The knowledge of a mother determines nutritional status of her children: A study at Kirana Posyandu (pre- and post-natal health care unit) of Surabaya City, Indonesia in 2017

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Abstract

Lack of nutrition during childhood has a profound impact on health including cognitive development. One of all factors that related to nutritional status is knowledge mother's factor. This study aims to identify the correlation between mothers' knowledge about nutrition and their toddlers' nutritional status (weight/age). The samples of this study are 37 mothers with toddler. This study showed a correlation between mothers' knowledge about nutrition and their toddlers' nutritional status (weight/age) at Kirana Posyandu at Pegirian Health Care Center of Surabaya City. Thus, in order to increase mothers' knowledge about nutrition, health cadres should optimized health services with regards the steps in caring postnatal children. Health care professionals can provide counseling about the importance of toddler's nutrition.

Introduction

Nutritional problems still become the main problem in the world, as it was stated on the global agreement of Millennium Development Goals (MDGs). Each country has a responsibility to decrease nutrition problems among toddlers up to 15% by the year 2015. Meanwhile, in Sustainable Development Goals (SDGs), WHO's target for 2025 is to decrease those malnutrition issues to <5%.[1]

Nutrition is beneficial factor for children growth and development. A lot of studies show that lack of nutrition, particularly around early ages, will affect children growth. Children who have poor nutrition will grow into small, thin, and short body for his/her age. Lack of nutrition on early ages affects children's cognitive and intelligence, thus it leads to inability to participate in daily activities.[2]

Children under 5 years old, or toddlers, is one of many age groups which have a high risk of lacking nutrition beside expecting mothers, breastfeeding mothers, and elderly. In this stage of age, they are rapidly growing, including physical growth also the development of psychomotor, way of thinking, and social. The higher the risk factors toward those toddlers, the bigger the chance for them to suffer from malnutrition.[3,4]

Malnutrition can be considered as a serious matter if its prevalence between 20.0-29.0% and considered very high if it reaches the number of ≥30%. In the year 2013, the prevalence of malnutrition reach 19.6% which means Indonesia is far too high from the targeted number and included to the high prevalence. Malnutrition's prevalence in Indonesia for 2013 is 5.7%.[4-6]

The level of parents' knowledge about nutrition is very influencing toward their behavior and attitude in choosing food menu for their children. A good nutrition state will determine the percentage value of the nutritional status nationally. In the other hand, the unawareness about food with good nutrition will cause in wrong choice of food which consists low rate of nutrition and will lead to children with lack of nutrition or even malnutrition.[7-9]

Besides that, malnutrition often caused by unawareness of mother about the way of breastfeeding and giving weaning food that leads to lack of nutrition intake. However, this problem can be prevented if mothers have enough knowledge about the way of maintaining nutrition and controlling their children's food.[3,6]

Beside mothers' age, knowledge is also influenced by educational level and job of the mothers. Mothers without a job can give all their attention to their children and taking care of them. However, from the previous study, not all mothers without job were taking care of their own children. These mothers usually gave less attention to their children. The business and work load at a household are affecting their attention in preparing proper meal for their toddlers.[10,11]

The purpose of this study is to understand the correlation between mothers' knowledge about nutrition and their toddlers' nutritional status (weight/age).

Materials and Methods

This study used a cross sectional design with 37 samples of mothers with their toddlers chosen by a simple random sampling. This study was located at Kirana Posyandu at Pegirian Health Care Center of Surabaya City. This study was then analyzed by a Spearman test to analyze the correlation between mothers' knowledge about nutrition and their toddlers' nutritional status.

Results

The respondents' distribution consisted of mothers with toddler and their toddlers. The total number of respondents is 37 mothers and their toddler.

Univariate analysis

It can be identified from Table 1, that the characteristic of the toddlers were almost half of them aged between 37-48

months old (32.4%) and girls (59.5%).

Based on Table 2, it is known that most of the mothers are between 15-30 years old (51.4%), have basic learning of Elementary School (51.4%) and full time mother (75.7%). Based on Table 3, it is shown that most mothers still have low level of knowledge (56.8%). As can be seen in Table 4, it is shown that most of the toddlers of Kirana Posyandu at Pegirian Health Care Center of Surabaya City have a lack of nutrition around -3.0 up to <-2.0 SD (67.6%).

Bivariate analysis

In addition, Table 5 shows the correlation analysis between mother's knowledge and nutritional status. It can be concluded that the better the knowledge of the mothers, the better the nutritional status of the toddlers (weight/age). Spearman Test analysis showed p value as much as 0.006. This result means that there is a correlation between mothers' knowledge and the toddlers' nutritional status (weight/age).

Discussion

Malnutrition at the age of less than 5 years old can give a hindrance to physical growth and intelligence development. Toddler's period is an essential period for ensuring the next period of growth and development. Toddler experiences a transition period from baby's food to grown up food. Beside, toddlers still do not have an ability to selecting their food thus mother should choose and guide them to choose appropriate foods. If mothers are not able to do so, many health problems will occur and leads to destabilized, or even defected, the nutritional status of the toddlers. Most of toddlers are girl (59.5%) and tends to have a bigger size than the boys.

Most of the mothers are between 15-30 years old (51.4%), have basic learning of Elementary School (51.4%) and full time mother (75.7%). Age is one factor that influences someone mindset and cognitive abilities. Thus the more mature someone is, the more developed his/her comprehension and mindset which leads to better knowl-

Table 1. The Distribution of Characteristics of Toddlers of Kirana Posyandu at Pegirian Health Care Center of Surabaya City on 2017.

No	Toddler's Characteristics	N	%
1	Toddlers' Age		
	12 – 24 Month Old	10	27
	25 – 36 Month Old	6	16.2
	37 – 48 Month Old	12	32.4
	49 – 60 Month Old	9	24.3
	Total	37	100
2	Toddlers' Gender		
	Male	15	40.5
	Female	22	59.5
	Total	37	100

Table 2. The Distribution of Characteristics of Mothers with Toddler of Kirana Posyandu at Pegirian Health Care Center of Surabaya City on 2017.

No	Mothers' Characteristics	N	(%)
1	Mothers with Toddler's Ages		
	15 – 30 Years Old	19	51.4
	31 – 45 Years Old	17	45.9
	46 – 60 Years Old	1	2.7
	Total	37	100
2	Mothers' Education Level		
	Later Education: Academy/University	2	5.4
	High School: Junior/Senior	16	43.2
	Basic School: Elementary School	19	51.4
	Total	37	100
3	Mother's Job		
	Civil worker	1	2.7
	Entrepreneur/Merchant	4	10.8
	Private Sector Worker	1	2.7
	Stay at Home Mother	28	75.7
	Etc	3	8.1
	Total	37	100

Table 3. The Distribution of Score of Mothers' Knowledge about Nutrition of Kirana Posyandu at Pegirian Health Care Center of Surabaya City on 2017.

No	Mothers' Knowledge	N	%
1	High 76-100%	7	18.9
2	Average 56-75%	9	24.3
3	Low ≤55 %	21	56.8
	Total	37	100

Table 4. The Distribution of Toddlers Based on Toddler's Nutritional Status (Weight/Age) of Kirana Posyandu at Pegirian Health Care Center of Surabaya City on 2017.

No	Nutritional Status (Weight/Age)	N	%
1	Over Nutrition ≥+2 SD	2	5.4
2	Good Nutrition -2 up to +2SD	10	27
3	Lack of Nutrition -3.0 up to <-2.0 SD	25	67.6
4	Malnutrition ≤-3.0 SD	0	0
	Total	37	100

Table 5. The Distribution Based on the Analysis of Correlation Between Mothers' Knowledge and the Toddlers' nutritional Status (Weight/Age) of Kirana Posyandu at Pegirian Helath Care Center of Surabaya City on 2017.

| Knowledge | Toddlers' Nutritional Status (Weight/Age) | | | | | | | | Total | |
| | Over | | Good | | Lack of | | Mal | | | |
	Σ	%	Σ	%	Σ	%	Σ	%	Σ	%
High 76-100%	1	14.3	4	57.1	2	28.6	0	0	7	18.9
Average 56-75%	1	11.2	4	44.4	4	44.4	0	0	9	24.3
Low ≤ 55%	0	0	2	9.5	19	90.5	0	0	21	56.8
Total	2	5.4	10	27.0	25	67.6	0	0	37	100

edge he/she gets. The older someone is, the better his/her mental development process, even though in some later stage of age, this development will not rapid as in the adolescent. Age also affects the individual's response, the older the age, the ability of receiving knowledge become lesser.[10,13] Education influence the learning process, thus the higher the level of one's education, the easier one will achieve any information. By having higher education level, one will tend to receive any information from sources, as other people or mass media. On the other hand, the lower the education level ones have, it will give a hindrance in one's knowledge developing and attitude toward new terms that are introduced.[10]

Mother without job or full time mother will have more chances to give full attention to their children and taking care of them. However, in the previous studies there is this fact about stay at home mothers do not necessarily taking care of their children and more of those mothers did not give enough attention for their children. Because of that in a previous study, it was shown that unsuitable consumption of nutrients, especially Energy and Protein, with the body necessity for more than 1-year-old children often happened. One of the factors that influencing the occurrences of protein energy malnutrition, is a busy mother, both mother with steady job or stay at home mother with over-working load. These mothers will have no time to give more attention to their children that leads to their children become sick and lack of attention, and improper feeding which is not done as it should.[14] Mothers with inadequate knowledge about nutrition will choose foods which attractive to five senses and do not considering about the foods' nutritional value. In the other hand, mothers with more knowledge about nutrition will use rational consideration and their knowledge to choose foods from its nutritional value. The inadequate knowledge about nutrition of the mothers in choosing foods and the wrong way of the mothers compiling balanced menu will affect their children's developing process, thus the risk of having malnutrition is very high. Based on this study's result, it is known that most of the toddlers at Kirana Posyandu at Pegirian Health Care Center of Surabaya City have inadequate nutritional status of -3.0 up to <-2.0 SD (67.6%). Nutritional status is one of the factors which determine the human resource and life quality. Thus, the nutrition improvement program is aiming the increasing of nutrition quality in the food consumption, to gain nutritional status development in the society. The assessment of nutritional status can be done using anthropometry. This assessment is done in order to see the imbalance between energy and protein.[15] There is a correlation between mother's knowledge about nutrition and toddler's nutritional status using weight/age index. Previous study stated that there is a meaningful correlation between the mother's knowledge about nutrition and her toddler's nutritional status in Rajabasa Indah Health Care Center at Rajabasa Raya Urban-village of Bandar Lampung (p=0.000). One of the factors which influence the nutritional status of a toddler is his/her parent's knowledge in choosing and giving food, because parent's knowledge affects the way the parent capability of providing foods for his/her toddler, consuming food according to the right nutrition, choosing food type, also prioritizing food among the family.[16,17] The knowledge that related to health problems will affect the occurrence of health disorders to certain groups. The knowledge about nutrition aspect consist of food and nutrition (understanding, type, function, source, and the effect of lacking), food/nutrition for baby (breast milk, weaning foods, age stages for applying, and type), food and nutrition for toddler, children health, also knowledge about nurturing children. The lack of knowledge about nutrition caused the decreasing ability in applying information for daily life and is one of the causes of nutritional disorder. Thus, the better the mother's knowledge, the better the toddler's nutritional status (weight/age). It can be interpreted that the better the mother's knowledge, the better their attitude towards choosing food and the toddler's nutritional status (weight/age).[18-21]

Conclusions

It can be concluded that there is a correlation between mother's knowledge about nutrition and toddler's nutritional status using weight/age index and average as the result yield p=0.006 and α=0.01 (p<0.01). The lack of knowledge about nutrition caused the decreasing of the ability in applying information for daily life and is one of the causes of nutritional disorder. Thus, the better the mother's knowledge, the better the toddler's nutritional status (weight/age).

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