

## Perception of Mothers on Adequate Nutrition

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### Abstract

**Background:** Malnutrition in children less than 5 years old persists around the world. In West Java and one of the districts of West Java (Sumedang), the prevalence of malnutrition is about 18.5% and 15.8% respectively. Numerous factors can lead to child malnutrition. Difficulties in availability, accessibility, acceptability and quality of food can be contributing factors. A good perception of mother on adequate nutrition can improve children's nutritional status. This study was conducted to study the perception of mothers with children 2 to 5 years old on adequate nutrition.

**Methods:** Most of the respondents had good perception on the aspect of adequate nutrition. Results showed perception on availability was 83.8%, physical accessibility was 97.1%, economical accessibility was 98.6%, information accessibility was 84.8% and acceptability was 81.0%. However, perception of respondents on good quality nutrition for the main meal and additional food was still poor. Moreover, there are taboos for eating shrimp and watermelon. Additionally, children were given snacks in large amount.

**Results:** There was a strong correlation between mid-upper arm muscle area/size and muscular strength (correlation coefficient 0.746). Moreover, the higher the Body Mass Index, the stronger the muscle strength was to some point. If the BMI was more than 25 kg/m<sup>2</sup>, this findings did not occurred.

**Conclusions:** This study reveals that the perception of mothers on good quality food is poor regardless the good results on availability, accessibility and acceptability. [AMJ.2017;4(1):87-93]

**Keywords:** Acceptability, accessibility, availability, nutrition

### Introduction

The deaths of children under 5 years old due to malnutrition still persist.<sup>1</sup> Malnutrition is a life-threatening condition that needs special attention. In Indonesia, the prevalence rate of malnutrition in children under five years old is 22.7% and in West Java about 18.5%. Sumedang, a district in West Java where the study was carried out, the percentage of malnutrition is 15.8%.<sup>2</sup>

In another way, adequate nutrition is very crucial for children in particular for the under five years old children for early brain development.<sup>3</sup> Inadequate nutrition can affect the overall health of a child including the intellectual development as well as the rate of motor development and rate of physical growth. Isabelle<sup>4</sup> highlighted that under-nutrition children in Indonesia are the major

contributing factor that affects the growth and development.<sup>4</sup>

An inadequate nutrition may be a result of less food stock availability and accessibility of nutrition due to the economic status of the family. Based on a study, most of the children from low income families in developing country are the victim of malnutrition.<sup>5</sup>

Besides, lack of knowledge of rights on nutrition due to improper information delivery to mothers can be another factor lead to malnutrition.<sup>6</sup> Education is one of the most important resources that enable women to provide appropriate care for their children, which is a critical determinant of children's growth and development.<sup>6</sup>

Moreover, the available food source should be acceptable in the cultural traditions of the family and be of high quality so that the consumer can get good and satisfying food.<sup>7</sup>

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The responsibility of children in malnutrition condition usually goes to the family, especially to the caregiver and to the community. The objectives of this study was to identify the perception of mothers with children 2 to 5 years old on adequate nutrition.

## Methods

This study was carried out in Jatinangor, Sumedang West Java from October to November 2013. The rapid survey was performed on mothers with children 2 to 5 years old in 30 Posyandu around Jatinangor. Cluster sampling was used to select 30 Posyandu from 3 villages. The mothers who were willing to participate in the study were selected as the research subjects. In every Posyandu, seven respondents were chosen which summed up to 210 respondents in total from 30 Posyandu.

The respondents were informed consent on the procedure of the study. The questionnaire

on rights to optimal nutrition consisted of four main criteria; availability, accessibility, acceptability and quality.<sup>8</sup> Components of availability were the overall availability of source of food, source of carbohydrate, protein, fat, vitamins and minerals. Components of accessibility were the physical/geographical, economical (affordability) and information availability. Moreover, acceptability was defined as there were taboos or no taboos on certain food. Quality was determined by some components, namely the source of children's meal, frequency of main and additional meals per day, frequency of snacks per day, and calorie consumption per day according to *Angka Kecakupan Gizi orang Indonesia*. The answering of the questionnaire was carried out by interview method.

The data collected was analyzed using computer software. The results were performed using tables.

**Table 1 Characteristics of Respondents**

Variable	n (%)
Mother's education status	
Elementary	43(20.5)
Junior High School	82(39.0)
Senior High School	78(37.1)
Diploma	2(1.0)
Bachelor	4(1.9)
Master	1(0.5)
Father's occupation	
Government worker	1(0.5)
Labor	95(45.2)
Security	2(1.0)
Driver	2(1.0)
Private	40(19.0)
Business	65(31.0)
Civil servant	5(2.4)
Mother's occupation	
Labor	6(2.9)
Civil servant	3(1.4)
Private	18(8.6)
Business	12(5.7)
Housewife	171(81.4)

**Table 2 Availability and Types of Food**

Variable	n (%)
Availability of all kinds of food	
Yes	176(83.8)
No	34(16.2)
Types of food source available	
Carbohydrate	
Rice	120(57.1)
Noodle	67(31.9)
Bread	55(26.2)
Potato	89(42.4)
Protein	
Chicken	120(57.1)
Beef	56(26.7)
Fish	35(16.7)
Egg	135(64.3)
Tofu	130(61.9)
Tempe	156(74.3)
Milk	70(33.3)
Fat	
Oil	113(53.8)
Sausage	89(42.4)
Cheese	34(16.2)
Vitamins and mineral	
Vegetables	108(51.4)
Fruits	87(41.4)

## Results

The subjects were apparently healthy men. The minimum level of education of the subjects was elementary school and maximum level was of Masters. The occupational background showed various jobs listed such as labor, civil servant, private, and business; in addition the majority of the respondents were housewives (Table 1).

There were all kinds of nutrient from carbohydrate, protein, fat, vitamin and minerals. There were varieties of food from every food class as mentioned in Table 2.

Most of the sources of carbohydrate were from rice and potato. In terms of protein, most of its sources were tempe, tofu, eggs and chicken. The source of fat was from oil and

most of the source of vitamins and minerals was from vegetables.

Furthermore, one of the components of adequate nutrition according to the right to health was accessibility of the source of food, which consisted of physical/geographical, economical and information accessibility. This study discovered that most of the mothers did not have any difficulties to access the source of food to fulfill their children's nutrition, except for buying beef (Table 3).

In terms of nutrition information, most of the place where mothers could gain its information was Posyandu, followed by Puskesmas.

Regarding perception of taboo on food, there were 7 respondents who answered there were special taboos like taboos on consuming

**Table 3 Accessibility of Food**

Variables	n (%)
Perception on physical/geographical accessibility	
Yes	204(97.1)
No	6(2.9)
Distance of food source from house	
≤ 1 km	183(87.1)
>1km	27(12.9)
Transportation to reach food source	
Walk	146(69.5)
Vehicles	43(20.5)
Both (walk and vehicle)	21(10.0)
Perception on economical accessibility	
Yes	207(98.6)
No	3(1.4)
Food that cannot be afforded	
Beef	170(81.0)
Chicken	21(10.0)
Milk	59(75.7)
Information accessibility	
Yes	178(84.8)
No	32(15.2)
Types of information	
Nutrition	103(57.9)
Health	75(42.1)
Source of information	
Posyandu	81(47.2)
Midwife	19(10.7)
Puskesmas	29(16.3)
Internet	3(1.7)

watermelon (6 respondents) and shrimp (1 respondent) (Table 4). However, another 33 respondents had perceptions that there were taboos on food such as spicy food, chocolate, cold water and sweet. It could be said that the result was contradictory since it was only a belief by their family and it was not culturally inherited.

The food given to children from 2 to 5 years old were poor in quality (Table 5). This was because 175 respondents out of 210 respondents gave snacks to their children, and

the frequency of two times and more of snacks per day was about 83.2% which was quite high. Moreover, after the calculation of calorie consumption per day according to the Angka Kecakupan Gizi orang Indonesia, almost all of the children had not have the standard calorie intake as it should be according to Indonesian standard.

## Discussion

Based on the study conducted in 3 villages in

**Table 4 Acceptability of Food**

Variable	n (%)
Food taboo	
Yes	40(19.0)
No	170(81.0)
Types of food taboo	
Shrimp	1(14.3)
Watermelon	6(85.7)

Jatinangor, Sumedang the result showed that mothers were having a good perception on availability, physical accessibility, information accessibility and acceptability of food for their children.

Availability is sufficient quantity of goods or services. Food is considered as available when there is an existence of all classes of food such as carbohydrate, protein, fat, vitamin and mineral. In this study, the type

**Table 5 Quality of Food**

Variable	n (%)
Source of meal	
Cooked by mothers	201(95.7)
Food stall/Warung	9(4.3)
Frequency of main meal per day	
Once	1(0.5)
Twice	54(25.7)
Three times	155(73.8)
Frequency of additional food per day	
Once	70(35.7)
Twice	92(46.9)
Three times	42(21.4)
Four times	3(1.5)
Five times	3(1.5)
Frequency of snack per day	
Once	26(14.5)
Twice	62(34.6)
Three times	58(32.4)
Four times	7(3.9)
Five times	16(8.9)
Six times	6(3.4)
Calorie consumption per day (main meal and additional food according to the age and average value from <i>Angka Kecakupan Gizi orang Indonesia</i> <sup>9</sup> )	
Poor	108(94.3)
Normal	12(5.7)

of food in Indonesia was listed according to the classes and the percentage of availability was calculated. Results showed there was availability of food source since at least one kind of food was available from each class of food. About 83.8% of respondents were having a good perception on availability.

Accessibility can be defined as the ability to reach or all kinds of services and products.<sup>8</sup> The second variable studied was perception on accessibility of food source. The distance of food source from the house of the respondent ranged between less than or equal to 1km and more than 1km. The result obtained was 87.1% of respondents were having food source less than or 1km away from their house, and only 12.9% was more than 1km.<sup>2</sup> Accessible distance according to *Riset Kesehatan Dasar* (RISKESDAS) is less than or equal to one km. Perception of respondents on physical accessibility could be concluded as good since approximately 97.1% of respondents stated that according to their understanding it was easy to access the food source.<sup>2</sup>

Economic accessibility is a condition where respondents are able to purchase food stuff from all classes of food even though there are certain food such as beef, chicken or fruits which they cannot often purchase since the price is beyond their affordability. The socioeconomic status of the family does affect the nutritional status of the children.<sup>10</sup> In general, the respondents had a good perception on economic accessibility since approximately 98.6% of respondents stated that they could afford to buy the majority of the food.

Information accessibility is achieved when respondents have or get knowledge on adequate nutrition for their children. Good quality food contains nutritious food which is equivalent to the need of the person according to the body weight or an average value as available in *Angka kecakupan gizi 2004 bagi orang Indonesia*. For children from 2 to 5 years old the average amount of calorie needed is 1000 to 1550 kcal per day. Approximately 84.8% respondents got information for nutrition and only 15.2% did not get any information for adequate nutrition. Lack in accessibility to information on adequate nutrition can be a factor for undernourishment or over nourishment in children.

In addition, for acceptability of food 81.0% had the perception that there was no taboo and only 19.0% had taboo. Approximately 7 respondents stated that there are taboo to watermelon and shrimp. Based on previous studies, there is existence of taboo on pregnant

mothers and there is no information on food taboo for children.<sup>11</sup>

Good quality of food composed of an adequate and a well-balanced diet containing the needed nutrients in the correct amount and number of serving according to the age. Furthermore, the frequency of main meals suggested to be given to children 2 to 5 years old is 3 times daily and additional food twice daily. In this research the frequency of 3 times of main meal was 73.8% and for additional food with frequency of 2 until 5 times was 66.7%. Another aspect studied was the consumption of snacks among children 2 to 5 years old. From the total of 210 respondents, 85.2% respondents stated that they gave snacks to their children. Even though snack is poor in nutrition but the amount of calorie in it is sufficient for the daily need of the children. This result provided information that even though the calorie from the main meal and additional food were insufficient but snacks could provide and fulfill the daily calorie requirement in these children.

The limitation of this study is the nutritional status of the children was not studied. Only observation and verbal evidence from health care workers in the posyandu were obtained for nutritional status. The researcher did not measure the nutritional status of the children due to restriction of time and the large sample size. Lack of information on nutritional status caused the researcher was unable to correlate the relationship between under-nutrition and aspects of rights to health.

The conclusion of the study from the 4 aspects studied on rights to health for adequate nutrition, the perception of respondents are overall good. The respondents have achieved good perception on availability, physical accessibility, economic accessibility, information accessibility and acceptability of food. However, for good quality of food the respondent's perception is considered poor. This can be due to lack of exposure on the disadvantage of consuming snacks.

A further study is suggested to be conducted to assess the relationship between the nutritional status of children 2 to 5 years old and aspect of rights to adequate nutrition.

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