

The Eating and Drinking Habits of Children in Kudus, Central Java, Indonesia

1st Ika Trisanti*
DIII Midwifery Program
Universitas Muhammadiyah Kudus
Kudus, Indonesia
ikatristanti@umkudus.ac.id

2nd Nasriyah
DIII Midwifery Program
Universitas Muhammadiyah Kudus
Kudus, Indonesia
nasriyah@umkudus.ac.id

3rd Ummi Kulsum
S1 Nursing Program
Universitas Muhammadiyah Kudus
Kudus, Indonesia
ummikulsum@umkudus.ac.id

4th Islami
DIII Midwifery Program
Universitas Muhammadiyah Kudus
Kudus, Indonesia
islami@umkudus.ac.id

Abstract—97.7% of children in Indonesia evidently consume less vegetables and fruits but eat more snack and instant drinks. Some of those snacks sometimes contain microbes, additives and harmful substances such as formalin, borax, artificial coloring, flavor enhancer, artificial sweeteners which lead to several illness like typhoid (2.7%), diarrhea (4.9%), hepatitis (1.9%), etc. This study aims to describe the eating and drinking habits of children at Kudus.

This study was qualitative research with a phenomenological method. This study was conducted from July to September 2018 in Kudus in which it involved 12 participants. The sampling technique used was purposive sampling. In-depth interview and triangulation were done to collect the data.

The result of this study stated that not all children were accustomed to having breakfast and they did not carry packed lunch from home. Moreover, schools did not have healthy canteens and the students were not used to washing hands cleanly appropriately. In fact, the children were not used to eat eating vegetables and fruit everyday and at school they brought pocket money to buy snacks and beverages containing lots of sweeteners, artificial coloring, preservatives, borax, and flavor enhancer in which some snacks were eaten using unhealthy sauces and spices. Teachers told the students not to buy unhealthy snacks and beverages, but they kept doing that secretly. Conclusion: the children habits in consuming unhealthy snacks and beverages must be immediately eradicated because it has the potential cause to nutritional disorders and health problems such as malnutrition, obesity and typhoid, sore throat, diarrhea etc.

Keywords— *the children's habit, consume, snacks, beverages*

I. INTRODUCTION

97.7% of children in Indonesia *evidently* consume less vegetables and fruits but eat more snack and instant drinks. All children loves snacks. Snacks (food and beverage) are prepared and sold by sellers. Usually snacks are sold in public places and in schools. Snacks are a type of food or beverage that can be consumed directly. Based on the Regulation of the Minister of Health of the Republic of Indonesia Number. 329

/ Men.Kes / Per / XII / 76 concerning Food Production and Circulation, food is human food or drink, including gum but not drugs. Snacks can be in the form of household processed foods or processed foods. These snacks are produced from the food industry. They can be directly consumed without further processing[1].

Various snacks are sold freely in the school environment. Snacks include meatballs, ice (ice lolly, shaved ice), jelly, snacks (crackers, chips), noodles, various snacks (pempek, bakwan, wet cakes), and colored drinks [2]. Unfortunately, the snacks are not always safe and fit for human consumption. Raw materials of snacks are not always in good quality. This is an effort to reduce production costs even though, it is very harmful for the children[3].

Some of those snacks sometimes contain microbes, additives and harmful substances such as formalin, borax, artificial coloring (Rhodamin B, Methanyl Yellow), flavor enhancer, artificial sweeteners which lead to several illness like typhoid (2.7%), diarrhea (4.9%), hepatitis (1.9%), etc. The study in Bogor found that most of the snacks were contaminated by microbiological and chemical pollution. The additives **consists** consisted of borax, formalin, Rhodamin B and Methanyl yellow, artificial sweeteners, flavoring [4]. These chemicals additives should not be in snacks and beverages. They cannot be decomposed in the body. As a result, these dangerous chemicals will cause organ damage and various kinds of dangerous diseases. [1] [5].

The government has issued Food Law number 18 of 2012 article 75 paragraph 1. Every person who produces food is prohibited using food additives that exceed the prescribed maximum threshold. If it is violated, the person get a punishment that is a maximum 5 years jail or a maximum penalty of Rp 10,000,000,000.00 (ten billion rupiah).[1]. Although it has been regulated but many food sellers are still selling food or snacks that contain dangerous substances.

This study aimed to describe the eating and drinking habits on children at Kudus, Central Java.

II. METHOD

This study was qualitative research using phenomenology method. The study was conducted in Kudus district in July - September 2018. The selection of respondents used a purposive sampling method. The key respondents were 12 students from 2 elementary schools. Other respondents consisted of teachers, parents and food sellers. The criteria for choosing the respondents included: children aged 6-12, willing to be respondents, in healthy condition, often buy snacks and beverages.

Primary data was collected by in depth interviews, focus group discussions, and observations while secondary data was collected by looking at reports and journals. Research instruments are the researchers themselves. The interview guide was prepared before. The researchers used a tape recorder and note book. The data processing included: making records / record transcripts, making data / information classifications, conducting studies, making conclusions / data analysis. Triangulation of information sources was carried out by involving students and teachers.

III. RESULT AND DISCUSSION

a. Breakfast habit

Most of children did not have breakfast. All children did not bring packed lunch to school. Based on the interview, ten children stated that they did not have breakfast because their parents did not have time to prepare breakfast, the breakfast was not attractive, and appetizing, and there was no time for breakfast.

None of them brought packed lunch, only 4 children brought drinks to school such as mineral water or tea. Breakfast is important for children. It gives children enough energy to do activities during at school. A good breakfast consists of variety of nutrients such as carbohydrates, proteins, vitamins and it will be better if it is added with milk. If the children do not have breakfast, then surely they will experience a lack of energy while learning at school. As a result, many children experience anemia and stunting.[6]

Kudus is an industrial city and most of the industries in Kudus are cigarette industries where the workers are mostly women. Most of the workers have to leave home since 5 a.m. because they have to go to work at 6 a.m. Many do not have time to prepare breakfast and only give pocket money to their children to buy food at school. Unfortunately the children do not buy food in the form of rice or bread as a source of energy but they prefer to buy food such as snacks (wafers, sweets, crackers, chips) that are not filling.

Based on interview with parents it was found that there were mothers who prepared breakfast at home but the breakfast prepared was only in the form of rice and simple side dishes such as fried eggs or fried *tempe* and tofu. This caused children to be reluctant to have breakfast because they were less attractive and they felt bored.

Some children said that they were not used to having breakfast because they were afraid of being late for school. Breakfast was actually available at home but they did not want to eat it because they got up too late and there was not enough time for breakfast.

Some children stated that if they ate rice in the morning, it was not tasteful because their stomachs were not hungry and if it was forced, it would make them uncomfortable because their stomachs were too full and they would be easily drowsy.

This condition needs to be addressed immediately because if the habit of children who do not want to eat breakfast still continues, it can affect their health. Actually breakfast can be put in a lunch box and eaten at school but the children felt embarrassed to bring lunch to school. They were afraid of being joke by their friends, considered like as kindergarten children who still carried food supplies to school. The role of parents is very important to provide understanding to children so they want to change the habits of those who leave breakfast in the morning. Consuming a lot of snacks will give negative result, such as decreased appetite, cause various diseases and malnutrition.

b. The existence of a healthy canteen and hand washing facilities

Based on observations carried out at schools, two schools did not have **healthy** canteens. In both schools there was no healthy canteen, because the available canteen did not fit the criteria of healthy canteens. The Criteria for healthy canteen include: 1) there is a supply of clean water for processing food and washing cooking utensils and hands.2) having food storage places that are free of insects and rats.3) there is a closed food storage area. 4) the cashier is not in charge of preparing food, 5) has a landfill.

Snacks were sold by food vendors in the school environment. Types of snacks were instant snacks, various kinds of instant chips, various kinds of biscuits, sweets, and instant drinks). In addition, there were gravy meatballs, sausages, tempura, nuggets, *cilok*, *cilur*, *cilung*, all of which were served using additional spices containing lots of MSG, flavor enhancers (barbecue flavor, roast beef, sweet corn, chilli, etc.), preservatives food and food thickeners. Instant drinks sold contained artificial sweeteners. The price of food and drinks sold was relatively cheap, between Rp.500 and Rp.1,000 per meal. The results of interviews with food vendors, they preferred to sell instant food for several reasons, it tasted good and children liked it. It was also more practical because it did not have to be made and did not easily spoil. The reasons children prefer snacks were there were variety of snacks and they were delicious and cheap.

To reduce prices, many producers added hazardous ingredients to their snacks such as cyclamates, aspartame, etc. They had low responsibility to consumers. They said that if something happens to their consumers (stomach ache or dizziness), that was not their fault. It could be from other places or sellers. Based on their experience, there were no protests about their snacks and drinks. The Schools had lack assertiveness to forbid the sellers produce or sell the harm snacks. They School just gave reprimand or guidance to the sellers. Thus, the Children must be careful in purchasing snacks and beverages. Sellers must give attention to the snacks that they sell and have a big responsibility for the children as a consumer.[7][2]

In fact, there were still many unhealthy snacks found in the school environment. The children still continued to

consume that snacks. The children had lack of knowledge about healthy snacks. Many snacks were fried using the used oil, it can cause throat infection. The school canteens were also not hygienic, most school canteens were near to latrines or sewers. These snacks did not fit food safety requirements. It can be concluded that the quality of food is not good for the health of the body so it is very dangerous for children as consumers. Children are a weak group that get the direct impact from the harms snacks. The parent's knowledge must be improved to protect the children health.

c. The habit of eating fruit and vegetable

There were 11 children that were not used to eating vegetables and fruit. They preferred to eat rice and side dishes without vegetables. The reason they did not like vegetables were because parents were not used to eating vegetables, vegetables were hard to swallow, fruit was not available at home every day, the taste and texture of vegetables were strange. As lack of Consuming vegetables and fruits, many children don't defecate regularly every day. Another problem that occurs if a child lacks of vegetables and fruit is a lack of vitamins, especially vitamins A, C, E which is useful for growing cell, antioxidants and producing red blood. In addition, lack of minerals such as calcium and iron is needed for growth is not good for the children. 97.7% of children consumed less vegetables and fiber because they consumed more carbohydrates and fats. Children were reluctant to consume vegetables because of their shapes and textures that were not attractive to them.[8]

The diet that has been known is a three-day diet with meals in the morning, afternoon and evening. But this diet is not very effective in children because children always move and need more energy intake. If only relying on the diet, it will not be enough to meet the energy and protein needs. Thus the child will meet the energy by consuming the snack without being controlled by parents.[9]

Food for children must be harmonious and balanced. It means that food must be appropriate to the level of child growth, the economic, socio-cultural and religious conditions of the family. Balanced means that the nutritional value must be in accordance with the needs based on age and type of food ingredients such as carbohydrates, proteins, and fats. There are several management of feeding to school children including: trying to have breakfast and drinking milk before going to school, eating food that is brought from home (two hours after studying at school) during break, eating lunch that fits the needs of nutrients on time, **giving** Afternoon snack for children while carrying out activities outside the home, having Dinner on time and drinking milk before going to bed.[10]

Children diet is basically **be** formed by their parents. Parents must give attention to their children's consumption habit. Parents can control and advise what foods should be consumed and what foods should be avoided. Parents need to have knowledge in choosing food for their children to prevent health problems. Children don't like to eat vegetables and fruit. Unfortunately parents cannot persuade children to eat vegetables and fruit. According to the 2014 Research Center for Community Health Research and Development, 97.7 percent of Indonesian children under the age of five

consumed less vegetables and fruits. The habit of not liking vegetables and fruit continued until they were teenagers and adults. In another part of the research, it was stated that 97.1 percent of Indonesians adolescents consumed less vegetables and fruits. However, based on the Food Hope Pattern data, the population of Indonesian fruit and vegetable consumption in 2011 was only 197, 3 grams per day. If it is left unchecked, then the habit of refusing or choosing to eat certain fruits and vegetables will be a phobia known as food neophobia or picky eating.[11][12]

Parents know the management of feeding to their children who are still in school such as monitoring food intake and type of food, determining the amount of food, and promoting children's eating behavior.[13]

The false parental habits **are** not getting used to breakfast, not getting used to providing food that makes children consume more snacks, does not apply the rules of eating hours that make children become irregular in terms of eating time, getting used to flavoring that makes children become accustomed to savory flavors. Busy working parents and lack of free time with children often become a barrier in efforts to provide healthy food for child.[7]

d. Snacks consumed contain a lot of dangerous additives

The types of snacks consumed by children, both food and drinks on average, were instant foods and drinks which contained many additives such as sweeteners, colorants, fats, preservatives and thickeners. The types of food and beverages sold in the school environment included sweets, various kinds of instant snacks, sausages, nuggets, *tempura*, instant drinks, bread and all of them were factory-made. The type of sweetener used was aspartame. Aspartame in the body will be broken down into three substances, namely aspartame acid, phenylalanine and methanol. Methanol in long term in the body will have the same effect as alcohol, which is damaging organs. In addition, aspartame **is** consumed continuously can cause poisoning, cancer, neurological disorders, and mental disorders. The colors that are often found in foods are Rhodamin B and Methanil yellow. The effects of using these dyes are dizziness, nausea, weakness, emotional ease, decreased immunity and cancer. Preservatives used to preserve food are formalin, calcium benzoate, sulfite, sorbet acid etc. This preservative serves to inhibit the growth of fungi and bacteria in food and delay changes in taste and color of food. The effect of using preservatives continuously is to cause asthma, respiratory problems, nausea, decreased immunity, digestive disorders. Food thickeners for gravy meatballs, *cenil*, rice cake, many noodles **is** borax. Borax is dangerous because it will cause nerve and brain disorders, liver and kidney disorders.

Some ingredients that are prohibited from being used in food, according to Minister of Health of the Republic of Indonesia Number 33 / MENKES / PER / VI / 2012, are as follows: Boric acid and its compounds (Boric acid), Formalin (Formaldehyde), Nominated vegetable oils (Brominated vegetable oils), Chloramphenicol (Chloramphenicol), Potassium chlorate (Potassium chlorate), Diethylpyrocarbonate (Diethylpyrocarbonate, DEPC), Nitrofurazon (Nitrofurazone), Dulkamara (Dulcamara), Salicylic acid and its salts (Salicylic acid and its salt), Dulsin (Dulcin), Potassium bromate (Potassium bromate), Cocaine (Cocaine), Nitrobenzen (Nitrobenzene), Cinnamon

anthranilate (Cinnamyl anthranilate), Dihydrosafrol (Dihydrosafrole), Tonka seeds (Tonka bean), Calamus oil (Calamus oil), Tansy oil, Sasafras oil (Sasafras oil) [1]

Additional ingredients that are often in snacks include coloring, artificial sweeteners, and preservatives, flavor enhancer, emulsifier, steamer, thickener, acidity regulator. 1) Coloring. Providing an attractive impression to consumers can also harmonize food colors and stabilize colors. It also can cover discoloration during the processing and overcome color changes during storage. Natural coloring permitted by Republic of Indonesia Minister of Health Regulation No. 722 / Menkes / Per / IX / 88 are in the form of caramel, beta-carotene, chlorophyll, and curcumin. Meanwhile, Prohibited and very dangerous coloring agents, are methanil yellow and rhodamin B. 2) Artificial sweeteners. Artificial sweeteners are used to make taste sweeter, help to sharpen acceptance of sweetness and lower prices. It also does not contain calories and is suitable for people with diabetes (diabetes). The examples of Artificial sweeteners are saccharin, sorbitol and aspartame, while cyclamates in America have been banned. 3) Preservatives used such as: Sodium (potassium Benzoate), for example fruit juice and soft drinks; Propionate (acid / potassium), for example processed bread and cheese; Nitrite (potassium / sodium), for example processed meat; Sorbat (potassium / calcium salt), for example margarine; Sulfite (potassium / sodium bisulfite salt), for example, pieces of fried potatoes and frozen shrimp.

While preservatives are dangerous and very prohibited, such as: Borax, usually on meatballs, wet noodles, banana molen, lempur, buras, siomay, rice cake, ketupat, and dumplings. It makes food more elastic and improve appearance. Borax is used for antiseptics and germs. If borax is given added in meatballs and rice cake it will make the meatballs / rice cake very chewy and durable, while crackers containing borax when fried will expand and soft and have a nice and crunchy texture. Worse, foods that have been given borax with those that are not or are still natural, are difficult to distinguish if only with the five senses, but special tests for borax must be carried out in the laboratory. Formalin in tofu and wet noodles is one of the examples. Formalin is actually used to preserve corpses and organs. 4) Flavor enhancer. The material used is vetsin. Vetsin contains MSG (MonoSodium Glutamate). Glutamic acid can make food more delicious. 5) Emulsifier, Steamer, Thickener. It is used to stabilize emulsions from fat and water. The product used these chemicals remains stable, does not melt, separate between the fat and water and has a compact texture. The ingredients used are alginate, alginate, dextrin, gum, caragen, lecithin, CMC, pectin and starch acetate. The ones that used these ingredients are ice cream, ice lolly puter, sardine sauce and so on. 6) Antioxidants. Antioxidants are used to prevent rancidity, for example broth, jelly and frozen pieces of fries. 7) Acidity regulator. Acidity regulators are used to make food and drink more acidic, alkaline, or to neutralize food

e. Teacher's actions

The results of the interview with the school teachers showed that the teachers had reminded the students not to buy snacks that were dangerous because they could interfere with their health but the students still bought them secretly. The procurement of healthy canteens was constrained by costs

because at this time the school was not allowed to collect fees from students so that currently the school canteen was running with minimal conditions. The presence of mobile food vendors has been banned but traveling sellers always came to school every time and were very difficult to be prohibited.

The school principal and teachers were participated in providing protection, by providing guidance through activities that had been made in school, and monitoring children who **sold and bought** in the school environment. They also monitor snacks sold in the canteen. The school also always reminded children to maintain their health by not eating haphazard snacks. Even though it has been reminded but children were snacking without the teacher's knowledge. [14][15]

IV. CONCLUSION

The types of food and drink consumed by children during school are very diverse but most of them are instant foods and beverages that contain many harmful substances such as sweeteners, coloring, fats, preservatives chemical. Consumption of unhealthy snacks continuously causes health problems such as respiratory problems, digestive disorders, and nervous disorders. The habit of consuming healthy snacks by children must be addressed immediately by involving children, parents, teachers and food vendors so that a mutual agreement can be reached to prepare, supervise and consume only the types of healthy snacks for children.

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