June 2013 in Surabaya

		num ber	%	num ber	%
Sex	Boy	56	56%	100	100%
	Girl	44	44%		
Umur	2-24 month	67	67%	100	100%
	25-60 month	33	33%		

- b. Characteristics of respondents based on weight and height

Table 1.2. Characteristics of respondents based on weight and height May – June 2013 in Surabaya

Var	Num	Min	Max	Mean	SD
Weight	100	5	24	12.04	4.5
Height	100	50	120	85.97	15.8

- c. Nutritional status

Table 1.3. Characteristics of respondents based nutritional status May – June 2013 in Surabaya

Var	Category	number	%	Total	%
Status gizi	Normal	55	55%	100	100%
	Thin	26	26%		
	Very thin	19	19%		
Total				100	100%

- d. Feeding pattern

Table 1.4. Characteristics of respondents based on feeding pattern May – June 2013 in Surabaya

Variable		Number	%	Total	%
Feeding pattern	Have feeding pattern problem	74	74%	100	100%
	No feeding pattern problem	26	26%		
Total		100	100%		

- e. Relationship of feeding pattern to nutritional status in under five years old children in Surabaya

Table 1.5. Relationship of feeding pattern to nutritional status in under five years old children in Surabaya

Variabel		Status gizi responden			Total
		Normal	Thin	Very thin	
Feeding pattern problem	No problem	22	4	0	26
	Have problem	33	22	19	74
Total		55	26	19	100

p = 0,001

## Discussion

### a. Feeding pattern in neonates

Table 1.3. showed the characteristic respondents based on feeding pattern problem. Most respondents 76 respondents (76%) indicate a problem feeding and only 15 people (15%) of respondents who did not have problems feeding. The main problem in feeding the children is the existence of discrepancies anantara food given to the supposed (the advice to eat for healthy or sick children), feeding using bottles and children are not fed actively by his parents.

Providing food is a food recommended in accordance with the advice to eat for healthy or sick children according to age group. This discrepancy include the type of food provided, portions and variety of food provided. According Thakwalakwa et al. (2009), one of the causes of the malnutrition is incompatibility with the standard feeding feeding for infants. For that we need a standard for infant feeding in order to avoid problems of feeding in infants. Food additives in infants is often defined as the addition of infant formula and instant foods are sold in the market. While the recommended standard of additional food is home-cooked food that is processed in a certain way that is tailored to the age of five. One is the milk porridge or mashed papaya can be given to children from the age of 6-9 months and gradually be added porridge plus team creamed egg yolk, chicken, fish, tempeh, tofu, beef, carrots, spinach, green beans, coconut milk and oil. While the rice porridge, rice and rice mushy team can be given to children aged 12-24 months with additional same with children aged 6-9 months, but with a larger portion.

Based on interviews with respondents, the main problem in the advice to eat for healthy or sick children is feeding does not correspond to a given portion. In fact, they found children over 1 year of age who get

5 servings of food with a spoon. This is one of the causes of nutritional problems in children.

Feeding in children is a complex process. Children respond to the food given to him in various ways, be it voraciously, while playing, not eating or regurgitating food. Children often refuse to give food, play it and remove it. This requires patience and understanding of parents or relatives who care for children. Often encountered parents can not wait to give food to the children, so that children are not fed actively. The process of providing the next meal will be an experience for children that influence the growth of both psychosocial and emotional (Liu & Stein, 2013).

### b. Nutritional status in under five years old children

Table 1.4 shows the majority of respondents indicate normal nutritional status, as many as 55 children (55%), skinny 26 children (26%) and a very thin 19%. Nutritional status is a measure of the adequacy of child nutrition. In the assessment of nutritional status with IMCI, child nutritional adequacy is measured by the ratio between weight and height of children based on age. Nutritional status is a measure of the adequacy of the intake and energy needs. Nutritional status would decrease if there is a decrease in intake, an increased need for nutrients and substance use disorders (Jeejeebhoy KN, Detsky AS and Baker JP, 1990). Based on the results of the study indicate that there are still many children with a normal nutritional status, this means there is still a balance between energy intake and needs of the child.

Table 1.4 also shows the number of children whose nutritional status of underweight by 26% and child nutritional status is very thin as much as 19%.

Children with nutritional status of thin and very thin requiring more intake, nutrition with better quality, better density and early detection to menanggulangnya (JL Wood, Walker KZ, Iuliano BJ BS & Strauss, 2009).

Management of the nutritional status of children with thin and very thin require more attention. Children with nutritional status of thin and very thin are more susceptible to diseases, especially diarrhea and pneumonia (UNICEF, 2013). Therefore we need the right skeneing and management to handle it. This is especially if the nutritional status of underweight in children less than 24 months. During this period of growth and development of children takes place very quickly, so we need to make the treatment of the right.

Based on the results of the study, child nutrition bertatus thin and very thin are more prevalent in children aged 2 months to 24 months. In this phase, the activity of the parents plays a very important. The ability to identify and present according to the needs of the child nutrition is the key to improving nutritional status in children. Furthermore, the toddler and pre-school age children are more autonomous in determining eating. This should be realized parents in order to facilitate the development of the child both in terms of physical health and social and emotional development.

c. The relationship of feeding pattern and nutritional status in under five years old children

The results showed that of the 74 children who have problems feeding, there were 33 children (33%) had normal nutritional status, 22 children (22%) have a thin nutritional status and nutritional status of 19 children have very thin. After being tested by chi-square statistic was obtained  $p = 0.001 (<0.05)$ , so it can siasumsikan

that there is a relationship between problems feeding and nutritional status.

Based on this research, one of the factors that affect the nutritional status of children is a problem feeding. Feeding inactive and incompatibility with the "advice to eat for healthy or sick children" would lead to insufficient food intake in children. Most parents provide food did not match the standard of food toddlers according to IMCI, both in children of normal nutritional status, thin and very thin. But of all the nutritional status of children is very thin indicate a problem feeding.

Feeding problems encountered in this study there are three things, namely mismatch feeding with the advice to eat for healthy or sick children, inactivity of parents to feed children and the use of bottle feeding. This will affect the intake of children, which in turn will affect the nutritional status of children.

Based on the results, of the 26 children whose nutritional status of thin, be obtained 18 children get a meal not in accordance with the advice to eat a healthy child and only 6 children who get fed in accordance with the advice to eat for healthy children. And of the 19 children with the status of nutrition is very thin, only three children who got to eat in accordance with the advice to eat a healthy child. This leads to insufficient energy in children so the impact on nutritional status. The low amount of food that the child obtained also due to the lack of precise perception of parents about the portion of food that should be consumed by children and an increase in body weight (Liu & Stein, 2013).

### **Conclusion and recommendation**

Feeding pattern influence nutritional status in under five years old children. The result showed Children with nutritional status thin and very thin (malnutrition) have



more feeding pattern than children with nutritional status in normal category. This research recommend IMCI as a screening nutritional status and approach of treatment feeding pattern.

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