

Description of food hygiene and sanitation as well as the presence of *Salmonella sp* bacteria in dumpling snacks sold in the front area of SD Poasia District, Kendari City

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Abstract

Siomay snacks are one of the popular foods among the people in Poasia District, Kendari City. The implementation of hygiene and sanitation among handlers shows that it is still not good, especially in implementing hygiene in processing dumplings, thereby allowing bacterial contamination to occur which causes disease transmission. The 2021 Kendari City Health Service Data Report shows that typhoid fever ranks 9th out of the 10 largest cases with a total of 1,628 cases. The aim of this research is to determine the description of food hygiene and sanitation as well as the presence of *Salmonella sp* bacteria in dumpling snacks sold in the front area of SD Poasia District, Kendari City in 2023. This research uses a Quantitative Descriptive type of research with a sampling technique using Total Sampling. The results of this research show that of the 10 dumpling samples sold in the front area of the Poasia District Elementary School, Kendari City, there was 1 (10%) dumpling sample that was positive for *Salmonella sp* bacteria and 9 (90%) dumpling samples were negative for *Salmonella sp* bacteria. Of the 10 handlers, 4 (40%) of the siomay food handlers did not meet the requirements of RI Minister of Health Decree No. 942/MENKES/SK/VII/2003 and there are 6 (60%) handlers who meet the requirements of the Republic of Indonesia Minister of Health Decree No. 942/MENKES/SK/VII/2003. The conclusion of this research is that in terms of the presence of bacteria, the quality of the siomay food is a small part that does not meet the requirements and in terms of the hygiene and sanitation of the handlers, the majority of it meets the requirements of the Republic of Indonesia Minister of Health Decree No. 942/MENKES/SK/VII/2003 concerning Sanitary Hygiene for Snack Foods. The suggestion from this research is for handlers to further improve the application of sanitary hygiene in processing dumplings.

Keywords: Siomay; Sanitation Hygiene; *Salmonella sp*; Sample

1. Introduction

Food is a basic daily human need that must be met so that humans can carry out their activities. However, food may be one of the reasons for food poisoning and can be an intermediary for disease transmission, also known as foodborne disease. Contamination that occurs in food can cause the food to become a medium for disease. The Department of Health groups foodborne diseases into five groups, namely: those caused by viruses, bacteria, amoeba/protozoa, parasites and non-germic causes (1).

Food contamination is one of the factors that causes food to be unsafe for humans. Food contaminated with microorganisms can be one of the causes of the development of disease pathogenic microorganisms. *Salmonella sp* bacteria cause typhus or Salmonellosis. Salmonellosis is caused by food contaminated by bacteria consumed by humans. Salmonellosis is characterized by acute symptoms of fever, abdominal pain, diarrhea, sometimes vomiting. *Salmonellosis* is a term that indicates infection by *Salmonella sp* (2) bacteria.

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The disease caused by *Salmonella* bacteria is typhoid fever. Typhoid fever is an acute inflammation of the digestive tract caused by the bacteria *Salmonella typhi* and *Salmonella paratyphi* A, B and C. Typhoid fever is also known as typhus abdominalis, typhoid, fever, or enteric fever. The term typhoid comes from the Greek word typhos, which means someone suffering from fever accompanied by loss of consciousness (3).

Based on data from the World Health Organization (WHO), Surveillance Preventable Disease Typhoid and Other Invasive *Salmonellosis* shows that in 2019 there were an estimated 11-12 million cases of typhoid fever per year and around 128,000-161,000 deaths per year, compared to an estimated 6 million cases of paratyphoid fever and 54,000 deaths every year (4).

According to reports from the Ministry of Health of the Republic of Indonesia, typhoid fever is an epidemic disease that is ranked 10th in Indonesia and causes 3.3% of the total number of deaths in Indonesia. This is greatly influenced by the very poor sanitation conditions in Indonesia, because environmental sanitation is the main cause of this disease. In 2020, according to the health profile, the incidence of typhoid fever in Indonesia was 5.13% with an average of 800 cases per 100,000 Indonesian population (Ministry of Health of the Republic of Indonesia, 2020).

According to a report by the Food and Drug Supervisory Agency (BPOM), in Indonesia there are around 20 million cases of food poisoning every year. This is made worse by various types of food additives which are sourced from formaldehyde. Of the 77 outbreaks of food poisoning that occurred, the highest causative agent was microbiology with 35 incidents suspected (43.2%) and 5 incidents (6.2%) confirmed. BPOM Southeast Sulawesi Province Annual Report During 2021, there were 256 people with poisoning cases in Southeast Sulawesi Province with a total frequency of 49 cases. The causes of poisoning come from food products, drugs and dangerous substances. The most OMKABA products that caused poisoning in the community came from food products with 16 cases or 12.9% with a total of 220 sufferers (6).

The annual report from the Southeast Sulawesi Provincial Health Service shows that in 2020 typhoid fever was among the 10th largest diseases in Southeast Sulawesi and ranked 6th with a total of 4,467 cases. Meanwhile, in 2021 there was a decrease in cases, ranking 9th out of the 10 largest cases with a total of 1,628 cases. The annual report of the Kendari City Health Service in 2021, the number of cases of typhoid fever was 360 cases, in 2022 the number of cases of typhoid fever was 1,086 cases. Meanwhile, the number of cases of typhoid fever in 2023 from January to July is 801 cases (7).

The annual report at the Poasia Health Center in 2020, the number of cases of typhoid fever was 40 cases, in 2021 the number of cases of typhoid fever experienced a significant increase of 77 cases, while in 2022 typhoid fever has begun to decline with the number of 65 cases (8).

Siomay is a food that is familiar and easy to find with a very simple presentation. Apart from being relatively cheap, dumplings are also the snack that is most popular with the public, especially students. Food safety is a public need, because safe food will protect against the occurrence of disease or health disorder. So that the food produced is safe, in the handling process it is necessary to apply the principles of food sanitation hygiene. Proper and correct processing will produce food that is clean, healthy, safe, beneficial and long-lasting. Food safety can be influenced by contamination, whether in the form of microorganisms, physical or chemical substances.

Initial observation report on several dumpling snack food sellers in the Poasia District area, there are several dumpling snack food sellers who are open or don't have covers and there are still many sellers who still have management places that don't meet hygiene and sanitation requirements and there are still many food servers who do not pay attention to sanitation hygiene aspects such as not wearing gloves, head coverings, masks and so on. This can result in food being contaminated with bacteria through air and dust. explanation: researchers are interested in researching the description of handler hygiene, sanitation of processing areas and the presence of *Salmonella* sp bacteria in Siomay Snacks in Poasia District.

2. Method

This research is a type of quantitative descriptive research, the research location was carried out in the front area of SDN 1 Poasia, SDN 11 Poasia, SDN 08 Poasia, SDN 03 Poasia, SDN 02 Poasia and SDN 10 Poasia which are in Poasia District, when this research will be carried out in November 2023, the population in this study are all dumpling sellers in the front area of SDN 1 Poasia, SDN 11 Poasia, SDN 08 Poasia, SDN 03 Poasia, SDN 02 Poasia and SDN 10 Poasia in Poasia District, Kendari City. Based on a survey of the number of dumpling sellers There are 10 siomay sellers in the front area of the elementary school, the sampling technique is total sampling where the number of samples is the same

as the population. The analysis in this research is a descriptive analysis of the results of laboratory tests regarding the presence of *Salmonella* sp bacteria in dumplings as well as univariate analysis tests.

3. Results and Discussion

3.1 Personal Hygiene

Table 1 Distribution of Personal Hygiene Questionnaire Results for Siomay Food Handlers in Poasia District, Kendari City

No	Personal Hygiene	Number (n)	Percentage (%)
1.	Qualify	6	60
2.	Not eligible	4	40
	Total	10	100

Table 1 shows that 6 based on the results of the questionnaire form, siomay food handlers met the personal hygiene requirements with a percentage of 60% and 4 siomay food handlers in Poasia District, Kendari City did not meet the personal hygiene requirements with a percentage of 40%.

Table 2 Distribution of Personal Hygiene Observation Results of Siomay Food Handlers in Poasia District, KendarCity

No	Personal Hygiene	Number (n)	Percentage (%)
1.	Qualify	8	80
2.	Not eligible	2	20
	Total	10	100

Table 2 shows that 8 personal hygiene observations based on the results met the requirements with a percentage of 80% and 2 personal hygiene did not meet the requirements with a percentage of 20%.

3.2 Sanitation of Processing Places

3.2.1 Selection of Raw Materials

Table 3 Distribution of Sanitation Observation Results for Selection of Raw Materials for Siomay Food Handlers in Poasia District, Kendari City

No	Sanitation of Raw Material Selection	Number (n)	Percentage (%)
1.	Qualify	10	100
2.	Not eligible	0	0
	Total	10	100

Table 3 shows that based on the results of observations, all dumpling food handlers in Poasia District, Kendari City have fulfilled the sanitation requirements for selecting raw materials with a percentage of 100%.

3.2.2 Raw Material Storage

Table 4 shows that based on the results of observations of 8 dumpling food handlers, they fulfill the requirements for sanitary storage of raw materials by percentage 80% and 2 dumpling food handlers in Poasia District, Kendari City, do not meet the sanitation requirements for storing raw materials with a percentage of 20%.

Table 4 Distribution of Sanitation Observation Results for Storage of Raw Materials for Siomay Food Handlers in Poasia District, Kendari City

No	Raw Material Storage Sanitation	Number (n)	Percentage (%)
1.	Qualify	8	80
2.	Not eligible	2	20
	Total	10	100

3.2.3 Food Storage

Table 5 Distribution of Observation Results on Food Storage Sanitation of Siomay Food Handlers in Poasia District, Kendari City

No	Food Storage Sanitation	Number (n)	Percentage (%)
1.	Qualify	9	90
2.	Not eligible	1	10
	Total	10	100

Table 5 shows that based on the results of observations, 9 siomay food handlers met food storage sanitation requirements in percentages 90% and 1 dumpling food handler in Poasia District, Kendari City, does not meet food storage sanitation requirements with a percentage of 10%.

3.2.4 Transportation of Ready-to-Eat Ingredients

Table 6 Distribution of Sanitation Observation Results of Transport of Ready-to-Eat Ingredients for Siomay Food Handlers in Poasia District, Kendari City

No	Sanitation Transportation of Ready-to-Eat Ingredients	Number (n)	Percentage (%)
1.	Qualify	10	100
2.	Not eligible	0	0
	Total	10	100

Table 6 shows that based on observations, all siomay food handlers in Poasia District, Kendari City meet the sanitation requirements for transporting ready-to-eat ingredients with a percentage of 100%.

3.2.5 Presentation

Table 7 Distribution of Sanitation Observation Results for Transport of Ready-to-Eat Materials for Siomay Food Handlers in Poasia District, Kendari City

No	Presentation	Number (n)	Percentage (%)
1.	Qualify	8	80
2.	Not eligible	2	20
	Total	10	100

Table 7 shows that based on the results of observations, 8 dumpling food handlers met the serving sanitation requirements with a percentage of 80% and 2 dumpling food handlers in Poasia District, Kendari City did not meet the serving sanitation requirements with a percentage of 20%.

3.3 Sanitation Facilities

Table 8 shows that based on the results of observations, 6 dumpling food handlers met the sanitation facility requirements with a percentage of 60 and 4 dumpling food handlers in Poasia District, Kendari City did not meet the sanitation facility requirements with a percentage of 40.

Table 8 Distribution of Observation Results of Sanitation Facilities for Siomay Food Handlers in Poasia District, Kendari City

No	Sanitation Facilities	Number (n)	Percentage (%)
1.	Qualify	6	60
2.	Not eligible	4	40
	Total	10	100

3.4 The presence of *Salmonella sp*

Table 9 Distribution of the presence of *Salmonella sp* bacteria in dumplings in Poasia District, Kendari City

No	The presence of <i>Salmonella sp</i>	Number (n)	Percentage (%)
1.	Positive	1	10
2.	Negative	9	90
	Total	10	100

Table 9 shows that of the 10 dumpling food samples that had undergone laboratory testing, 1 (10%) dumpling food sample was positive for containing *salmonella sp* bacteria and 9 (90%) dumpling food samples showed negative results for salmonella sp bacteria.

Table 10 Test results for the presence of *Salmonella sp* bacteria in dumplings in Poasia District, Kendari City

No	Sample Code	Inspection Parameters	Results	Note.
1	S1	<i>Salmonella sp.</i> bacteria	No <i>Salmonella sp</i> bacteria were found	M.S
2	S2	<i>Salmonella sp.</i> bacteria	Bacteria found <i>Salmonella sp</i>	TMS
3	S3	<i>Salmonella sp.</i> bacteria	No <i>Salmonella sp</i> bacteria were found	M.S
4	S4	<i>Salmonella sp.</i> bacteria	No <i>Salmonella sp</i> bacteria were found	M.S
5	S5	<i>Salmonella sp.</i> bacteria	No <i>Salmonella sp</i> bacteria were found	M.S
6	S6	<i>Salmonella sp.</i> bacteria	No <i>Salmonella sp</i> bacteria were found	M.S
7	S7	<i>Salmonella sp.</i> bacteria	No <i>Salmonella sp</i> bacteria were found	M.S
8	S8	<i>Salmonella sp.</i> bacteria	No <i>Salmonella sp</i> bacteria were found	M.S
9	S9	<i>Salmonella sp.</i> bacteria	No <i>Salmonella sp</i> bacteria were found	M.S
10	S10	<i>Salmonella sp.</i> bacteria	No <i>Salmonella sp</i> bacteria were found	M.S

Table 10 shows that the results of examining siomay samples at the pre-enrichment stage in LB media, all samples experienced turbidity, which indicates the presence of bacterial growth. And the results of the examination on SSA media, 1 sample of dumplings grew colonies of *Salmonella sp* bacteria. Then in the gram stain all samples have gram negative rods.

Table 11 Gram staining

Sample Code	Results
S1	Gram Negative
S2	Gram Negative
S3	Gram Negative
S4	Gram Negative
S5	Gram Negative
S6	Gram Negative
S7	Gram Negative
S8	Gram Negative
S9	Gram Negative
S10	Gram Negative

Table 11 shows that the gram staining of the 10 samples was all gram negative.

4. Discussion

4.1 Personal Hygiene

Hygiene Personal is the clean, safe and healthy behavior of food handlers to prevent contamination of food from food preparation to food serving. One of the management of institutional food is the provision of food and drinks that implement hygiene and sanitation behavior in accordance with applicable regulations. One of the factors that supports the principles of food hygiene and sanitation is the cleanliness of handlers or personal hygiene. Several important procedures for food handlers, namely washing hands before and after handling food, wearing complete personal protective equipment and personal hygiene and health (9).

Based on a questionnaire distributed to siomay food handlers in Poasia District, Kendari City, the results showed that the majority of handlers washed their hands before touching food and drink with a percentage of 60% and a small percentage of handlers did not wash their hands before touching food and drink with a percentage of 40%. Handlers who wash their hands use soap with running water with a percentage of 80% and handlers who do not wash their hands use soap with running water with a percentage of 20%. Handlers use rings when processing food and drinks with a percentage of 80% and handlers do not use rings when processing food/drinks with a percentage of 20%.

Handlers use aprons when working at a percentage of 10% and handlers do not use aprons when working at a percentage of 90%. Handlers cover their mouths when sneezing, coughing or flu when touching food and drinks with a percentage of 90% and handlers do not cover their mouths when sneezing, coughing or flu when touching food and drinks with a percentage of 10%. And all food handlers wash the clothes used for work every day with a percentage of 100%. Poor personal hygiene behavior among dumpling food handlers can facilitate *Salmonella* sp bacterial contamination so that this can have a negative impact on public health.

Based on observations made on siomay food handlers, all handlers were free or did not suffer from open wounds and ulcers that could infect food and drink. All handlers wear clean clothes, the handlers' fingernails are clean, use spoons when serving food and drinks and the handlers receive and hold money after serving food so that this means food and drinks are not easily contaminated. Most of the handlers do not smoke when processing food and drinks with a percentage of 80% and a small number of handlers smoke when processing food and drinks with a percentage of 20%. Most handlers process dumplings with their hands clean with a percentage of 80% and a small number of handlers process dumplings with their hands unclean with a percentage of 20%. Most food and drink handlers have short nails with a percentage of 70% and food and drink handlers without short nails with a percentage of 30%. Most food and drink handlers do not scratch while working with a percentage of 90% and food and drink handlers scratch while working with a percentage of 10%. And the majority of food and drink handlers whose fingernails are 100% clean when working.

Siomay food handlers in Poasia District, Kendari City do not meet the requirements for implementing personal hygiene in accordance with the Decree of the Minister of Health Number 942/MENKES/SK/VII/2003 concerning Guidelines for Sanitary Hygiene Requirements for Snack Foods with a percentage of 40%. The poor hygiene behavior of the handlers in this case is caused by several influencing factors, one of which is the limited knowledge of the handlers regarding personal hygiene or personal health. Processing dumplings that show bad behavior such as scratching body parts, keeping long nails and not using work equipment, which will cause food and drinks to be easily contaminated with bacteria, can cause health problems for the community.

This research is in line with research conducted by Dyah Suryani and Fardhiasih Dwi Astuti in 2019. Based on the results of research on angkringan traders in the Malioboro area, the number of traders who have poor hygiene is 26 traders (65%), and traders who have good hygiene totaling 14 traders (35%). This means that there are still many traders who have poor hygiene practices. There are still many angkringan traders in the Malioboro area who are in the bad category, such as there are only 2 traders who wear aprons, there are only 24 traders who cover their heads, there are only 17 traders who wash their hands before carrying out activities, and so on.

4.2 Sanitation of Processing Place

4.2.1 Selection of Raw Materials

Food is a basic human need that humans need at all times and requires good and correct management. In order to produce good food, sanitary selection of raw materials is an important factor in determining the quality of a food. Sanitation of raw material selection is an effort made by handlers to protect raw materials from chemical hazards or the growth of pathogenic microorganisms and the formation of toxins during transportation and storage of raw materials.

Based on the results of observations made on dumpling food handlers in Poasia District, Kendari City, it was found that all the raw materials used by handlers in processing dumpling food used ingredients that had not expired and were still suitable for processing. Siomay food handlers in Poasia District, Kendari City have met health requirements in implementing sanitation hygiene in selecting raw materials with a percentage of 100%. This is because the handlers in processing dumplings use ingredients that are fit for consumption. Prevention of food and drink contamination needs to be carried out at every processing stage in order to produce food and drink that is healthy and safe for human consumption. One way to prevent food contamination begins with the stage of selecting food and drink ingredients.

4.2.2 Sanitation of Raw Material Storage

Sanitary storage of raw materials is an effort by handlers to prevent damage to food materials due to bacterial contamination. Food and beverage ingredients used in the production process must be stored properly because errors in storing food and beverages can result in a decrease in the quality of the food and beverages (11).

Based on observations made on dumpling food handlers in Poasia District, Kendari City, it shows that all handlers use dumpling food storage containers which are kept closed. Most of the handlers use storage places for dumplings to prevent insects and mice from nesting with a percentage of 80% and a small number of handlers use storage places for dumplings as nesting places for insects and mice with a percentage of 20%. Most of the handlers use places to store dumplings for food, which is free from flies and insects with a percentage of 70% and the small number of handlers who use dumpling food storage areas have flies and insects with a percentage of 30%. Most of the handlers use dumpling food storage places that are clean with a percentage of 80% and a small number of handlers use dumpling food storage places that are not clean with a percentage of 20%.

Siomay food handlers in Poasia District, Kendari City have met health requirements in implementing food storage sanitation with a percentage of 80%. However, a small number of siomay food handlers do not meet the health requirements in implementing sanitary storage of dumpling food ingredients with a percentage of 20% in accordance with the Decree of the Minister of Health of the Republic of Indonesia Number 942/MENKES/SK/VII/2003 concerning Guidelines for Sanitary Hygiene Requirements for Snack Food. Food and beverages that are bought and sold must comply with sanitary hygiene and are suitable for consumption in accordance with these regulations. A food storage area that is kept closed and free from flies and insects will keep the dumplings safe so that contamination of the food does not occur. There are still handlers of dumpling food handlers in Poasia District, Kendari City, who do not pay attention to the storage of raw materials in making dumplings, namely the place used is not clean, making it easier for insects to live or bacterial contamination which can cause disease transmission.

4.2.3 *Food Storage Sanitation*

Food storage sanitation is an effort made by handlers to maintain food cleanliness so that it remains safe for consumption to prevent bacterial contamination. Based on the results of observations made on siomay food handlers in Poasia District, Kendari City, all handlers use a place to store ready-to-eat dumplings in closed containers. Handlers who store ready-to-eat dumplings are stored in a place that cannot be reached by insects with a percentage of 90% and handlers who store ready-to-eat dumplings are stored in a place that can be reached by insects with a percentage of 10%. Handlers store ready-to-eat dumplings in clean containers with a percentage of 100% (12).

A total of 9 (90%) siomay food handlers in Poasia District, Kendari City meet the health requirements in food storage sanitation and 1 (10%) siomay food handlers do not meet the health requirements in accordance with the regulations of Minister of Health Decree Number 942/MENKES/SK/VII/ 2003 regarding Guidelines for Sanitary Hygiene Requirements for Snack Foods. The results show that handlers do not meet the requirements for food storage sanitation, namely storing food in a place that can be reached by insects and storing food in a place that is not clean. Food storage places that do not pay attention to hygiene and sanitation will have an impact on the quality of the food, causing it to become contaminated or become a breeding ground for insects or bacteria.

4.2.4 *Sanitation for Transporting Ready-to-Eat Ingredients*

Sanitation of transporting ready-to-eat ingredients is an effort made by food handlers to prevent damage and microorganism contamination of food that is ready to be consumed. Based on observations made on siomay food handlers in Poasia District, Kendari City, it shows that all handlers have fulfilled the sanitary health requirements for transporting ready-to-eat ingredients with a percentage of 100%. In accordance with the regulations of 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, where handlers in the process of transporting ready-to-eat ingredients use equipment that is clean, strong and adequate. The equipment used by handlers is available specifically as transportation equipment in clean condition. Transporting ready-to-eat food is not mixed with contaminated ingredients, each type of ready-to-eat food has its own closed container, and the container is intact, strong and of adequate size for the amount of food to be placed. (13).

Transporting healthy food and drinks will play an important role in preventing pollution. The risk of contamination in ready-to-eat food is higher than contamination in food and drink ingredients. Therefore, the emphasis on pollution control is more focused on ready-to-eat food and drinks. In the transportation process there are many parties involved starting from preparation, container, people and temperature. Contamination of food and drinks during transportation can be physical, microbial or chemical

4.2.5 *Serving Sanitation*

Serving sanitation is the principle of serving in the form of containers for each type of food placed in separate containers with closed conditions. The goal is to ensure that food is not cross-contaminated. Based on the results of observations made on siomay food handlers in Poasia District, Kendari City, namely that all handlers do not reuse single-use containers, using disposable containers to package food and drinks can be one way to prevent disease transmission. By using it only once the product can reduce the occurrence of bacterial contamination. Most handlers use equipment for serving that is clean with a percentage of 90% and handlers use equipment for serving that is not clean with a percentage of 10%. The handler maintains the cleanliness of his body parts when serving dumplings with a percentage of 90% and the handler does not maintain the cleanliness of his body parts when serving dumplings with a percentage of 10%. When serving, the handler's hands do not come into direct contact with the dumpling food with a percentage of 100% (14).

A total of 8 (80%) siomay food handlers in Poasia District, Kendari City met the health sanitation requirements for serving and 2 (20%) handlers did not meet the health sanitation requirements for serving. There are still some handlers who do not meet the sanitation requirements for serving, namely some handlers do not maintain body hygiene when serving dumplings. Serving uncleanliness will risk transmitting various kinds of viruses and bacteria that can be transmitted through food, such as food and drink poisoning, diarrhea, fever or various other diseases so that consumers' health can be threatened.

4.2.6 *Sanitation Facilities*

Sanitation facilities are all facilities and infrastructure that are of concern regarding environmental aspects, including the provision of clean water, the condition of waste water drainage channels and so on. The availability of sanitation

facilities must be followed by maintenance so that the benefits of safety and comfort are achieved. Inadequate hygiene and sanitation facilities can increase the incidence of diseases that can cause death.

Based on the results of observations made on dumpling food handlers in Poasia District, Kendari City, all handlers have sufficient clean water facilities with a percentage of 100%. The handlers have trash facilities that are transported every 24 hours with a percentage of 70% and the handlers do not have trash facilities that are transported every 24 hours with a percentage of 30%. The handler has a processing area that is free from the entry of insects and rodents with a percentage of 100%.

A total of 6 (60%) siomay food handlers in Poasia District, Kendari City have met the requirements for sanitation facilities and 4 (40%) handlers have not met the requirements for sanitation facilities in accordance with the rules stipulated by Decree of the Minister of Health Number 942/MENKES/SK/VII/ 2003 concerning Guidelines for Sanitary Hygiene Requirements for Snack Food. Some siomay food handlers do not meet the sanitation facility requirements, namely that there are no trash bins ready to be picked up every 24 hours. Sanitation facilities greatly determine the success of the safety of food and drinks that will be bought and sold by the public. Therefore, sanitation facilities are an important support in the safety of food and drink so that food and drink are not easily contaminated by viruses and bacteria caused by poor sanitation.

4.3 The presence of *Salmonella sp* bacteria in dumplings

Salmonella sp bacteria is a pathogenic bacteria that can cause disease in humans. *Salmonella* infection is still a big problem because *salmonellosis* can occur in unhygienic food media and people often don't pay attention to it. The disease that occurs when humans are infected with *Salmonella* bacteria is typhus fever in humans, which causes high fever with the effect of vomiting.

Based on laboratory examinations carried out on the siomay samples studied, it showed that 1 in 10 siomay samples were positive for *Salmonella sp* bacteria with a percentage of 10%. One of the factors that causes siomay food to be contaminated by *Salmonella sp* bacteria is that the state of sanitation facilities where dumplings are sold are inadequate and also the personal hygiene of handlers is a problem because some handlers during the food processing process do not pay attention to personal hygiene, do not wash their hands before handling drinks and not covering your mouth when coughing.

This research is in line with Adhe Elsaula Maharani and Devi Anita Sari in 2022. Samples of dumplings obtained from 3 dumpling traders. The research results showed that of the 3 samples examined, 2 of them were positive for containing *Salmonella sp* bacteria. The highest amount was 240/100 ml of sample. Meanwhile, the lowest is 0/100 ml of sample. Contamination can occur through contaminated processing and can also occur through contact from workers and sellers during the manufacturing and serving process. Therefore, improvements are needed in terms of quality and hygiene in obtaining materials for making dumplings and improvements in sanitation of sales locations so that it is hoped that this can reduce bacterial contamination in dumpling food.

5. Conclusion

Hygiene Siomay food handlers in Poasia District, Kendari City, showed that some of the handlers did not meet the requirements for implementing personal hygiene with a percentage of 40%.

Sanitation of dumpling food processing in Poasia District, Kendari City shows that the majority of dumpling food processing sanitation does not meet the requirements for implementing processing sanitation according to the Minister of Health Decree Number 942/MENKES/SK/VII/2003 concerning Guidelines for Hygiene Requirements for Snack Food Sanitation.

The results of laboratory examinations regarding the presence of *Salmonella sp* bacteria in dumplings in Poasia District, Kendari City, showed that 1 dumpling food sample was positive for containing *Salmonella sp* bacteria with a percentage of 10%.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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