



Sanitation and Environmental Health in Traditional Snack Food Trader of Elementary School, Buntusu Village, Makassar City

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ABSTRAK

Many snacks do not meet health requirements and therefore threaten children's health. Most school children's snacks are traditionally processed foods sold by street vendors. The aim of this research is to determine the implementation of hygiene and sanitation among traditional snack food traders in the Buntusu Village Elementary School environment, Makassar City. This research is a descriptive study designed based on a cross sectional approach. The population in this study were all traditional snack food traders in the Buntusu Village Elementary School area, Makassar City. So it can be concluded that the distribution of respondent characteristics includes 73.9% of respondents aged 24-54 years, 52.2% of respondents are male, 47.8% of respondents have worked as traditional snack food traders for 1-10 years, There were 4.3% of respondents with the highest level of education, namely graduating from college, and 8.7% of respondents with the lowest education, namely not attending school. And 52.2% of respondents had good personal hygiene, while the remaining 47.8% of respondents had poor personal hygiene.

Keywords: Sanitation, Environmental Health, Snack Vendors, Traditional Elementary School, Buntusu Village, Makassar City

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1. Introduction

Contamination that occurs in food and drinks can cause the food to become a medium for disease. Diseases caused by contaminated food are called food-borne diseases (Susanna, 2003).

Foodborne illnesses are one of the most common and burdensome public health problems ever encountered in modern times. The disease takes a heavy toll on human life and causes a great deal of suffering, especially among infants, children, the elderly and those who are immunocompromised (WHO, 2006).

The Central Food and Drug Monitoring Agency noted that during 2004 in Indonesia there were 82 cases of food poisoning which caused 6,500 victims to become ill and 29 people died. As many as 31% of poisoning cases were caused by food originating from catering services and home-made (Antara, 2004).

Children are a group at high risk of contracting disease through food or drink (Antara, 2004). Children often become victims of foodborne diseases due to consumption of food prepared at home or in school canteens or purchased from street vendors (WHO, 2006).

The frequency of extraordinary incidents (KLB) of food poisoning in children at school increased in 2004. The highest outbreak occurred in elementary school (SD) children, namely 19 incidents with a total of 575 sick victims (Secretariat General of the Food Intelligence Network, 2005).

Based on the Decree of the Minister of Health of the Republic of Indonesia Number 942/Menkes/SK/VII/2003 concerning Guidelines for Hygiene Sanitation Requirements for Snack Food, there are several aspects regulated in the handling of snack food, namely food handlers, equipment, water, food ingredients, food additives, presentation. and vending facilities. Several of these aspects greatly influence the quality of food.

Traditional food generally has weaknesses in terms of safety against biological or microbiological, chemical or physical hazards. These dangers or contaminants often exist and are discovered due to the low quality of raw materials, processing technology,





inadequate sanitation and hygiene practices and lack of awareness of workers and producers who handle traditional food (Nanuwasa, 2007).

According to Kusmayadi (2007) there are 4 (four) important things which are the principles of food hygiene and sanitation including healthy and clean behavior of people who handle food, food sanitation, equipment sanitation and sanitation of food processing places. Food can be contaminated by microbes for several reasons, including using dirty cloths to clean tables, clean furniture and so on and food stored without a lid so that insects and mice can reach it as well as food processors who are sick or disease carriers (Slamet, 1994).

Arisman's research (2000) also concluded that in Palembang, food vending facilities in the form of food cupboards displayed in stalls and canteens were mostly uncovered. Even if there is, the cover is just a piece of thin curtain cloth which is rarely drawn up, especially when there are lots of guests. Therefore, some flies can easily contaminate the food being sold.

2. Research Method

This research is a descriptive study designed based on a cross sectional approach. The population in this study were all traditional snack food traders in the Buntusu Village Elementary School area, Makassar City. The sample at the time of the research was 23 people. The data required in this research is primary data consisting of the identity and characteristics of traditional snack food handlers, including age, gender, education and length of work obtained by interviews using tools in the form of questionnaires. Apart from that, primary data is also needed in the form of the implementation of sanitation hygiene at traditional snack food vendors which includes individual hygiene of traditional snack food handlers, equipment sanitation, presentation sanitation and sanitation of traditional snack food vendor facilities obtained from observations using a checklist. Secondary data in this research is in the form of a description. general 5 (five) schools in the Buntusu Village Elementary School area, Makassar City.





3. Results And Discussions

a. Result

Respondent Characteristics

1. Age

The following is the distribution of respondents based on the age of the respondents

Table 1
Distribution of Respondents Based on Age

No	Age	n	%
1	< 24 tahun	3	13,0
2	24-54 tahun	17	73,9
3	≥ 55 tahun	3	13,0
Total		23	100

Based on Table 1, of the 23 traditional snack food traders as respondents, there were 73.9% of respondents aged 24-54 years and respectively 13% of respondents aged less than 24 years and respondents aged 55 years or more.

2. Gender

The distribution of respondents based on gender can be seen in Table 2 as follows.

Table 2
Distribution of Respondents Based on Gender

No	Gender	n	%
1.	Man	12	52,2
2.	Woman	11	47,8
Total		23	100

Based on Table 5.2, of the 23 traditional snack food traders as respondents, 52.2% of the respondents were male and 47.8% of the respondents were female.

3. Work Period

The distribution of respondents based on the respondent's work period as a traditional snack food trader can be seen in Table 3 as follows.





Table 3
Distribution of Respondents Based on Years of Work

No	Work Period	n	%
1.	1-10 Year	11	47,8
2.	11-20 Year	10	43,5
3.	> 20 Year	2	8,7
Total		23	100

Based on Table 3, of the 23 respondents, 47.8% of respondents have worked as traditional snack food traders for 1-10 years and only 8.7% of respondents have worked for more than 20 years.

4. Education

The distribution of respondents based on education level can be seen in Table 4 as follows.

Table 4
Distribution of Respondents Based on Education Level

No	Education	n	%
1.	No school	2	8,7
2.	Finished elementary school	7	30,4
3.	Finished high school	5	21,7
4.	Finished high school	8	34,8
5.	Graduated from Academy	1	4,3
Total		23	100

Based on Table 4, the highest level of education of respondents was graduating from academy, 4.3%, while the lowest level of education was no school, 8.7% of the 23 respondents.

5. Personal Hygiene of Snack Food Vendors

The distribution of respondents based on the respondents' personal hygiene can be seen in Table 5 as follows.

Table 5
Distribution of Respondents Based on Personal Hygiene

No	Category	n	%
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1.	Good	12	52,2
2.	Not good	11	47,8
Total		23	100

Based on Table 5, of the 23 respondents, 52.2% of respondents had good personal hygiene, while the remaining 47.8% of respondents had poor personal hygiene.

6. Equipment Sanitation

The distribution of respondents based on the sanitation of respondents' equipment can be seen in Table 6 as follows.

Table 6
Distribution of Respondents Based on Equipment Sanitation

No	Category	n	%
1.	Good	8	34,8
2.	Not good	15	65,2
Total		23	100

Based on Table 6, it can be concluded that only 34.8% of respondents had good sanitation of their equipment, while the remaining 65.2% of respondents had poor sanitation in terms of their equipment.

7. Sanitation for serving snacks

The distribution of respondents based on the sanitation of serving traditional snacks to respondents can be seen in Table 7 as follows.

Table 7
Distribution of Respondents Based on Serving Sanitation

No	Category	n	%
1.	Good	16	69,6
2.	Not good	7	30,4
Total		23	100





Based on Table 7, there are 69.6% of respondents whose sanitation is good, while 30.4% of respondents serve snacks in poor sanitation.

8. Facilities Sanitation

The distribution of respondents based on the sanitation of the respondent's facilities can be seen in Table 8 as follows.

Table 8
Distribution of Respondents Based on Facilities Sanitation

No	Category	n	%
1.	Good	12	52,2
2.	Not good	11	47,8
Total		23	23

Based on Table 8, of the 23 respondents, 52.2% of respondents have good sanitation facilities and 47.8% of respondents have poor sanitation facilities.

b. Discussion

Respondent Characteristics

1) Age

Based on research results from 23 traditional snack food traders as respondents, there were 73.9% of respondents aged 24-54 years and respectively 13% of respondents aged less than 24 years and respondents aged 55 years or more.

Several studies have linked different age categories of food handlers to food handler behavior and knowledge. A survey in England showed that 81% of people aged 55 years or over always ensure that their food is served hot and eat it immediately after serving, while only 54% of young people aged less than 24 years do so (WHO, 2006). This research is in line with research by Marsaulina (2004) in DKI Jakarta which concluded that there was a relationship between personal cleanliness and the age of food handlers. The higher the age of the food handler, the better the food handler's hygiene.

2) Gender





The research results showed almost the same numbers in the two groups of respondents based on gender. Of the 23 traditional snack food traders as respondents, 52.2% of respondents were male and 47.8% of respondents were female.

The results of this research are somewhat different from the results of Susanna's (2003) research, where the number of male traders was fewer than female respondents. Other research links differences in a person's behavior based on gender characteristics. Telephone and observational food safety surveys in the United States involving 7,000 and 2,130 residents. This survey revealed differences between men and women when it comes to washing their hands. In all large cities where the survey was conducted, women wash their hands more often than men, namely 74% and 61% respectively.

3) Work Period

Based on research results from 23 respondents, 47.8% of respondents had worked as traditional snack food traders for 1-10 years and only 8.7% of respondents had worked for more than 20 years.

The results of this research are somewhat different from Marsaulina's (2004) research where the majority (56%) of respondents had worked as food handlers for less than 2 (two) years. This research also links work experience with food handlers' knowledge. Research by Marsaulina (2004) states that starting from work experience of 1 (one) year and above, the proportion of knowledge in a good direction increases, especially with work experience of more than 2 (two) years. Thus, it can be concluded that the relationship between knowledge and work experience is meaningful after reaching 1 (one) year or more

4) Education

The results showed that of the 23 respondents, 34.8% of respondents had completed high school, 30.4% of respondents had completed elementary school, 21.7% of respondents had secondary school education, 8.7% of respondents had never attended school, 4.3% of respondents had graduated from college and none





respondents who did not complete elementary school and completed tertiary education.

- a. Several studies link the education level of food handlers to the cleanliness of food handlers.

Marsaulina's research (2004) concluded that there is a relationship between cleanliness and education, especially after reaching junior high school level.

- b. Personal Hygiene of Snack Food Vendors

Based on the research results of 23 respondents, there were 52.2% of respondents whose personal hygiene was good and 47.8% of respondents whose personal hygiene was not good. Based on the Decree of the Minister of Health of the Republic of Indonesia Number 942/Menkes/SK/2003, there are several requirements that must be met by street food handlers, namely as follows:

1. Based on direct observations and interviews regarding the history of easily contagious diseases, it turned out that none of the respondents were suffering from easily contagious diseases at the time of the study, such as coughs, colds, influenza, diarrhea and stomach diseases similar to diarrhea. Food handlers can be a source of food contamination, especially if the food handler is suffering from an illness or disease.
2. Based on direct observations and interviews with respondents during the research, it turned out that all respondents did not have wounds or ulcers on their bodies.

Wounds cause bacteria on the skin to enter the inside of the skin and infection occurs. The presence of scabs or festering wounds carries a large risk of transmitting disease to food (Ministry of Health of the Republic of Indonesia, 2001).

Based on the research results, 73.9% of respondents had hair that looked clean and neat. The results of observations on clothes that looked clean showed the same percentage.





The research results also showed that all respondents had short-cut nails. However, there were 34.8% who had nails that looked dirty and black.

The results of this study are in line with Susanna's (2003) research which stated that 36% of respondents had dirty nails. This research states that there is a significant relationship between the fingernails of food handlers and food contamination. According to Fathonah (2005) hand nails are often a source of contaminants or result in cross contamination.

3. Based on observations, not a single snack food seller was found wearing an apron while handling food at trading locations in the elementary school area.

The results of this research are similar to Susanna's (2003) research which stated that 85% of food handlers did not wear aprons when handling food and Arisman's (2000) research in Palembang which stated that only 6.6% of food handlers wore aprons when working. An apron is a cloth covering clothes that is used as protection to keep clothes clean. Observations were also made regarding the use of head coverings by food handlers. Of the 23 respondents, it was found that only 60.9% of respondents wore head coverings.

The results of this study are similar to research by Arisman (2000) where there were no food handlers in Palembang who wore headgear as protection when touching food.

4. Most (86.9%) respondents did not wash their hands when they wanted to touch food.

The results of this study are in line with research by Susanna (2003) which stated that 43% of food handlers did not wash their hands before touching food. The habit of not washing hands before serving customers is a source of contaminant that has quite an impact on the cleanliness of food ingredients.





The Indonesian Ministry of Health (2001) stated that hand hygiene is very important for everyone, especially for food handlers. The habit of washing hands is very helpful in preventing the transmission of bacteria from hands to food. Based on observations made, 69.6% of traditional snack food traders touch food with their hands without mats or other equipment.

The results of observations during the research showed that there were several traditional snack food vendors who smoked while selling food. However, smoking is carried out while waiting for buyers by male traders.

This is similar to Susanna's (2003) research which states that smoking is often seen when food handlers are waiting for buyers. According to the Indonesian Ministry of Health (2001), the habit of smoking in food processing environments contains many risks, including bacteria or germs from the mouth and lips that can be transferred to the hands so that the hands become dirty and will contaminate the food, cigarette ash can fall into the food and can cause the smell of cigarette smoke. which can pollute the air.

5) Equipment Sanitation

The results of research on equipment can be concluded that only 34.8% of respondents had good sanitation of their equipment, while the remaining 65.2% of respondents had poor sanitation in terms of their equipment. Decree of the Minister of Health of the Republic of Indonesia Number 942/Menkes/SK/2003 regulates how to keep equipment clean.

Based on observations during the research, not a single respondent was found to wash equipment properly. Some respondents washed equipment without using soap, simply dipping the equipment in a bucket of dirty washing water. This is similar to Hidayat's (1995) research in two





provinces, namely Central Java and DIY Yogyakarta, where it turned out that generally only one bucket was used for washing glasses or plates to wash dirty cutlery for use throughout the day.

Several other respondents dried equipment using rags/napkins which function for various purposes. For example, to clean dirty equipment, dry wet equipment, even to wipe sweat from the forehead. In addition, washed utensils are placed on top of food or in open facilities.

Observation results also showed that 39.1% of street food traders used equipment with mixed functions. According to the Indonesian Ministry of Health (2000), mixed equipment used will cause cross contamination. Based on observations, 21.7% of traditional snack food traders use equipment that is broken, chipped, dented, scratched or cracked. According to the Indonesian Ministry of Health (2000), equipment that is cracked, chipped or broken apart from causing accidents (injuring hands) is also a source of dirt collection because it cannot be cleaned completely.

6) Sanitation for serving snacks

Based on the research results, there were 30.4% of respondents who served snacks in poor sanitation conditions. Observation results showed that 56.5% of respondents were selling their wares openly. Even if something is closed, it is only occasionally when there are no buyers. Some of the covers used were plastic sheets that looked dirty.

This is similar to Hidayat's (1995) research in two provinces, namely Central Java and DIY Yogyakarta. This research states that generally there are no or inadequate covers for snack foods, for example they are only covered with a piece of paper or a banana leaf. So a lot of flies land on these snacks. Research by Arisman (2000) also concluded that in Palembang, food facilities in the form of food cupboards displayed in food stalls and canteens were mostly uncovered. Even if there is, the





cover is just a piece of thin curtain cloth which is rarely drawn up, especially when there are lots of guests.

Selling food openly can increase the risk of food being contaminated by the environment, either through air, dust, vehicle fumes, or even insects. Food sold on the side of the road is very easily exposed to dust and fumes from flying vehicles.

Based on observations, 60.9% of respondents wrapped snacks using packaging that could contaminate the food, for example using newspaper and colored plastic bags.

7) Facilities Sanitation

Based on research results from 23 respondents, 52.2% of respondents had good facilities and 47.8% of respondents had poor sanitation facilities.

The research results show that the majority (78.3%) of respondents have open facilities, so they cannot protect food from contamination. A similar thing was shown in research by Arisman (2000) which concluded that in Palembang food facilities in the form of food cupboards displayed in stalls and canteens were mostly uncovered.

Based on observations, not a single traditional snack food facility has complete facilities as regulated in the Decree of the Minister of Health of the Republic of Indonesia Number 942/Menkes/SK/2003. The facilities owned by traditional snack food traders usually only have one or two storage rooms which are used to store various equipment, ready-made food and so on combined..

4. Conclusion

The distribution of hygiene and sanitation implementation among traditional snack food traders in the Buntusu Village Elementary School environment, Makassar City in 2009 can be seen in the following matters:





1. Distribution of respondent characteristics, including 73.9% of respondents aged 24-54 years, 52.2% of respondents were male, 47.8% of respondents had worked as traditional snack traders for 1-10 years, there were respondents with the highest level of education, namely graduating from college, 4.3%, and respondents with the lowest education, namely not attending school, 8.7%.
2. 52.2% of respondents had good personal hygiene, while the remaining 47.8% of respondents had poor personal hygiene.
3. There were only 34.8% of respondents whose equipment sanitation was good, while the remaining 65.2% of respondents had poor sanitation in terms of their equipment.
4. There are 69.6% of respondents whose sanitation is good, while 30.4% of respondents serve snacks in poor sanitation.
5. There are 52.2% of respondents who have good facilities and 47.8% of respondents who have facilities whose sanitation is not good.

Compliance with ethical standards

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Statement of informed consent

Every action we take as authors is a mutual agreement or consent.

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