

# Reviving School Food Safety Teams at Elementary Schools Based on the Quality of Street Foods

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**Keywords:** Children, E.coli, School food, Food safety.

**Abstract:** The snacking habit of street food among school children has become a general habit in all socio-economic levels in society. Street foods are expected to contribute energy and other useful nutrients for growing school children (Manalu, 2016). The objective of this study was 1) to assess the quality of street foods in Elementary School with the indicator of Escherichia coli bacteria and 2) to recommend revitalising the school food safety team. The type of research was an observation that is descriptive with a cross-sectional design. The location was chosen based on the highest prevalence rate of diarrhoea in Surabaya. The research sample consisted of 109 street foods (including beverages) in 4 Elementary Schools. The results showed there were 42 (38.5%) food and beverages contaminated with potentially pathogenic E.coli bacteria and 4 (3.7%) food and beverages contaminated with pathogenic E.coli bacteria. It is expected to establish or revive the School Food Safety Team (TKP) to ensure that the food and drinks sold in the canteen and around the school are safe and healthy to consume.

## 1 INTRODUCTION

School children are the next generation and strategic assets for development. Thus they are expected to be healthy, intelligent and productive. The quality of children as the next generation is determined by two factors, namely education and health (Syahrul, 2017<sup>a</sup>).

The snacking habit of street foods among school children has become a general habit in all levels of society. This snacking habit is very popular among school children and very difficult to eliminate because the students need a food intake while at school. Snack on elementary school children contributes 25% of daily energy with the morning snacking period contributes the least energy. The foods most commonly consumed are water, snacks and sweets (Dantong, Wang, et al., 2016). In Indonesia, streets food can contribute 10-20% nutrients toward student daily consumption. Street food divide into main dishes, snacks and beverages (Syafitri, Y., et al. 2009). Street foods generally do not fulfil health standards and have more risks to do with containing chemical or biological substances (February, 2010). On the other hand, street foods are

also beneficial for children's nutrition if they choose healthy and proper food.

The objective of this study was 1) to assess the quality of street food at Elementary Schools with an indicator for Escherichia coli bacteria and 2) to recommend reviving the school food safety team.

## 2 METHOD

The type of research was observational and descriptive with a cross-sectional design. The location was chosen based on the highest prevalence rate of diarrhoea in Surabaya. The research sample consisted of 109 street foods (including beverages) in 4 Elementary Schools. Each type of food was sampled up to 100 g and beverages up to 100 ml. The data was analysed descriptively to describe the study variables. The school criteria was that it had a canteen. The definition of a canteen is a place where food is provided in an elementary school where all of the kids go to eat.

### 3 RESULT AND DISCUSSION

#### 3.1 Location of Street Food

The types of street food purchased at school were main meals, snacks, beverages and fruits. Most of the children buy snacks and beverages. The various types of street foods are growing rapidly in Indonesia (Winarno, 2004). Street foods are both diverse and nutritious in order to improve the nutritional quality of the food consumed. The location of the street food being sourced was the school's canteens, stalls in the schools, stalls outside of the schools and food vendors.

#### 3.2 Quality of Street Food

Details of the number of food and beverages number are: 28 samples from SD Negeri Kupang Krajan I, 31 samples from SD Negeri Petemon X, 24 samples from SD Negeri Sidotopo VIII and 26 samples from SD Negeri Sidotopo I.

The food and beverage samples were examined at the Nutritional Laboratory Faculty of Public Health, Airlangga. From the laboratory test results, there were 42 (38.5%) items of food and beverage contaminated with potential pathogenic *E.coli* bacteria and 4 (3.7%) items of food and beverage contaminated with pathogenic *E.coli* bacteria. The complete results can be seen in Table 1.

Table 1: The Laboratory Test Results

Type of Food and Beverages	Potential Pathogenic <i>E. coli</i>	Pathogenic <i>E. coli</i>
School canteen :		
- candied mango	+	-
- fried tempe	+	-
Stalls in school :		
- ice tea	+	-
- ice red syrup	+	-
- ice wawan pink	+	-
- ice marimas	+	-
- intestines satay	+	-
- noodle	+	-
- omelet rolls	+	-
- green beans ice	+	-
- coconut milk ice	+	-
Street vendors :		
- fried banana	+	-
- meatball and sauce	+	-
- ice cao	+	-

Type of Food and Beverages	Potential Pathogenic <i>E. coli</i>	Pathogenic <i>E. coli</i>
Stalls outside school:		
- pop ice	+	+
- coconut ice	+	-
- ice "kopyor"	+	-
- soy milk	+	+
- Ice cao	+	-
- ice manado	+	-
- ice saridele	+	-
- ice marimas	+	-
- glasses noodles	+	-
- ice tea	+	+
- ice jelly	+	-
- ice milk	+	-
- fried meatball and tofu	+	-
- shrimp sauce	+	-
- peanuts sauce	+	+
- cireng sauce	+	-
- ice syrup		

Note: (+): positive *E. coli* and (-): negative *E. coli*

#### 3.3 Food Safety Team at Primary School

Elementary school age (about 6-12 years old) is the age where child really love to play and buy snacks at the school and in the area around the school. Therefore, there are many health problems that could infect elementary school-aged children (Syahrul, 2017<sup>b</sup>). A health problem that often occurs is food-borne diseases. Food-borne disease is a disease caused by consuming food and/or drink that is contaminated due to a variety of microorganisms or microbial pathogens (Cary and Deepak, 2000).

By considering the condition of the snacks that are often purchased by children, including the high-risk conditions, it is advisable for parents to set an example by choosing healthy and safe snacks when going out with the children and when bringing gifts after work. Teachers also need to educate children about safe and healthy snacks.

The problem of school children encountering street food sellers in terms of personal hygiene, how to manage health, the manner of presentation, storage, the quality of the food and the habits of the child are still not good. Policies related to management and supervision in schools has been carried out from the centre of government (National Food and Drug Board, Ministry of Health, 2016). It is expected to establish or revitalise the School Food Safety Team (TKP) to ensure that the food and drink

sold in the canteen and around the school are safe and healthy to consume.

The role of the School Food Safety Team is to 1) do data collection from the food vendors and to sample the available kinds of food and beverage; 2) socialise food security for the school community; and 3) monitor the implementation of good food handling, processing and serving in the school canteen, include in the outer area around the school (National Food and Drug Board, Ministry of Health, 2013).

#### 4 CONCLUSIONS

The results of laboratory tests indicate that many food and beverages of school children contaminated with *E. coli* bacteria. So it's a suggestion for school, it is expected for them to establish or revive the School Food Safety Team (TKP) to ensure that the food and drink sold in the canteen and around the school are safe and healthy to consume.

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