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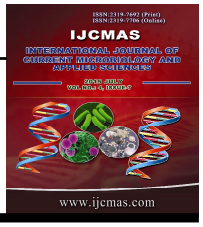

Original Research Article

Mothers' Knowledge On Balanced Nutrition To Nutritional Status of Children in Puskesmas (Public Health Center) In The District of Pancoran, Southern Jakarta 2014

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Keywords

Knowledge on balanced nutrition, Nutritional status, Toddler

A B S T R A C T

Nutrition has become a main problem of health in many countries, whether in developed countries or in developing countries as well. The occurrence of nutritional problems to infants can actually be avoided if mother has a good knowledge degree on how to manage and serve food for toddler with balanced nutrition. Lack of knowledge of mothers on balanced nutrition can be a main factor of inability to serve appropriate food according to nutritional needs for family members which certainly causes the nutritional status of children. This study aims to examine mothers' knowledge on balanced nutrition to nutritional status of children in *Puskesmas* (public health center) in the district of *Pancoran*, Southern Jakarta 2014. This study employed Correlation Analytical Research with Cross Sectional Design. The applied sampling technique was Consecutive Sampling by taking as the sample from 90 pairs of mothers and aged 0 -60 months infants in the sub-district *Puskesmas* (Public Health Center) in year 2014. Analysis to statistical test was Chi-Square Test using an error rate of 5% ($\alpha = 0.05$) and 95% trusted intervals. The study was carried out in June - July 2014. Based on Chi-Square Test was discovered ($p < 0.05$), so the relationship between mother's knowledge level on balanced nutrition to nutritional status was statistically significant. It can be affirmed that there is a relationship between knowledge degrees of mother to balanced nutrition with children's nutritional status of.

Introduction

The main challenge to create the development of nation is how to develop the quality of human resources (HR) namely intelligent and productivity. The accomplishment to human development as measured by the Human Development Index (HDI) has not yet showed encouraging results. In 2013 for instance, Indonesia's HDI was still in rank 108 of 187 countries, which was unchanged from the before year 2012[1]. The condition of Low HDI is strongly affected by low nutritional and health status of the population. This can be observed from the still high infant mortality rate to 32/100,000 live births and under five mortality rate is 40/100,000 live births, and

the maternal mortality rate 359/100,000 of live births. More than half of the infant deaths or children under five are caused by poor nutritional status of child under 5 year (*balita*) [2].

Objective and policy to the health improvement, including the before mentioned health improvement supports enhancing health status. One of the factors that determine the level of health and well-being is nutrition. Nutrition is an important factor which plays a role in the human life cycle, especially infants and children who will be our future generation[3].. As to serve daily food should contain balanced nutrition as needed to support optimal growth, to avoid deficiency diseases, to prevent poisoning, and also to prevent the onset of diseases which might interfere with the survival children[4].

Nutrition involves in each life cycle, starting in the womb (fetal), infant, child, adult, and elderly. The period of the first two years of life is considered to be a critical period, because growth and development occurs very rapidly during this period. Poor Nutrition during this period can cause malnutrition that creates permanent disorders, which means, it cannot be recovered even if the nutritional needs can be fulfilled [5].

Infants or toddlers with malnourishment will have a higher risk of death. Even though they survive, they often have weak physic and low mental development. Poor nutrition is the cause of high infant mortality by 60% deaths of under-five each year. Two-thirds of these deaths were related to improper eating habits that occurs in the first year of age [6].

As for national scope, the prevalence of undernourishment and malnutrition in Indonesia is still high. This can be seen from the prevalence of less weight (underweight) in 2007 which recorded 18.4% of the population suffer from malnutrition and undernourishment, and then decreased to 17.9% in 2010, and again jumped up to 19.6 % in 2013 [7].

According to data of the World Health Organization (WHO) in 2002 indicates the primary cause of infant mortality due to malnutrition reached 54%. *WHO* (1999) categorized the areas based on the level of prevalence of malnutrition into four areas group: low (below 10%), moderate (10 - 19%), high (20 - 29%), and very high (30%). The area grouping due to prevalence level of malnutrition by *WHO*, Indonesia in 2004 had position as a country with high malnutrition due 5,119,935 (28.47%) of the 17,983,244 children under five in Indonesia, including the group of malnutrition.

Indonesia's health profile at present is still contributor to the numbers of children with low and malnourishment in the world, reaches 165 million. Child with malnutrition can be seen from a short size body and low weight. Children who are malnourished are usually born with a weight below 2.5 kilogram [8]. Infant with Low Birth Weight (LBW) still remains the world's problems, especially in the developing countries. More than 20 million babies in the world (15.5% of all births) hold LBW and 95% of which occur in develop countries [9]. Apparently, LBW is suffered by pregnant women with chronic conditions or less energy (KEK), and the risk is higher in pregnant women aged 15 - 19 years where the proportion of pregnant women aged 15 - 19 years KEK still reaches 38.5% [10].

According to data from the *Riskesdas* (Health Research) in 2013, the prevalence of short children through nationwide in 2013 was 37.2%, which means an increasing compared to year 2010 (35.6%) and year 2007 (36.8%).

So from the above mentioned description, there are still problems related to nutritional status of infants because of the persistence of malnutrition and malnutrition in the community. These issues will influence the improvement of quality of human resources in the future. This become a main reason to the researchers to be interested in conducting research to determine the relationship of mothers' knowledge level on balanced nutrition with nutritional status of children to focused in the Southern Jakarta District Health Clinic 2014.

The objective purpose of this study was to determine the relationship between mothers' knowledge level on balanced nutrition with nutritional status of children in Southern Jakarta District health clinic 2014.

Materials and methods

Design to be applied in this study is an Analytic Co-relational Research that examines the relationship between variables. Co-relational study aims to reveal the correlative relationships between variables. The approach of the study is using Cross Sectional which is a type of research that emphasizes observation time measurement on independent and dependent variable data only once at one time [10].

The independent variables (knowledge of mothers on balanced nutrition) and dependent (nutritional status) was collected at the same time in this study by using questionnaires and observation.

The sample of this study was all mothers who have children under 0 - 60 months of age who had been recorded on IMCI service visit in May 2014 to *Puskesmas* in *Pancoran* sub-district to 431 children under five year of age by applying consecutive sampling technique. This study used questionnaire as measuring instrument to assure mothers' knowledge level on balanced nutrition and to be continued to weigh and height toddlers to know the nutritional status of children.

Hypothesis analysis used Technique of Chi-Square.

Results and Discussion

Figure 1 illustrates that the highest distribution of respondents' knowledge on balanced nutrition is good from 80 respondents (89%) and the lowest distribution is less by 1 respondent (1%).

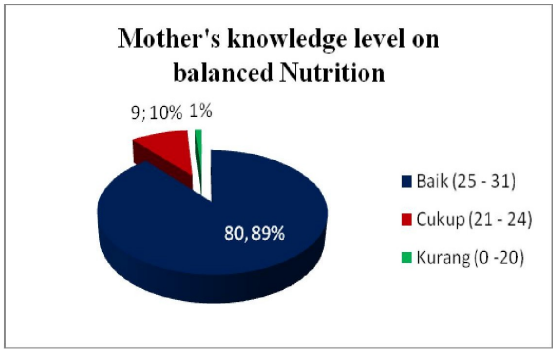

Figure.1 Distribution frequency of respondents based on mothers' knowledge level on balanced nutrition.

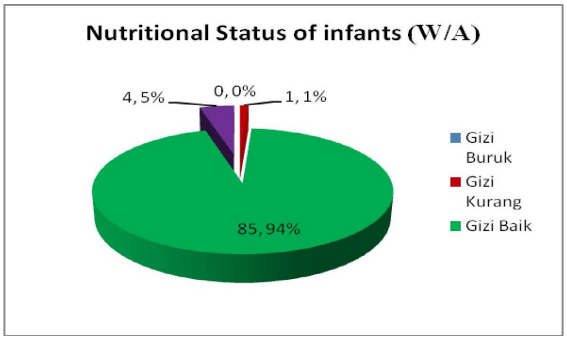

Figure.2 Distribution Nutritional Status of infants (W/A)

Based on figure 2 of the nutritional status of infants (Weight/Ages) illustrated that the highest distribution is good nutrition about 85 respondents (94%) and the lowest distribution is malnutrition, 1 respondents (1%).

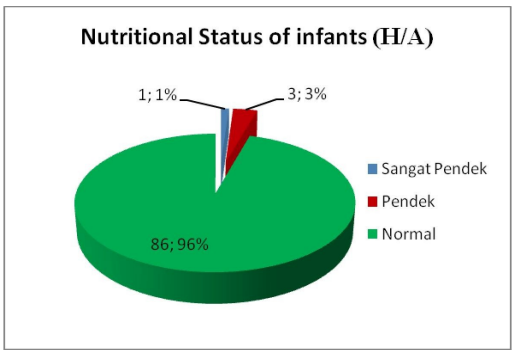

Figure.3 Distribution of nutritional status (H/A)

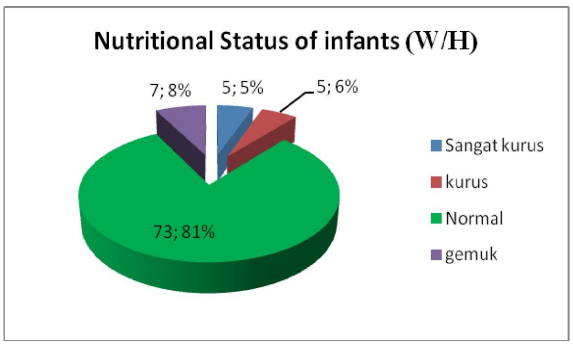

Figure.4 Distribution of nutrition status (W/H)

Based on Figure 3 on the nutritional status of children (Height/Ages) illustrated the highest distribution is normal as many as 86 respondents (96%) and the lowest distribution is very short as 1 respondent (1%).

Based on the figure 4 on the nutritional status of infants (Weight/Height) illustrated the highest distribution is normal as many as 73 respondents (81%) and the lowest distribution is thin as many as 5 respondents (6%) and very thin as 5 respondents (5%).

Table.1 Relationship between mother's knowledge level on balanced nutrition with toddler nutritional status (Weight/Ages)

Nutritional status	mother's knowledge level						Total	%	P Value
	Good	%	Enough	%	Less	%			
under	1	100 %	0	0	0	0%	1	1%	
normal	82	95%	2	2%	1	1%	85	95%	0,00
over	4	100%	0	0%	0	0%	4	4%	
Total	87	97%	2	2%	1	1%	90	100%	

Knowledge have toddler with good nutritional status of 82 respondents, over 4 respondents, and less as 1 respondent, hereinafter mothers with enough knowledge to have children with good nutritional status as second respondent, and mothers with less knowledge of having children with good nutritional status as first responder. Based on this analysis indicates that the better knowledge of mother will have tendency to better nutritional status of child. ($p<0,05$). We can be conclude that there is a correlation between maternal knowledge on balanced nutrition with nutritional status of children (H/A) at the Southern Jakarta, *Pancoran* District health clinic 2014.

Table.2 Relationship between mother's knowledge level on balanced nutrition with toddler nutritional status (Height/Ages)

Nutritional status	mother's knowledge level						Total	%	P Value
	Good	%	Enough	%	Less	%			
Very Short	0	0%	1	100%	0	0%	1	1%	
Short	3	100%	0	0%	0	0%	3	3%	
Normal	84	98%	1	1%	1	1%	86	96%	0,000
Total	87	97%	2	2%	1	1%	90	100%	

Based on the table 2, the correlation between mother's knowledge on balanced nutrition with nutrition status (W/A) explained that most woman with good knowledge have toddler with a normal body condition were 84 respondents and short body as much as 3 respondents, the mother with enough knowledge to have a toddler with a very short body condition as 1 of the respondents and normal body condition as 1 of the respondents, while mothers with less knowledge had a toddler with a normal body condition as much as 1 respondent. Based on this analysis explains that the better knowledge of the mother will give tendency to more proportional body condition of the toddler (p<0,05).

Based on the decision of the tests, we can conclude there is a relationship of balanced nutrition knowledge of mothers with infant nutritional status (W/A) in the *Pancoran* District health clinic Southern Jakarta in 2014.

Table.3 Relationship between mother's knowledge level on balanced nutrition with toddler nutritional status (Weight/Height)

Nutritional status		mother's knowledge level			Total %
	Good	% Enough %	Less	%	P Value
Very Thin	3	60% 2 40%	0	0%	5 6%
Thin	5	100% 0 0%	0	0%	5 6%
Normal	72	99% 0 0%	1	1%	73 81% 0,000
Over weight	7	100% 0 0%	0	0%	7 8%
Total	87	97% 2 2%	1	1%	90 100%

Based on the cross table 3, the correlation between mother's knowledge on balanced nutrition with nutritional status (weight/height) described that most woman with good knowledge have a toddler with a normal body condition as many as 72 respondents, thin body as many as 5 respondents, very thin body as many as 3 respondents, and fat body from 7 respondents. The mother with enough knowledge to have a toddler in a very thin body condition from 2 respondents, and mother with less knowledge has a toddler with normal body condition as many as 1 respondent. Based on this analysis describes that the better knowledge of mother, there will be tendency to more proportional body condition of toddler (p<0,05).

We can conclude that there is a relationship between mother's knowledge on balanced nutrition with infant nutritional status (weight/height) in the *Pancoran* District health clinic, Southern Jakarta in 2014.

In Discussion, a study to 90 respondents in *Pancoran* District Health Clinic in Southern Jakarta in 2014 illustrated that most respondents are at the stage of early adulthood (26 - 35 years) as many as 52 respondents (58%). According *Notoatmodjo* (2003), *age can give influence in the perception and mindset of a person*. The increasing of the age will develop the perception and concept patterns, which means the knowledge will be in better stage [11]. The older the person is, the better the processes of mental development [12]. It can be stated that mother's age will affect the accretion of knowledge, so the mother at

the stage of early adulthood (26-35 years) have a good knowledge to care for her child.

Distribution of respondents according to the highest level of education background is high school graduates or equivalent as many as 45 respondents (50%). The results indicated that nearly all mother has good education background. The higher the mother's education is, the easier to appreciate information about nutrition and health. It creates positive relation to better consumption of the toddlers. The condition also describes the importance of education background for the quality of child nutrition by the mother. This suggests that the mother's education level affects the nutritional status of child [13]. It can be obviously stated that the higher the mother's education level, or they have better knowledge level, will build better ability to look after her child.

Distribution of job or occupation indicates that most of the respondents was not working as many as 68 respondents (76%). Mother's job in natural way is taking care of the family member, but recently many women willingly help their husbands to meet the needs of families by working outside the house. Mothers who do not work can be more focused on taking care of their children related to education, food consumption and parenting. Mothers who do not work have 24 hours to care for their children at home compared to working mothers. Thus mothers who do not work have more opportunities to care for their children at home. In that case it can affect the nutritional status of children to the better. As ever stated by *Suhardjo* (2002) that mothers who work outside the home will be less attention to their children, whereas mothers are always at home will have opportunity to pay more attention to their children, especially the problem of nutrition anak [14].

Distribution of the number of children shows the distribution of respondents is highest among respondents who have one child as many as 40 respondents (44%) and 2 children of 32 respondents (36%). The majority of respondents are in the early stages of adult age that are still productive.

Mother's knowledge on balanced Nutrition

Knowledge is the result of knowing and occurs after one put on sensing of objects. Most of the human knowledge is received through the eyes and ears. By doing the learning and in learning process will be able to make changes to one's behavior. Changes in behavior may lead to a better point if the individual considers it to be beneficial, but on the other hand also there might be possibility to lead to worse behavior changes if the individual think the objects of study is unsuited with his/her fate [15].

Based on the explanation of research results, it can be noticed that from 90 mothers as samples who have good level of knowledge, there are 87 samples or 97%, those with sufficient levels of knowledge are 2 samples or 2%, and less knowledge is 1 sample or 1%.

The knowledge level on balanced nutrition of respondents who have a toddler in the *Pancoran* District health clinic Southern Jakarta 97% in good knowledge level. Details of the level of knowledge is based on the following sub-variables: the level of knowledge of mothers on the definition of balanced nutrition 87% in good level of knowledge; mother's knowledge level on types and sources of nutrients 66% in sufficient level of knowledge; the level of nutritional knowledge of mothers about 96% in good knowledge level and mother's knowledge level on the consequences of nutritional

deficiencies 99% in good level of knowledge.

Based on the data received, mothers as respondents with good level of knowledge on balanced nutrition. Mother knows in common sense on balanced nutrition, types and sources of nutrients, nutrition for infants and lack of nutrients. Knowledge of mothers on balanced nutrition is an aspect in the selection and supply of groceries for the family.

Nutritional knowledge of parents about foodstuffs will affect the dishes that are served in the family. With adequate knowledge of the mother would provide good meal for the family, especially children under five. So expectedly nutrition for children will be fulfilled according to their needs. The lack of knowledge on nutrition will influences the emergence of nutritional problems; affect in the emergence of nutritional problems will interfere with the growth and development of children.

Obtained data of the research was related to the level of knowledge of mothers by age; for the age of 26-35 years as many as 49 (94%) with good level of knowledge on balanced nutrition. Age affect one's mindset, increasing age and experience increases individual well which means it can influence the attitudes and behavior of individuals. Increasing age, level of maturity and strength of a person will be more mature in thinking and working.

The increasing tendency to apply rational thinking in early adulthood. Formal or informal education background, experience in life as general, and employment are dramatically improved inindividual concepts, problem solving skills and cognitive changes motorik [17]. Early adulthood is significant starts in pregnancy until sense of care to child and family. The above explanation is in accordance with the results of the study that there is a tendency to increasing knowledge along with the increasing age.

Data of maternal knowledge level which is based on education background; 71% of respondents of 28 respondents who came from primary level, have good knowledge level. From the 45 respondents who have secondary education, 96% have good knowledge level. And 17 respondents with higher education level, 100% of them have good knowledge level. The level of education affects the acceptance and absorption of information. Research Agrina (2010) stated that the respondent with good knowledge on the average toddler nutrition is respondent with high school education background [18]. Damanik (2010) stated that the mother's education background plays an important role in infant nutritional sufficiency. The prevalence of stunted children is an indicator of malnutrition occur hardly to women with high levels of knowledge [19].

Woge (2007) stated that maternal education background has no significant association with the nutritional status of children in *Sub Kalimutu Endes Flores East Nusa Tenggara*, but this is in contrary wit research of Wardaningsih (2001), in the study indicated that variables parents' education background is a risk factor for disapproving the nutritional status of the children, such as occurred in Sleman, Yogyakarta, case of malnutrition in children. Education is the process of attitudes changes and behavior of a person or group of people in a mature business man due to teaching and training efforts. Education can be considered both formal and informal.

Another study conducted by Mulugeta and friends (2005) stated that maternal education background has no relation with the

nutritional status of child. Nutritional status of children depends on earnings and the mother's ability to manage it by making decisions for the best of their children [20]. Meanwhile research by *Rayhan* (2005) stated that maternal education had relation with nutritional status of the family member, and to be associated with other indicators such as social status in the community. Woman with high social statue, has the capacity to decide how to improve the nutritional status of children.

The results obtained by the researchers and being compared with other researchers concluded that the average level of knowledge of the respondents are secondary education level. This proves that the higher the level of education background will be the higher knowledge is in possession of. This is for the reason that the mindset of people with basic education will not the same as to those who have secondary or higher education level. Knowledge itself can also be obtained through informal activities such as general education program and the mass media.

The level of mother's knowledge based on employment status; Data showed that the level of knowledge of the respondents with employment status were 21 (95%) with good level of knowledge of the working respondents. While 59 respondents (87%) both come from the working and not working respondents. Based on this data, it becomes visible that a good knowledge level is in mother with working status. Anyway it cannot be used as a benchmark that working mother has always good level of knowledge as well as those from education and life experience.

The knowledge level of mother based on number of children; Data indicated that respondent with 1 child, 90% has good level of knowledge, and a mother with 7 children is 100% has good knowledge. From such data showed that respondent who has 7 children has better knowledge than with 1 child. But it cannot be assumed that more number of children will guarantee the better level of knowledge, because knowledge on balanced nutrition can also be achieved from information.

Based on the research by Huriah in the district *Beji Depok* (2006) due to the relationship between mother's behavior in meeting the nutritional needs with the nutritional status of children. In the study indicated that no connection between number of children with mother's behavior in nutrition16, however the study from *Amsalu* and *Tigabu* (2008) ever stated that number of children connected with the increasing risk of acute malnutrition. Family with many members and inadequate birth spacing will have chance in risk factors for malnutrition acute [21].

Toddler nutritional status

Based on the data research, the highest distribution of nutrition status (W/A); as many as 85 infants (94%) had good nutritional status whether the lowest as many as 1 toddler (1%) in less nutritional status. The next to the highest distribution of nutrition status (W/H); 73 infants (81%) with normal body condition, whether the lowest distribution 5 children (6%) with thin bodies and 5 children (5%) with very thin bodies. The highest distribution of nutrition status (H/A); Total of 86 children (96%) with normal body condition, 3 children (3%) with a short body, and one toddler (1%) have a very short body. Nutritional status can be defined as a condition of human body as a result of the food consumption and content of nutrients from the food that distinguished nutritional status in fat, normal, and thin [22].

This study shows that the persistence of nutrition problems occurs, may be caused by direct factors i.e. food intake or infectious diseases that may be suffered by the children. But also indirect factors may affect the nutritional status of children. Moreover, such as less knowledge level will lessen its application in daily life, too early weaning, too early feeding, too many family members which cause less food intake by each individual, low birth weight, existing health services, wrong parenting and bad environmental health are very sensitive, children usually have started playing in the dirt, dirty environment thus allowing to happen infection [23].

Relationship of mother's Knowledge on Balanced Nutrition with Toddler Nutrition Status

The results showed that there is relationship between mother's knowledge level on balanced nutrition with nutritional status of children in Pancoran District Health Clinic Southern Jakarta, with p <0.05.

Research conducted by IKTI SR (2009) with Title *"The relations between mother's knowledge level on nutrition with nutritional status of children in the village Ngemplak, Karangpandan Karanganyar District"*. The method applied was non experimental correlation, approaches using cross sectional time. The sample used 78 with the results of p=0.009 (p <0.05). Then statistically revealed no relationship between the level of mother knowledge on nutrition and nutritional status of toddler [24].

While analytic correlation research with cross sectional approach conducted by Erni Kurniawati (2011) with the title *"The relation between mother's knowledge level on nutrition with nutritional status of children in Sub Baledono, District Purworejo, Purworejo"* to be mentioned that there is a correlation between the level of knowledge of mothers on nutrition with the nutritional status of children under five with 257 samples used by the results of the value p <0.05 [25].

Another supportive study is research by Sunimah (2012) with the title *"The relationship between mother's knowledge level on balanced nutrition with nutritional status of children aged 1-5 years in the District Purworejo Semarang Suruh District"*. The method used is descriptive correlation research, the approach using cross sectional time. The sample used 71 with the results of p <0.05. Then statistically revealed no relationship between maternal knowledge on balanced nutrition on nutritional status Balita [26].

This shows that although knowledge is not a direct factor to give affect to nutritional status of children under five, but knowledge has an important role. Because by having enough knowledge on health in particular, one can find various kinds of health problems that may arise to find the solution [11]. The aspects of nutritional knowledge about food and nutrition (definition, types, functions, resources) due to lack of food of infant nutrition (breastfeeding, complementary feeding, age provision, type), food and nutritional, food and nutrition of pregnant women, growing children, child health and knowledge on parenting. Lack of knowledge of nutrition caused by less ability to apply information in daily life and as one of the causes of nutrition disturbance [14].

The higher the person's level of knowledge, the easier to receive information. With a mindset that is relatively high, the level of knowledge is not merely knowing but also be able to comprehend, even to the extent of the application is the ability to use materials

that have been learned in actual situation or condition *(Notoatmodjo, 2007)*. This leads to more effective so that the information is understood to be a relatively high level of knowledge.

Conclusions and suggestions

Conclusions

1. Mother's knowledge on balanced nutrition in the *Pancoran* District health clinic, Southern Jakarta is mostly in good category, where knowledge is obtained according to age, education, occupation and number of quite good children belong to the respondents.

2. The nutritional status of children under five in *Pancoran* District health clinic, Southern Jakarta mostly in good category, although there are still nutritional problems are found.

3. Research shows that there is a relation between mother's knowledge on balanced nutritional with nutritional status of children in *Pancoran* District health clinic, Southern Jakarta.

Suggestion

Based on the results of study, the researchers want to give some advice that is expected can be an input and useful to stakeholders including:

1. For Institutions
   a. Health Care Institutions
      – The results of this research can be applied to health care institutions; in this case the Health Center and the Department of Health in order to develop health planning program to improve nutritional status of children.
      – PHC is expected to provide a comprehensive health education in *Posyandu* to further enhance the knowledge of visitors *Posyandu* mothers on balanced nutrition. Then it is necessary media outreach simpler so more easily understood by the mother.
      – Conducting family visits malnutrition in the working area health centers and providing nutritional counseling to community group's malnutrition.
      – IHC is also expected to be active in networking toddlers who have less nutritional status so that it can be reported and carried out follow-up by the relevant agencies.
   b. Educational Institutions
      Results are expected to be applied to educational institutions to add resource references related to nutritional status of children.

2. For Community
   Results of this research can be applied toward the community, especially mother, in order to improve knowledge of nutrition for their children, through books, media, and education so as to improve the nutritional status of children.

3. For Further Researcher

   In this study, there are many other factors that have a relationship with the nutritional status of children, such as economic factors, cultural, and so on. Results of this study certainly can be a

reference to be improved into a broader research.

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