

FOOD HABIT AMONG ELEMENTARY SCHOOL CHILDREN IN URBAN BOGOR

Evy Damayanthi^{1*}, Cesilia Meti Dwiriani¹, Lilik Kustiyah¹, and Dodik Briawan¹

¹ Department of Community Nutrition, Faculty of Human Ecology, Bogor Agricultural University, Bogor, West Java, Indonesia 16680.

* Corresponding Author: Department of Community Nutrition, Faculty of Human Ecology, Bogor Agricultural University, Bogor, West Java, Indonesia 16680. Telp: 0251-8621258; Facs: 0251-8622276, Email: evyimam@yahoo.com

ABSTRACT

Food habit strongly predicts individual nutritional status. It is largely influenced by family food habit and family socioeconomic, partly by nutrition education learning in the school. Objectives of this study were to analyze elementary school children eating habit and examine whether it relates to family socioeconomic and nutritional status. One hundred elementary school children, and their mother, from one school in urban Bogor were chosen purposively according to SIBERMAS Program criteria (i.e. grade 4th and 5th, morning school, having UKS program and not having canteen). Self administered, structured pre-coded questionnaire were used to collect the data. Nutritional status was assessed using weight and height, and body mass index for age (BAZ) and height for age (HAZ) were then calculated using AnthroPlus software developed by WHO (2009). School children were 8-11 years old (mean 9.37 ± 0.66 years), more girls (54%), and mostly had normal nutritional status using both indexes (72% for BAZ and 95% for HAZ). School children were commonly from middle class as indicated by father education (sarjana) and mother (senior high school). Almost all school children (99%) knew breakfast was important and 81% of them ate breakfast. Only 32% school children brought lunch box everyday although 92% stated their habit to bring lunch box to school. Buying snack in school was also common among school children. Generally school children ate rice 3 times a day (2.95 ± 0.97) with fish, meat, chicken (2.47 ± 1.14), tempe and tofu (2.22 ± 1.10), vegetables (2.25 ± 0.76) and fruits (2.37 ± 1.31). There was a tendency overweight and obese school children eat more rice although statistically not significant. On average, school children drank milk more than twice daily (2.34 ± 0.98), plain water more than 7 glasses daily (7.34 ± 4.10), exercise 3 times weekly (3.02 ± 2.16) and no difference were observed between nutritional status and family socioeconomics. School children food habit were strongly supported by mother behavior especially in providing breakfast, lunch box and guiding their children in choosing snack food. School children from middle class in urban Bogor had relatively good food habits which were supported by mother behavior. This study found no relationship between family socioeconomic and nutritional status on school children food habit.

Key words: food habit, nutritional status, elementary school children.

INTRODUCTION

In early 1950's, government introduce a slogan named *4-healthy-5-perfect* to guide people to consumed nutritious foods to achieve better nutritional status. Globalization era has influenced community lifestyle and resulting in gradually changing in food habit which also affect trend of nutrition and health problems. Along with lifestyle changing and the development of science, in 1995, slogan of 4-healthy 5 perfect is revised to become *balanced dietary guideline*. The guideline provides information on the quantity and the balance of food intake along with advices for healthy life style, such as taking 8 glasses of drinking water daily, doing regular exercise,

using iodized salt, limiting cigarette smoking and alcohol drinking and reading the label before buying packed of processed food. Yet, after more than a decade, the new guideline was very little acknowledged and improperly understood. For this reason, we develop activity, as part of multicenter study, to analyzed elementary school children knowledge, attitude and practices on balance diet in order to develop a model of information, education and communication (IEC) for intervention. We using the data to assess school children eating habit and examine whether it relates to family socioeconomic and nutritional status.

METHOD

The design of this study is a cross sectional study and is a part of 10 similar multi-center studies. The study was conducted in two elementary public schools at urban Bogor, West Java. One hundred elementary school children, and their mother, from one school were chosen purposively according to SIBER-MAS Program criteria (i.e. grade 4th and 5th, morning school, having UKS program and not having canteen). Data on school children food habits and mother practices on preparation of food for their children were collected using self administered and structured pre-coded questionnaire. Mother practices in dealing with children food were also collected using self administered questionnaire.

Nutritional status of the school children were assessed using weight and height. Body weight was measured by digital scale (BOSO) with precision of 0.1 kg, stature was measured using microtoise with precision of 0.1 cm. Weight for age (WAZ) only calculated for those aged 8-10 years, while body mass index (BMI) for age (BAZ) and height for age (HAZ) were calculated for all school children. Those indexes were calculated using AnthroPlus Software developed by WHO (2009).

RESULT AND DISCUSSION

Elementary School Children Characteristics

The age of one hundred school children used in this study are ranged between 8 and 11 years old (mean 9.37 ± 0.66 years) and more girls (54%). Proportion of grade 4th and 5th is equal, each are 50 school children. School children commonly from middle class as indicate by father education (undergraduate) and mother (senior high school). The distribution of elementary school children by age, gender, and father and mother education is presented in Table 1.

For those school children aged 8-10 years (n=59), 88% are normal nutritional status, and 12% underweight. Using BAZ and HAZ, most of the school children have normal nutritional status (72% for BAZ and 95% for HAZ), and using BAZ there are 14% of school children categorized as thin, 11% overweight and 3% obese. Meanwhile according to HAZ index there are 5% of school children stunted. The distribution of BAZ and HAZ indexes for all school children and according to gender presented in Figure 1, 2, and 3. Compare to

Risikesdas data (MOH, 2007), the prevalence of thinness and overweight of our school children are lower than national, urban and West Java Province figure. Figure 2 show our school children data have wider curve, indicating a same proportion of those who classify as thin and overweight/obese. Figure 3 show more females students classify as stunted children. Figure 4 show the mean of z-scores of our school children data are in the normal range.

Table 1. Distribution of School Children by Age, Gender, and Parents Education

Characteristics	%
Age (year) (9.37 ± 0.66)	
8	8
9	49
10	41
11	2
Gender	
Male	46
Female	54
Family member	
≤ 4	63.5
≥ 5	36.5
Father Education	
Junior high school	6.3
Senior high school	28.1
Diplom	12.5
Undergraduate	42.7
Postgraduate	9.4
Mother Education	
Elementary	1.0
Junior high school	2.0
Senior high school	44.8
Diplom	24.0
Undergraduate	25.0
Postgraduate	3.1

School children Practices on Food

Table 2 shows that almost all school children know breakfast is important and 81% of them eat breakfast every morning. Only 32% school children bring lunch box everyday although 92% state their habit to bring lunch box to school. Buying snack in school is also common habit among almost all school children (95%). Chicken, egg and fish were consumed frequently/everyday by more than 60% school children, while meat only by 42%. More than 90% student drink milk frequently/everyday, more than 80% eat green vegetables and orange/red-colored fruits frequently/everyday, but only 33 school children state that they were eat more rice than the other food. Those figure shows that the school children have relatively good practices in dealing with food such as breakfast every morning at home eat variety of food for their meals (i.e. rice with side dish, vegetables and fruit) although they eat less rice and frequently buy snack food at school.

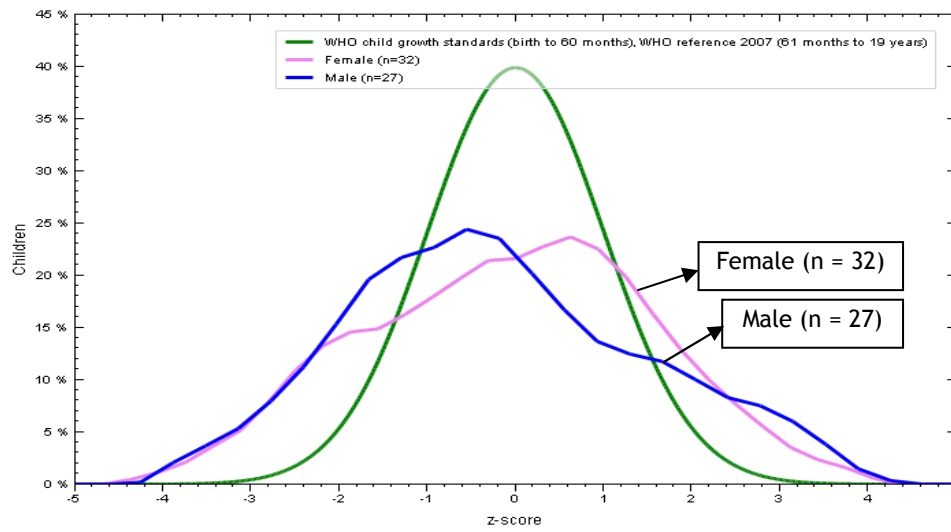


Figure 1. Z-score for 8-10 Years School Children with Indicator Weight for Age

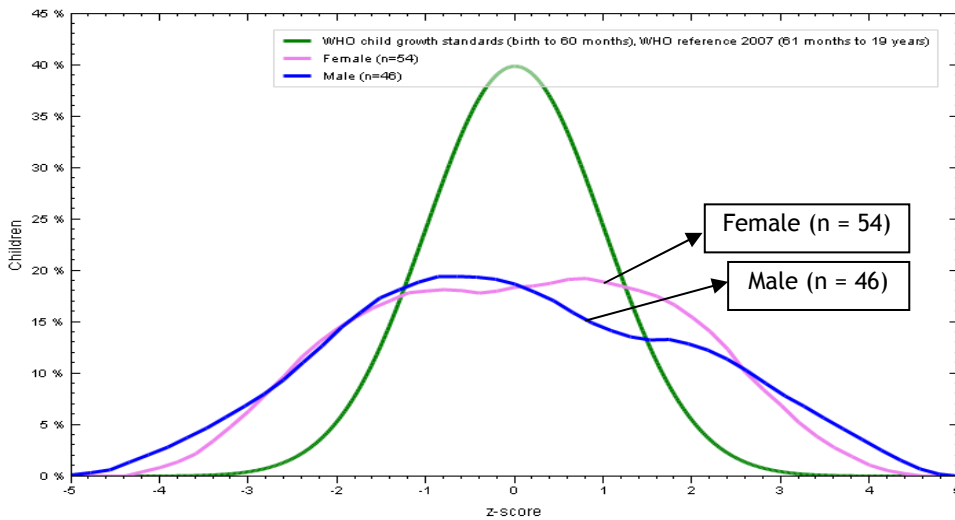


Figure 2. Z-score for All School Children with Indicator Body Mass Index for Age by Gender

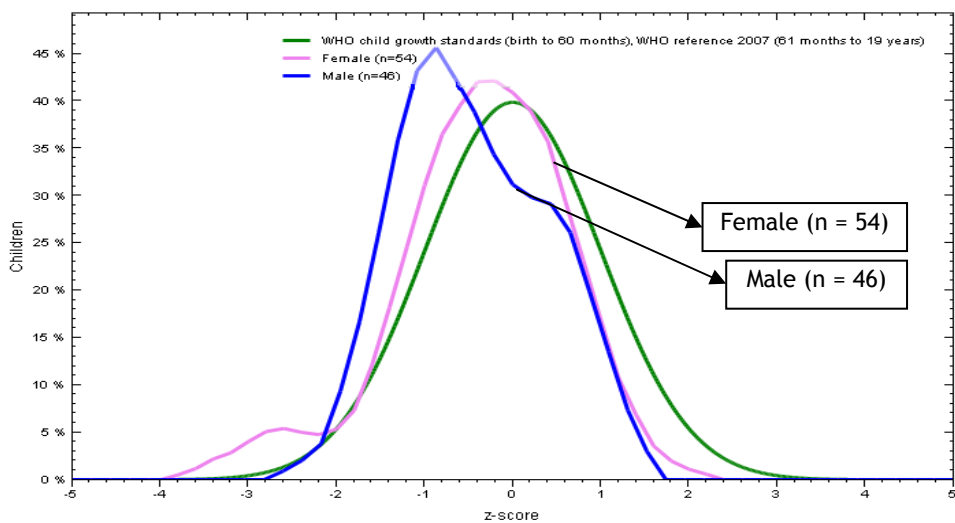


Figure 3. Graphic Z-score for All School Children with Indicator Height for Age

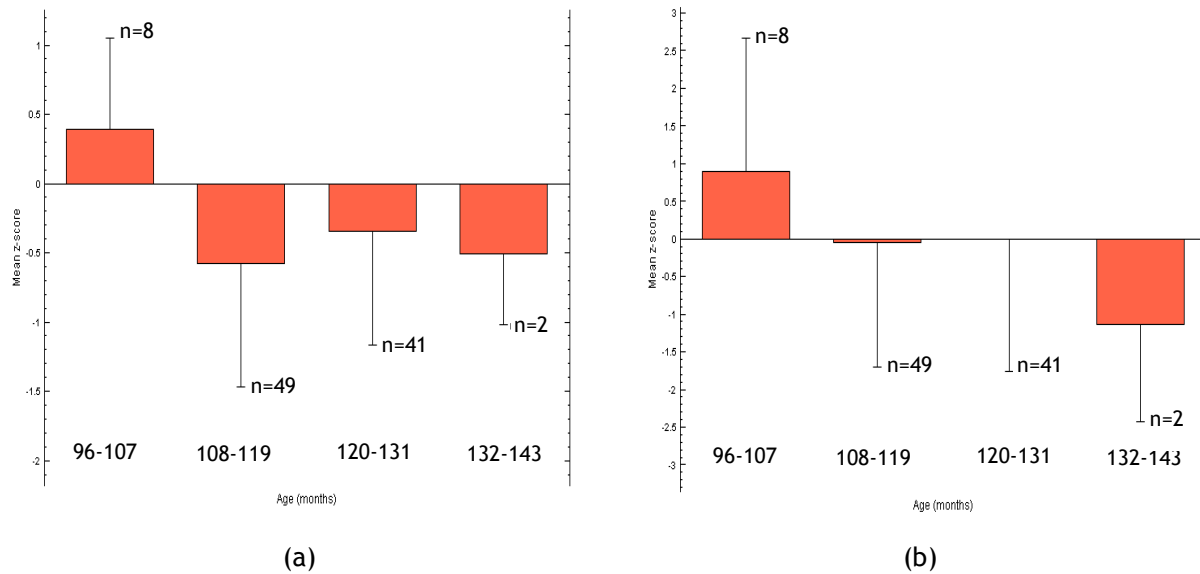


Figure 4. Mean of BAZ (a) and HAZ (b) by Age

Table 2. Practice of Schoolchildren (n=100)

Question	Yes answer (%)
Breakfast everyday	81
Bring food from home everyday	32
Bring food from home frequently	60
Buy food frequently at school	95
I buy food (JAJAN) everyday	21
Eat egg, frequently/everyday	65
Eat chicken, frequently/everyday	80
Eat meat, frequently/everyday	42
Eat fish, frequently/everyday	69
Drink milk, frequently/everyday	91
Eat green vegetables, frequently/everyday	83
Eat orange /red-coloured fruits, frequently/everyday	83
Eat rice more than others	33

When we asked to quantify the school children eating habits, generally s stated they are eating rice 3 times a day (2.95 ± 0.97) with fish, meat, chicken (2.47 ± 1.14), tempe and tofu (2.22 ± 1.10), vegetables (2.25 ± 0.76) and fruits (2.37 ± 1.31) (Table 3).

According to school children nutritional status, there is a tendency of overweight and obese school children eat more rice than the normal one although statistically not significant. Tabel 4 also shows that on average, students drink milk more than twice daily (2.34 ± 0.98), plain water more than 7 glasses daily (7.34 ± 4.10) and exercise 3 times weekly (3.02 ± 2.16). No differences were observed on school children practice between nutritional status and family socioeconomics.

Mother Practices

School children food habit are strongly supported by mother behavior especially in providing breakfast, lunch box and giving vegetables everyday to their children meal and guiding their children in buying snack food (Table 4). The detail of mother advices regarding buying snack food is presented in Table 5.

Table 3. Mean of Food Frequency Consumption in School Children

No	Questions	Mean \pm Sdev
1	How many times do you eat rice daily?	2.95 ± 0.968
2	How many times do you eat vegetables daily?	2.25 ± 0.757
3	How many times do you eat fruits daily?	2.37 ± 1.308
4	How many times do you eat meat/ fish/chicken/egg daily?	2.47 ± 1.141
5	How many times do you eat tempe/tofu daily?	2.22 ± 1.097
6	How many glassess do you drink milk daily?	2.34 ± 0.977
7	How many glassess do you take sweet drink daily?	1.55 ± 0.968
8	How many glassess do you drink water daily?	7.34 ± 4.098
9	How many times do you take exercise weekly?	3.02 ± 2.155
10	How many times do you eat rice with side dish daily?	2.98 ± 0.795

Table 4. Practice of Mothers (n=96)

Questions	Yes (%)
I give my child vegetables everyday	82.3
Does a child need money to buy food?	71.9
A child need breakfast before leaving for school	96.9
Does your child bring food to school?	85.4
Do you give advice about food to buy to your child?	99

Table 5. Mother Advices to Their Children when Buying Snack Food

Mother Advice	%
Don't buy contaminated hazard food (contain MSG, food preservatives, artificial color, mycroorganism)	78.4
Buy hygienic food, nutritious and healthy food	38.4
About food safety	12.1
Don't buy drink that contain iced cubes	8.1
Read food expired date	4.0

School Children Knowledge and Attitude.

Most of school children (92%) recognize that a symbol or figure of balance diet (food pyramid) as a symbol of 4 health and 5 perfect. This condition is supposed that the figure has been introducing by teacher at school or by mother at home. Four healths and 5 perfect concepts is still used as one topic in science lecture. (Source: Science Book for 5th grade, published by Erlangga). Table 6 shows generally school children have good nutritional knowledge. Question about variety of food can be answered correctly by more than 64% students, but when the concept was asking using negative statement, that is no single food has complete nutrient, only 16% answered correct-

ly. This shows that positive question form is better understand by the children. The question of rice can be replaced by noodles, can only be answered correctly by 31% students indicating.

Relationship Between Practice and Attitude

Most of school children (95%) realize that both eat fruits everyday is better and eat vegetable 2-3 times/day. They (87%) also realize that there is no need to eat a lot of sugar or sweet foods. Furthermore they realize that both breakfast will make them easier to learn and walking is healthier than travelling by vehicle (Table 7).

Table 6. Knowledge of School Children (n=100)

Questions	Yes answer (%)
Healthy 4, Perfect 5	92
Variety of food everyday	64
No single food has complete nutrient	16
Eat a lot of fat and oil is not necessary	87
Rice can be replaced by noodles	31
Rice can be replaced by sticky rice	78
Eat spinach or kangkung is better than cabbage	77
Seafood make children smart	91
Salty fish is better than fresh fish	14
Egg is as good as chicken	85
Tempe is as good as chicken	56
Nuts like mungbeans, redbeans, soybeans and peanuts are good for health	91
Sweetener is as good as sugar	19
Drink water at least 4-5 glasses per day	68
Think that drinking milk alone is sufficient to make people healthy	55
Fruits rich of vitamin	99
Cheap fruits like banana, papaya, are not rich in vitamin	89

Table 7. Attitude of School Children (n=100)

Questions	Agree (%)
There is no need to eat lots of sugar or sweet food	87
Eat fruits everyday is better	95
Rice can be replaced by corn	79
Rice can be replaced by bread	87
Rice can be replaced by sweet potato/cassava	79
Eat vegetable 2-3 times/day	95
Cucumber is better than carrot	22
Eat fruit 2 times per week	38
Seafood is as good as meet	85
Eat fish can cause worm infestations	56
Seafood as good as tempe	60
If drink milk no need for other food	29
Always drink sweet drinks good for health	14
Not drink sufficient water can make you sick	82
Exercise once a week is sufficient	43
Walking is healthier than travelling by vehicle.	96
Breakfast will make you easier to learn	98

CONCLUSION

School children from middle class in urban Bogor have relatively good food habits which were supported by mother behavior. This study found no relationship between family socioeconomic and nutritional status on school children food habit.

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