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The Overview of Sanitation Hygiene of Food Stalls in the Working Area of the Bara-Baraya Health Centre, Makassar, Indonesia

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Abstract

Background: Food security remains a public health concern in Indonesia, particularly in informal food sectors such as food stalls, where inadequate knowledge and practices related to hygiene and sanitation may increase the risk of foodborne diseases. Poor sanitation conditions in food management sites can negatively affect community health and food safety.

Aim: This study aimed to describe the hygiene and sanitation conditions of food stalls in the working area of the Bara-Baraya Health Centre in 2025.

Method: This study employed a descriptive survey method conducted in October 2025. The research involved five food stalls that voluntarily participated in the study. Data were collected through direct observation using an environmental health inspection form based on the Regulation of the Minister of Health of the Republic of Indonesia Number 43 of 2014 concerning Sanitation Hygiene of Food Management Sites.

Results: The results showed that only one food stall (20%) met the required hygiene and sanitation standards, while four food stalls (80%) did not meet the requirements. The most common deficiencies were related to kitchen cleanliness, separation of raw and cooked food, availability of soap at handwashing facilities, and inappropriate food handler behaviour.

Conclusion: The implementation of hygiene and sanitation practices in most food stalls within the Bara-Baraya Health Centre area is still inadequate. Strengthened supervision, continuous coaching, and education for food handlers are needed to improve food safety and protect public health.

Keywords: Hygiene; Sanitation; Food stalls; Bara-Baraya Health Center

INTRODUCTION

Good environmental health is an important factor in maintaining the quality of life of the community. The application of the principles of proper hygiene and sanitation is the foundation for creating a clean, safe environment and supporting clean and healthy living behaviours. Optimal sanitation management efforts not only prevent the transmission of diseases through food and beverages, but also reflect the success of sustainable public health development in accordance with policy directions *Healthy Indonesia 2025*, namely the realisation of a healthy, independent, and just society [1].

Food sanitation is an effort made to prevent the occurrence of disease through the control of environmental factors related to the process of processing, storing, and serving food. The application of good hygiene and sanitation principles also includes the cleanliness of facilities, tableware, and food handlers. Non-compliance with sanitation standards can pose a risk of microbiological and chemical contamination that has the potential to interfere with consumer health [2]. Food stalls, as a form of informal food business, have an important role in meeting people's daily food needs, but they are often a source of disease transmission due to suboptimal hygiene practices [3].

Research results in recent years show that most food stalls in Indonesia still do not meet the hygiene and sanitation requirements set. Factors that affect include limited clean water facilities, unhygienic washing stations, poor personal hygiene of food handlers, and suboptimal waste management [2,4]. This condition shows that there is still a gap between the knowledge and practice of food stall managers on food safety principles [5].

The government, through the Ministry of Health, has issued guidelines on sanitation hygiene of food management places which cover four main aspects, namely the condition of buildings and facilities, the provision of clean water, the cleanliness of eating utensils, and the behaviour of food handlers [6]. However, the implementation of these guidelines is often not fully implemented in the field due to the limitations of coaching and supervision by local health agencies [7].

According to the WHO Indonesia 2024 report, the implementation of risk-based inspections (*Risk-based food inspection*) and the "Five Keys to Safer Food" program have proven to be able to improve hygiene and sanitation standards in the traditional food sector, including for small traders [8]. This emphasises the importance of periodic evaluation of the hygiene and sanitation conditions of food stalls at the village level as the basis for planning targeted interventions [9].

The Bara-Baraya health centre is located in one of the densely populated areas, with a number of food stalls that continue to increase in line with the growth of the community's economic activities. Based on initial observations, there are still several food stalls that do not have adequate sanitation facilities, such as soap-free hand washing stations, open wastewater drains, and storage of food at room temperature. This condition has the potential to pose a risk of food contamination and foodborne illnesses such as diarrhoea and typhoid.

Based on these conditions, a study is needed to describe the hygiene and sanitation conditions of food stalls in the work area of the Bara-Baraya Health Centre in 2025. The results of the research are expected to be evaluation materials for the Health Centre and the Health Office in developing a more effective coaching, education, and supervision strategy for small-scale food businesses so that community food safety can be guaranteed.

METHODS

This research began with the preparation stage in the form of data collection of food stalls in the work area of the Bara-Baraya Health Centre and coordination with the Puskesmas and food stall owners to obtain research permits. Of the 20 food stalls recorded, as many as 5 food stalls are willing to be the object of research. The research was carried out in October 2025 using a descriptive method with a survey approach through direct observation. Data collection was carried out using an environmental health inspection form, which refers to the Regulation of the Minister of Health of the Republic of Indonesia Number 43 of 2014 concerning Sanitation Hygiene of Food Management Sites. Observations include the condition of the outside area of the stall,

consumer service area, kitchen area, sorting and storage of food, food processing and serving process, and food handling behaviour. The data obtained was analysed descriptively by grouping the assessment results into qualified and ineligible categories based on environmental health inspection scores.

This study uses a survey design with a descriptive approach, which will be carried out in October 2025 in the working area of the Bara-Baraya Health Centre. The research process includes several stages, namely preliminary studies, observations, and evaluation of hygiene and sanitation aspects. In the initial stage, research activities are focused on identifying the number and existence of Food Stalls, as well as asking for directions and approval from the health centre to correspond to the location that is used as the object of research. Of the 20 food stalls in the Bara-Baraya Health Center area, as many as 5 food stalls were willing to participate, other food stalls refused to participate for several reasons, including concerns about the reputation of the business if there were shortages, limited time and manpower to receive the arrival of researchers, and lack of understanding related to the benefits of research for their business.

Observation of hygiene and sanitation aspects is carried out through the provision of questions guided by the Regulation of the Minister of Health Number 43 of 2014, which includes the outside area of the stall, the consumer service area, the kitchen, the food sorting and storage process, as well as all hygiene and sanitation conditions of the food stall.

The data collected was then analysed descriptively to obtain an overview of the sanitary hygiene conditions of food stalls. The assessment is divided into 5 main components, namely the outside area, the consumer service area, the kitchen, which includes sorting and storage, food preparation and processing, as well as equipment, food serving and packaging. The assessment category is determined to be 'meet the standard' or 'not meet the standard' based on the restaurant's environmental health inspection form. A food management facility or TPP is declared eligible if the test results reach a value of ≥ 80 and ineligible if < 80 .

Ethical Considerations

This study was conducted by adhering to ethical principles in public health research. Prior to data collection, permission to carry out the study was obtained from the Bara-Baraya Health Centre and the owners of the selected food stalls. Participation in this study was entirely voluntary, and food stall owners were informed about the purpose, procedures, benefits, and scope of the research before observations were conducted.

Informed consent was obtained verbally from all participating food stall owners. Participants were assured that the data collected would be used solely for research purposes and would not affect their business operations or legal standing. The identities of food stalls and food handlers were kept confidential by using codes or initials, and no personal or identifying information was disclosed in the research report.

The observation process was conducted without interfering with daily activities at the food stalls, and no actions were taken that could cause harm or disadvantage to the participants. This research did not involve medical interventions or biological sampling and therefore posed minimal risk to participants. All research procedures were carried out in accordance with ethical standards for observational studies and relevant national research ethics guidelines.

RESULTS

Based on the results of the Environmental Health Inspection (EHI) that has been carried out in 5 Food Stalls in the work area of the Bara-baraya Health Centre, it shows that hygiene and sanitation are not paid attention to. Observations of Food Stalls are carried out using an environmental health inspection form prepared based on the assessment component in the Regulation of the Minister of Health Number 43 of 2014. Based on the results of observations on hygiene and sanitation aspects (Table 1), it is known that of the 5 food stalls, 1 food stall has met the requirements, and the other 4 do not meet the environmental health requirements.

Table 1. Observation Results of the Frequency Distribution of Food Stalls

| Categories | Frequency (unit) | Percentage (%) |
|-----------------------|------------------|----------------|
| Not meet the standard | 4 | 80% |
| Meet the standard | 1 | 20% |
| Total | 5 | 100% |

In the table above, there are 4 food stalls that have not met the requirements and there is only 1 food stall that is eligible. The data has several aspects of assessment consisting of aspects of the outside area, consumer service area, kitchen area including access to water sources, latrines and washing of food utensils, food selection and storage, food preparation and processing as well as equipment, food serving and packaging.

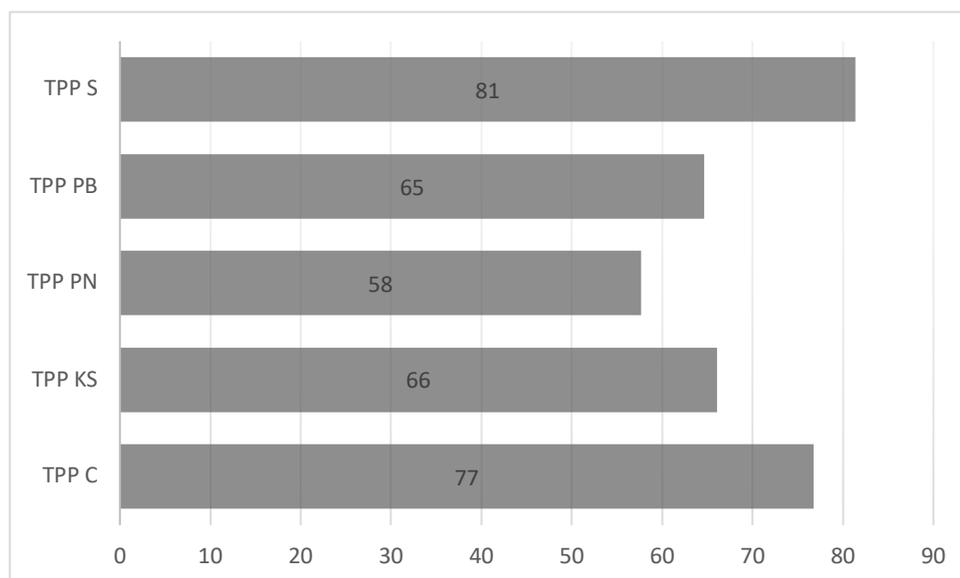


Fig 1. Food stall (TPP) scoring results

In Figure 1, it can be seen that the results of the EHI of the food stalls (TPP) include 4 food stalls that do not meet the standard and 1 food stall that meets the standard. The highest percentage was obtained by Warung Makan S (81%), while the lowest was Warung Makan PN (58%). This shows that there are variations in the implementation of sanitary hygiene that are directly related to the level of compliance of restaurants with applicable standards.

C Food stall / TPP C

Based on the results of the inspection at food stall C located in East Bara-Baraya Village. The results of the outside area of the stall were assessed, and also asked directly whether the area was still affected by flooding. Besides that, odour/smoke/dust/dirt pollution could occur because it was located right on the side of the road.

From the inspection of the service area, there are trash cans, but they are not closed; there are soupy foods that are not stored in hot conditions above 600 C using heating containers. In addition, there are foods that are not consumed for a maximum of 4 hours after cooking. Around the service area, there are also many vectors or disease-carrying animals, such as flies. Sellers also touch money and do not wash their hands before touching food.

From the inspection of the kitchen area, there are unclosed garbage cans, as well as vectors and disease-carrying animals roaming the area. Personnel also do not use aprons, masks and hair coverings. The equipment dryer is used many times and is not replaced regularly. In addition to serving cooked food, it is not consumed after 4 hours. Fruits are not stored at 50 C (refrigerator). Food packaging is not preceded by hand washing and good hygiene.

KS Food stalls / TPP KS

Based on the results of the inspection at the KS food stall located in Bara-Baraya Main Village. The results of the outside area of the stall are considered to be still polluted with odors, smoke and dust because the area is on the side of the road. From the inspection of the service area, there were dirty walls and poor air ventilation; besides that there were soupy foods that were not stored in hot conditions above 600 C using heating containers. In addition, there are foods that are not consumed for a maximum of 4 hours after cooking. Around the service area, there are also many vectors or disease-carrying animals, such as flies. Sellers also touch money and do not wash their hands before touching food.

From the inspection of the kitchen area, there is a place to wash hands, but there is no soap. In the storage area, cooked and raw food are not separated and grouped. Also, working personnel do not use aprons, masks, and hair coverings. The nails of the personnel have not been cut. If they are injured, the wound is not covered with bandages, self-examination once a year is also not done, and the food handlers never receive counselling about the safety of ready-to-eat food.

PN food stall/ TPP PN

Based on the results of the inspection at the PN food stall located in Barana Village. The results of the outside area of the stall are considered to be still polluted with odours, smoke and dust because the area is on the side of the road. From the inspection of the service area, there is poor air ventilation. It also has garbage cans, but it is not closed. In addition, there are soupy foods that are not stored in hot conditions above 600 Celsius using heating containers. The food served does not wear a lid, it is not consumed for a maximum of 4 hours after cooking. Around the service area, there are also many vectors or disease-carrying animals, such as flies. Sellers also touch money and do not wash their hands before touching food.

From the inspection of the kitchen area, there is a place to wash hands, but there is no soap, in the storage area of cooked and raw food are not separated and grouped. In addition, equipment and rags are often used and rarely changed regularly, so they can cause cross-contamination. When packing, personnel do not wash their hands and do not use gloves. Also, working personnel do not use aprons, masks, and hair coverings. The nails of the personnel have

not been cut. If they are injured, the wound is not covered with bandages, self-examination once a year is also not done, and the food handlers never receive counselling about the safety of ready-to-eat food.

PB Food stalls/ TPP PB

Based on the results of the inspection at the PB food stall located in Barana Village. The results of the outside area of the stall are considered to still be flooded, still polluted by odors, smoke and dust because the area is on the side of the road. From the inspection of the service area, there is poor air ventilation, besides that there is soupy food that is not stored in hot conditions above 600 C using a heating container. In addition, there are foods that are not consumed for a maximum of 4 hours after cooking. Around the service area there are also many vectors or disease-carrying animals such as flies. Sellers also touch money and do not wash their hands before touching food.

From the inspection of the kitchen area, there is a place to wash hands but there is no soap, in the storage area of cooked and raw food are not separated and grouped. Also, working personnel do not use aprons, masks, and hair coverings. The cooking area is also not bright enough. If the personnel who work are injured, the wound is not covered with bandages, self-examination is also not carried out once a year, and food handlers never receive counseling about the safety of ready-to-eat food.

S food stall/ TPP S

Based on the results of the inspection at the S food stall located in North Bara-Baraya Village. The results of the outside area of the stall are considered vulnerable to flooding, still polluted with odors, smoke and dust because the area is on the side of the road. From the inspection of the service area, there were dirty walls and poor air ventilation, besides that there were soupy foods that were not stored in hot conditions above 600 C using heating containers. In addition, there are foods that are not consumed for a maximum of 4 hours after cooking. Around the service area there are also many vectors or disease-carrying animals such as flies. Sellers also touch money and do not wash their hands before touching food.

From the inspection of the kitchen area, there is a washing of utensils and foodstuffs that do not use running water, in the storage area of cooked and raw food ingredients are not separated and grouped. Also, working personnel do not wear aprons and masks. If they are injured, the wound is not covered with bandages, self-examination once a year is also not done, and the food handlers never receive counseling about the safety of ready-to-eat food. Equipment used such as rags that are rarely changed regularly and are often used in other tools can cause cross-contamination.

DISCUSSION

This result is in line with previous research by Andriani (2020) who reported that compliance with 6 principles of sanitation hygiene can lower the risk of food contamination. This discovery confirms the meaning of regular supervision and guidance to diners. This research also Outline underline the value of a more stringent supervisory position from relevant authorities, such as the Health Office, to justify restaurants complying with applicable standards. This supervision needs to be accompanied by prolonged guidance and training for food managers and handlers. Not only that, the provision of adequate sanitation facilities, such as a place to wash tableware with clean water and soap, is very meaningful to support the implementation of hygiene and sanitation in the field [10].

Non-compliance with standards Sanitation Not only is it at risk of causing foodborne illnesses, but it can also be Harms restaurant reputation. Food contaminated by germs such as Salmonella or E. coli can cause diseases such as diarrhoea or even food poisoning, which is one of the main public health problems in Indonesia [10].

Learning from the case of India, the main problem of food vendors is the lack of good knowledge of hygienic food preparation & serving practices adopted by the majority of street food vendors. Unlike restaurant businesses that are already established in terms of hygiene and Sanitation, Reddy et al. (2020) also argue that street vendors Food not follow basic food safety principles, such as wearing an apron, access to tap water, not being able to use soap to clean appliances, and many don't have refrigerators to store food [11].

Building conditions, such as walls/walls the roof, must be in good condition so that they are not easily entered by animals such as rat vectors. Because the condition of the building is very influential on the presence of rat vectors in the room. Food Preparation and Processing/Cooking. There are several aspects that are not fulfilled, such as the use of personal protective equipment, such as aprons, masks and head coverings, when processing food and serving food. They consider that if they use a tool, such as a Protector Self-care tool, such as masks, aprons, or head coverings make it difficult for them to move while preparing and serving food [12].

A head covering or hairnet is used to prevent sweat and hair loss from getting into the processed food, then an apron is used to protect the food handler's work clothes to prevent the spread of bacteria to the processed food, then gloves are used to prevent the spread of bacteria to the processed food, then gloves are used to prevent the food from being processed occurs bacterial contamination to food, and masks Need used to prevent bacterial contamination from the mouth and nose to the food produced [12].

Some important points to consider based on the nine aspects observed were the use of head coverings, the use of closed shoes, washing hands before and after processing food and the use of masks. This is an important aspect that must be improved in food processing. The use of closed shoes is important to avoid direct accidents when processing food. In addition, it can also prevent the carrying of microorganisms from the feet by the wind, so that it cannot contaminate food. Washing hands both before and after processing food is very important to do, considering that hands are the main agent of spreading microorganisms [13].

In addition, the use of masks is also an important aspect that must be considered. The use of masks when processing food can help avoid dirt, such as saliva falling from the mouth on processed foods. Usage Masks can reduce the occurrence of inhaling the smell of hot foods such as chilli peppers, which can interfere with the concentration of food processing. The danger of respiratory tract infections can occur if the use of tools such as masks is not carried out because one of the functions of using these masks is to control the occurrence of air droplets, such as respiratory tract infections [13].

Some Pictures of the Food Stalls



CONCLUSION

This study aims to find out the overview of hygiene and sanitation conditions in food stalls in the work area of the Bara-Baraya Health Centre in 2025. Based on the results of observations, most food stalls have not met hygiene and sanitation requirements according to the Regulation of the Minister of Health Number 43 of 2014. Of the five food stalls studied, only one stall (20%) was eligible, while the other four stalls (80%) were still not compliant. The most inappropriate aspects include the cleanliness of the kitchen area, the separation of raw and cooked ingredients, as well as the availability of hand washing facilities and the behaviour of food handlers.

These findings show that the implementation of hygiene and sanitation in food stalls still needs serious attention from managers and health agencies. Routine coaching efforts, periodic supervision, and continuous education for food handlers are needed to improve food safety and prevent foodborne illnesses in the community.

For further research, it is recommended to conduct analytical research to identify factors related to compliance with hygiene and sanitation of food stalls, as well as to evaluate the effectiveness of the coaching program implemented by the Health Centre on improving hygiene and sanitation conditions in the field.

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Ethical Clearance

This study has received ethical approval from the Health Research Ethics Committee of the Faculty of Medicine and Health Sciences, Alauddin State Islamic University Makassar. All research procedures were conducted in accordance with applicable ethical standards, and informed consent was obtained from all participants before data collection.

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Declaration of Conflicting Interest

The author (s) declared no potential conflict of interest with respect to the research, authorship, and/or publication of this article.

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