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Analysis of personal hygiene and food sanitation in food handlers in the canteen of public junior high school 9 Kendari, Kadia sub-district Kendari city in 2022

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Abstract

Background: Incidents of food poisoning are usually caused by ready-to-eat food that has been contaminated with bacteria or microbes. Food poisoning can be caused by poor food handler hygiene during the food processing process. Data released by the Food and Drug Supervisory Agency (BPOM) in Kendari City, Southeast Sulawesi, in 2021 there were 256 cases with a total frequency of occurrence of 49 cases. The most cases of food poisoning in the community came from food products, namely 25 cases (51.02%) with a total of 232 sufferers, 1 (one) of whom died. Therefore, it is very important to apply personal hygiene and food sanitation when preparing food, including snacks in the school canteen. Snacks in the school canteen have a very important role in maintaining children's health through the healthy food they sell, but school canteen snacks also have the opportunity to be polluted physically, chemically or biologically. It is because of this that researchers are interested in analyzing the application of personal hygiene and food sanitation for food handlers in the school canteen located at SMPN 9 Kendari canteen by using a qualitative research type. Determination of research informants using purposive sampling with a total of 9 informants studied.

Methods: This type of research is descriptive qualitative with a phenomenological approach to determine Personal Hygiene and Food Sanitation in food handlers in the Canteen of Public Junior High School 9 Kendari, Kadia District, Kendari City in 2022. The informant selection technique used the sample method using a purposive sampling method with a total of 9 informants.

Results: Based on research conducted at 5 canteens at SMPN 9 Kendari, it was found that there were still several aspects that were not in accordance with Permenkes No. 1096/Menkes/Per/VI/2011 concerning Jababoga Sanitation Hygiene. The non-compliance referred to, for example, is that there are still food handlers who do not use complete PPE when processing food, lack of storage places for food or finished food, inappropriate food covers and no cover when food is served. If you look at it as a whole with reference to the applicable regulations regarding food processing starting from the selection of food ingredients to serving food, then all canteens have not complied with or are in accordance with these regulations because each canteen studied still has some deficiencies in every aspect.

Conclusion: Not all of the implementation of personal hygiene and food sanitation in the 5 canteens of SMPN 9 Kendari has been carried out properly according to Permenkes No. 1096/Menkes/Per/VI of 2011 by food handlers. The five canteens still do not follow food processing guidelines, starting from sorting food ingredients to serving finished food. The disadvantages of each canteen are different, for example there are canteens that do not have a place to store food or finished food, there are canteen owners who do not use complete PPE when processing food, and so on.

Keywords: Hygiene; Sanitation; Food; Canteen

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1. Introduction

Incidents of food poisoning are usually caused by ready-to-eat food that has been contaminated with bacteria or microbes. Food poisoning can be caused by poor food handler hygiene during the food processing process. In addition to food poisoning, improper food processing by food handlers can cause health infections. Infections that can be transmitted through food handlers include *Staphylococcus aureus* which is transmitted through the nose and throat, *Clostridium perfringens*, *Streptococcus*, *Salmonella* which can be transmitted through the skin[1].

Global data released by the World Health Organization (WHO) in 2019 states that around 600 million people worldwide fall ill after consuming contaminated food, and as many as 420,000 fatal cases occur each year[1].

Data from the Directorate of Environmental Health and the Center for Public Health Emergency Operations (PHEOC) of the Ministry of Health of the Republic of Indonesia (Kemenkes RI) note that food poisoning outbreaks are in the order of the 2nd largest outbreaks after Diphtheria Outbreaks, where incident cases consist of 163 incidents, 7,132 cases with Case Fatality Rate (CFR). Data from the Food and Drug Monitoring Agency (BPOM) also noted that the morbidity rate in 2021 reached 64.90%, a drastic increase from 2019 and 2020, namely 45.29% and 46.62%, so it needs special attention[2].

Data released by the Food and Drug Supervisory Agency (BPOM) in Kendari City, Southeast Sulawesi, in 2021 there were 256 cases with a total frequency of 49 cases. namely 25 cases (51.02%) with a total of 232 sufferers, 1 (one) of whom died[3].

Therefore, it is very important to apply personal hygiene and food sanitation when processing food without exception of snack foods in the school canteen. Snacks in the school canteen have a very important role in maintaining children's health through the healthy food they sell, but school canteen snacks also have the opportunity to be polluted physically, chemically or biologically.

Based on the description of the background above, the author is interested in conducting research with the title Analysis of Personal Hygiene and Food Sanitation in Food Handlers in the Canteen of Public Junior High School 9 Kendari, Kadia District, Kendari City in 2022

2. Material and methods

This type of research uses descriptive qualitative research with a phenomenological approach. The methods used in this study are in-depth interviews and observations through a check list sheet to obtain data and information related to Personal Hygiene and Food Sanitation Analysis of Food Handlers in the Canteen of State Junior High School 9 Kendari, Kadia District, Kendari City in 2022. The location in this research is State Junior High School 9 Kendari, Kadia District, Kendari City in March 2023 until completion. Sources of information from this research were obtained from several informants using purposive sampling method. Informants will be grouped into key informants and ordinary informants. The key informants amounted to 5 (five) people, namely the canteen owner, then ordinary informants amounted to 4 (four) people, namely teachers and students who are consumers of the State Junior High School Canteen 9 Kendari. So that the total number in this study was 9 (nine) informants.

3. Results

3.1. Gender

The gender diversity of the informants can be seen in table 1 below

Table 1 Distribution of informants by gender at SMPN 9 Kendari

No	Gender	Amount	Percentage
		(n)	(%)
1	Laki-laki	3	33.33
2	Perempuan	6	66.66
	Jumlah	9	100%

Table 1 shows that there were 3 male informants with a percentage (33.33%), while there were 6 female informants with a percentage of 66.66%.

3.2. Education

The diversity of educational levels of the informants can be seen in table 2 below:

Table 2 Distribution of Informants Based on Education Level

No	Level of education	Amount	Percentage
		(n)	(%)
1	SD/Sederajat	0	0
2	SMP/Mts Sederajat	3	33.33
3	SMA/MA/Sederajat	2	22.22
4	Diploma	0	0
5	S1	4	44.44
6	S2	0	0
7	S3	0	0
Jumlah		9	100%

Table 4.2 shows 3 informants with a junior high school level of education (33.33%), 2 informants with a percentage of high school education (22.22%), while 4 informants with an undergraduate level of education (44.44%).

3.3. Years of Service

The diversity of informants based on years of service can be seen in table 3 below:

Table 3 Distribution of Informants Based on Working Period

No	Working Time (Years)	Amount	Percentage
		(n)	(%)
1	0-5	3	60
2	6-10	2	40
3	11-15	0	0
4	16-20	0	0
5	21-25	0	0
6	26-30	0	0
Jumlah		5	100%

Table 4.3 shows 3 informants with 0-5 years of service with a percentage (60%), while 6-10 years of service with 2 informants with a percentage (40%)

4. Discussion

4.1. Selection of Food Materials

The selection of food ingredients is the first step of the food processing process where the food ingredients to be processed are checked first to ensure the food ingredients are free from defects, in good condition, and the food ingredients are at the appropriate temperature conditions. Bad food ingredients will increase the chances of

contamination discrepancies, product weight, and waste, or product receipt that does not meet the desired specifications[4].

In this case the selection of food ingredients, namely wet food ingredients in good quality, fresh and not rotten; free from chemicals and toxins such as (formalin, pesticides and others); food ingredients are obtained from trusted sources (traditional markets that are kept clean, modern markets such as supermarkets and others)[5].

Based on the results of interviews with key informants, it is known that the owner of the canteen at SMPN 9 Kendari buys packaged food ingredients that have been registered and labeled such as nuggets, cooking oil and food spices, where these food ingredients are purchased at shops and markets. Meanwhile, non-packaged (raw) wet food ingredients such as chicken and bananas do not have labels. So to find out whether the condition of the food ingredients is good or not for the canteen owner to process, just pay attention to the condition of the food ingredients. In this regard, based on the results of observations made by researchers at the SMPN 9 Kendari canteen, the food ingredients that are ready to be processed by the canteen manager are all still in the good category. This means that all packaged food ingredients are labeled and registered and non-packaged (raw) food ingredients are fresh, new and not damaged or spoiled.

This research is in line with research conducted by Rina Fauziah and Suparmi with the title Application of Food Management Sanitation Hygiene and Knowledge of Food Handlers in 2022 that the selection of food ingredients by food handlers fulfills the requirements because food ingredients are purchased at official places (angso duo) food ingredients such as vegetables - Vegetables are fresh, not damaged and not deformed. Foodstuffs such as meat, milk, eggs, fish, are fresh and undamaged. Packaged food has a label and brand, is officially registered, and has not expired. The good quality of food ingredients can be seen through their physical characteristics and quality[6]. Good quality food ingredients, namely food that is free from pollution including chemical contamination such as pesticides and other damage.

4.2. Storage of Foodstuffs

Storage of food ingredients aims to prevent damage to food ingredients that can occur due to bacterial contamination, natural events or human treatment. As in fruits or other raw materials that experience mechanical damage caused by friction, pressure, impact and others. To reduce the occurrence of damage, it can be controlled by preventing bacterial contamination and preparing a special place for storage so that food ingredients are not contaminated with one another. Food spoilage is influenced by several factors including the type of material, temperature, humidity and dryness, air, and light. So that correct and appropriate techniques/ways are needed for storing food ingredients with the aim of having a long shelf life, preventing spoilage or damage to food ingredients[7].

There are several types of storage for raw/wet food and dry food. Generally, raw/wet food ingredients are placed in low-temperature storage such as refrigerators/refrigerators/freezers because bacterial contamination tends to be slower than placed in open dry storage cabinets. In this case food ingredients are placed separately from other non-food raw materials; storage of foodstuffs in a closed condition; clean food storage containers[5].

Based on the results of interviews with key informants, namely canteen owners, it was found that three out of five canteens interviewed had storage areas in accordance with Permenkes Number 1096/Menkes/Per/VI/2011. They prepared a refrigerator with temperature control that still works and shelves as a place to store food. Foodstuffs such as flour, sugar and oil are stored in dry racks while food items which deteriorate quickly are stored in the refrigerator. In this case, foodstuffs are stored according to their type and place. The statement from the key informant was supported by statements from ordinary informants who confirmed that there was a food storage area with temperature control that was still functioning.

The results of these interviews were also strengthened by the results of observations made at the research locations in three canteens which showed that food ingredients were stored according to the type and place as attached in the attachment. Referring to Permenkes Number 1096/Menkes/Per/VI/2011, the distance between the floor and food ingredients is appropriate and exceeds 15 cm and the distance of food materials from the ceiling exceeds 60 cm.

This is similar to the research conducted by Nussy and Amerta Nutr with the title Description of the Application of Food Sanitation Hygiene Principles in the Canteen of PT. Semen Indonesia (Persero) Tbk, Tuban, East Java in 2021 that the storage of food ingredients is in accordance with the type of food ingredients and their temperature, for example dry food ingredients such as rice and flour are stored at room temperature 25°C, fresh food ingredients such as green vegetables are stored in storage cool with a temperature of 10°C, wet food ingredients such as fish and meat are stored in very cold storage (freezing) with a temperature of 0°C. while dry food storage racks are in accordance with the

principle of storing food ingredients, namely not attached to the floor at least 15 cm, not attached to walls and ceiling with a distance of 5 cm and 60 cm respectively. This is so that the stored food is not damaged or mold grows as a result of sticking to damp walls or floors[8].

On the other hand, there are two canteens that do not have storage areas such as refrigerators/refrigerators because they do not have electricity so wet food ingredients are stored on dry shelves/cabinets. in the refrigerator at a certain temperature to keep food from spoiling. These two canteens are located in a corner of the SMPN 9 Kendari environment which has a building in the form of a semi-permanent building made of wood with walls that do not fill all the building areas. This is certainly not in accordance with Permenkes Number 1096/Menkes/Per/VI/2011 and even this condition makes food very susceptible to contamination with unhealthy particles in the open environment, such as bacteria, dust, and others.

This research is in line with research from Erin Rahmi Ramadani, Fifi Nirmala G. and Agnes Mersatika H. with the title Hygiene and Sanitation of Food Snacks in Elementary School Canteens in Buke District, South Konawe Regency in 2016 that food sold open can increase the risk of food contamination by the environment, both through the air, dust, vehicle fumes, and even insects. Food sold on the side of the road will be very easily exposed to dust and fumes from flying vehicles[9].

4.3. Foodstuff Processing

Processing is a process or activity of changing food ingredients from raw to ready-to-eat food by adding spices, using certain methods, or providing other special treatment. Good, clean and correct food processing will produce healthy and safe food for consumption and the conditions for good food consumption are at the maturity level, free from contamination at the production and presentation stages[10].

According to Permenkes Number 1096/Menkes/Per/VI/2011, food processing facilities or kitchens must meet the technical requirements for sanitation hygiene to prevent the risk of contamination of food and to prevent the entry of flies, cockroaches, rats and other animals. Based on the results of interviews with key informants in the canteen, SMPN 9 Kendari already has an area, but one of the key informants said that the kitchen was a mess because there were items from the canteen owner.

The results of observations made at the research location of SMPN 9 Kendari showed that there were three canteens that had a kitchen or an area for managing food but one of the canteens was a mess because there were lots of things from the canteen owner and the other two canteens did not have a kitchen or an area for managing food because of the map. each canteen is narrow enough to make it impossible to build a kitchen or install a partition between the food processing and food serving areas.

In the case of processing raw food ingredients into finished food, you should not use excessive additional synthetic ingredients because they can affect the body's health in the long term. According to Permenkes Number 1096/Menkes/Per/VI/2011, Food Additives (BTP) used must meet the requirements according to applicable regulations and food/finished food processors must use gloves, masks, head coverings and other protective equipment. In this regard, canteen owners should handle raw food/finished food using PPE to prevent contamination of food/finished food from bacteria[5].

Based on the results of interviews in the SMPN 9 Kendari canteen, the owner of the canteen does not use synthetic materials as additives to mix food ingredients into finished food. The observation results also show that four out of five canteen owners use personal protective equipment when handling food/finished food. However, each canteen owner does not use complete personal protective equipment, some only use gloves and some only use aprons without other protective equipment in accordance with Permenkes Number 1096/Menkes/Per/VI/2011. Then one other canteen did not use PPE at all

Research conducted by Miranti and Adi (2016) entitled The Relationship between Knowledge and Attitude and Personal Hygiene of Food Handlers in Girls' Dormitory Food Service states that there are several important procedures for food handlers, namely washing hands before and after handling food ingredients, wear complete personal protective equipment and personal hygiene and health. This is intended to reduce the potential for food contamination which can cause problems for health and survival[11].

4.4. Finished Food Storage

The biggest hazard in cooked food is the presence of pathogenic microorganisms in food due to contamination of food during food processing or cross contamination through containers or food handlers and then allowed to cool at room temperature. The optimum conditions for pathogenic microorganisms in ready-to-eat food will result in the microorganisms multiplying within 1-2 hours. Cooked food storage containers must be closed and must be made of strong, sturdy, waterproof and easy to clean[5].

Based on the results of interviews with key informants, it can be seen that four out of five canteens at SMPN 9 Kendari are in accordance with Permenkes Number 1096/Menkes/Per/VI/2011 that ready-to-serve ready-to-serve food is stored in a closed place or container. Meanwhile, another canteen stores finished food in containers that do not have covers.

The results of observations made at the canteen at SMPN 9 Kendari show that all canteen owners separate the types of food and do not mix each type of prepared food and raw food in one container. It's just that of the five canteens observed, there was one canteen that did not have a cover for prepared food. This of course can make dust and dirt easily enter into the finished food.

This research is in line with research conducted by Ni Luh Putu Purnama Dewi and I Nyoman Gede Suyasa with the title Description of Canteen Sanitation for Middle School 2 South Kuta Public Middle School, Badung Regency in 2018 that all canteens have met the requirements but there are still 2 requirements that have not been met from the canteen This means that all canteens/stalls are not protected from dust and food storage areas sold in stalls/canteens are not protected from insects and other animals[12].

4.5. Transportation of Finished Food

According to Permenkes Number 1096/Menkes/Per/VI/2011 that food transportation must not be mixed with hazardous and toxic materials (B3), use special vehicles for transporting finished/cooked food and must always be hygienic, each type of finished food has its own container and covered, the container must be intact, strong, not corroded and of adequate size with the amount of food to be placed, the contents must not be full to avoid thawing of food vapor (condensation) and transportation for a long time, the temperature must be considered and regulated so that the food remains hot at temperature of 60 °C or stay cold at 40°C[5].

Based on the results of interviews with key informants, in this case the owner of the canteen at SMPN 9 Kendari, all canteens use food containers made of intact, strong, anti-rust and easy to clean materials. However, all canteens only use one transport container for all types of food to be served.

In line with the results of the interviews, the results of the observations made also showed that there were four canteens that had containers for transporting food according to the type of food and only one canteen had containers for transporting finished food without covers. Results of observations made This can be seen in the attached attachment.

The transportation and storage of food according to the type of food is intended to make it easier to choose the food to be consumed. This can prevent factors that can influence a person to develop food-related allergic diseases. Research conducted by Rina Fauziah and Suparmi with the title Application of Food Management Sanitation Hygiene and Knowledge of Food Handlers in 2022 that food transportation is not transported using hygienic transportation, the place for transporting food is not transported by the food handlers themselves but is transported by students, the place for transporting food so in a rusty state, it is not covered and there are no special roads for the transportation of food so that when special vehicles are filled with food the condition of the food can cause condensation, this is not in line with the regulations. Transportation of finished food must use a special vehicle and must always be hygienic, each type of finished food must be closed and not rusty and the contents of the food must not be full to avoid melting food vapor (condensation)[7].

4.6. Serving the Food So

This process is the final stage of the processing processing. The principle of serving food in containers for each type of food is placed in a separate container and kept closed. The goal is that food is not cross-contaminated, if one food is contaminated the others can be saved and extend the serving time of food according to the level of food insecurity[5].

Based on the results of interviews with informants at the SMPN 9 Kendari Canteen, the food to be served is stored in closed containers and separately according to the type of food. In serving the desserts used are not in accordance with

applicable regulations where they still use plastic. In addition, the canteen owner has used a food serving container that complies with applicable regulations in the form of a box that has a separator between each type of food and leftover food from the canteen owner which is not served/resold. The results of observations made at the canteen of SMPN 9 Kendari were in line with the results of the interview.

This research is in line with research conducted by Elfira Agustin with the title Description of Knowledge, Attitudes and Sanitary Hygiene Actions of Snack Food Vendors at Cipinang Besar Utara Elementary School, East Jakarta Municipality in 2014 that most traders use closed containers when serving food to buyers. Traders also have good knowledge about food serving containers with separators between different types of food inside. Traders also use clean containers when food is served. In addition, traders also do not provide leftover food because they serve food according to the buyer's request so that the food is not damaged or stale[13].

4.7. Suffering from Infectious Diseases Such as Skin Diseases, Ulcers or ISPA

Based on the results of interviews with key informants, in this case the owner of the canteen at SMPN 9 Kendari said that he was not suffering from an infectious disease such as skin disease, boils or ISPA. This was also confirmed and supported by ordinary informants.

In line with the results of the interviews, the results of observations made on canteen owners showed the same thing where key informants were not found or obtained, namely canteen owners who had skin diseases, ulcers or ISPA, this is in line with research conducted by Muhammad Hakam Arifin and Yuni Wijayanti with the title Food Hygiene and Sanitation in Elementary School Canteens and Madrasah Ibtidaiyah 2019 that the results showed that the majority of respondents, namely 20 people met the requirements not to suffer from easily transmitted diseases such as coughs, colds, influenza, diarrhea, similar stomach. This can be seen from the majority of respondents who were not suffering from certain diseases that were easily transmitted while being observed and respondents who claimed not to work when they were sick[9].

4.8. Washing Hands Before and After Food Processing

Personal hygiene refers to the physical cleanliness of a person and humans are a potential source of disease-causing microbes. Efforts to avoid contamination of snacks by applying high standards of personal hygiene. Terms of serving food must maintain cleanliness, must be accommodated with clean utensils and behavior in serving must be healthy and clean too. Making it a habit to wash your hands with soap can be useful for preventing the spread of germs and bacteria for diarrheal diseases, worm infections and so on.(15)Therefore hand washing is the main thing that must be done by workers involved in food processing. Hand washing, although it appears to be a light activity and is often overlooked, has proven to be quite effective in preventing food contamination. Washing hands with soap followed by rinsing will remove many of the microbes on the hands[16].

Based on the results of interviews with key informants, in this case the canteen owner of SMPN 9 Kendari, it was shown that all canteen owners had implemented hand washing with soap before and after processing food to prevent the spread of disease and control infection. Based on the results of interviews with key informants, in this case the owner of the canteen at SMPN 9 Kendari said that he was not suffering from an infectious disease such as skin disease, boils or ISPA. This was also confirmed and supported by ordinary informants.

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done by workers involved in food processing. Hand washing, although it appears to be a light activity and is often overlooked, has proven to be quite effective in preventing food contamination. Washing hands with soap followed by rinsing will remove many of the microbes on the hands[19].

Based on the results of interviews with key informants, in this case the canteen owner of SMPN 9 Kendari, it was shown that all canteen owners had implemented hand washing with soap before and after processing food to prevent the spread of disease and control infection. Personal protective equipment when processing food, four out of five canteen owners do not use complete personal protective equipment where there are canteen owners who only use aprons, masks and some only use gloves. Meanwhile, another canteen owner did not use personal protective equipment at all because he had already washed his hands[16].

This research is in line with research conducted by Upi Almasari and Corie Indria Prasati with the title Individual Hygiene of Food Handlers in the SDN Model Canteen and its Impact on Total Plate Count (ALT) in Food in 2018 that according to the results of individual hygiene some food handlers do not use PPE, namely masks, gloves and aprons besides that there are food handlers who use hand jewelry when processing food. It should be noted that although some food handlers have used personal protective equipment when processing food, cleanliness of personal protective equipment cannot be ruled out[20].

4.10. Food Processor Talking While Processing Food

Personal hygiene or personal hygiene is very important, especially to keep ourselves healthy and reduce the risk of disease. For a worker, maintaining personal hygiene, in this case the mouth, because the mouth is a place for bacteria to nest, for this reason, it is better to wear a mask and not talk much when preparing food so that there is no spread of bacteria from the mouth.

Based on the results of interviews with key informants in the canteen at SMPN 9 Kendari, it was shown that three out of five canteen owners spoke while preparing food, while the other two did not speak while processing food. Food serving all the canteen owner spoke. This is in accordance with the results of observations made by researchers on key informants, namely the owner of the SMPN 9 Kendari canteen. It was found that all canteen owners spoke when serving food. This was because buyers asked about prices and about the food served.

This research is in line with research conducted by Suci Fatmawati, Ali Rosidi and Erma Handarsari with the title Hygiene Behavior of Food Processing Based on Knowledge of Hygiene Processing Food in Food Administration at the Student Sports Education and Training Center Central Java 2013 that the mouth is a place for bacteria to nest, for this reason it is better to use a mask and not talk much when preparing food so that there is no spread of bacteria from the mouth. However, in practice food processing workers do not use masks and talk or chat while processing food.

4.11. Use of Jewelry When Processing Food

Food handlers who are directly involved with food processing and serving should use cosmetics and jewelry that are not excessive/flashy, and are even advised not to use jewelry, especially when processing and serving food, except for wedding rings that are not decorated (plain) (Permenkes 2011)[5]. Based on the results of interviews with key informants in the canteen at SMPN 9 Kendari, it was shown that all canteen owners did not use jewelry when they were about to process food.

The results of these observations were different from the results of the interviews with the key informants above where the informants said they did not use jewelry when processing, but the facts were different from the results obtained during the observation where there were two of the five key informants who used jewelry in the form of gold bracelets and rings when processing food. This of course has a risk as a medium for spreading bacteria to food because the skin at the bottom of the jewelry can be the right place for bacteria to grow and reproduce, thereby reducing the effectiveness of washing hands with soap.

This research is in line with research conducted by Sri Maywati, Lilik Hidayanti and Nur Lina with the title Knowledge and Hygiene Practices of Handlers at Snack Food Vendors Around Tasikmalaya City Elementary School in 2019 that 36% of respondents had dirty nails. The study stated that there was a significant relationship between food handlers' fingernails and food contamination[11]. According to Fathonah (2005) fingernails are often a source of contaminants or cause cross contamination. The use of ring jewelry can also be a medium for contamination of food ingredients because it is possible for the jewelry to become a place for accumulation of dirt, food scraps and microbes that are hidden between the jewelry.

5. Conclusion

Based on the results of research that has been carried out by researchers regarding the Analysis of Personal Hygiene and Food Sanitation in Food Handlers in the Canteen of Junior High School 9 Kendari, Kadia District, Kendari City in 2022, it can be interpreted as follows:

- Personal hygiene of food handlers in the canteen of SMPN 9 Kendari on independent variables from infectious diseases such as ulcers, skin diseases or ISPA and washing hands before and after processing food meets the requirements for food sanitation hygiene while on the variable use of personal protective equipment and speaking when Food processing does not meet the requirements for food service sanitation.
- Food sanitation in the Canteen of SMPN 9 Kendari on the variable selection of food ingredients has fulfilled the hygiene and sanitation requirements for catering services. As a variable of food storage and processing, there were three food handlers who met the hygiene sanitation requirements for catering services and two other handlers who did not meet the hygiene sanitation requirements for catering services. As a variable of storage and transportation of prepared food, there were four food handlers who met the food service sanitation hygiene requirements and one food handler who did not meet the food service sanitation hygiene requirements. The food serving variable in the SMPN 9 canteen does not meet the 2011 Minister of Health requirements concerning food service sanitation hygiene.

Compliance with ethical standards

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Disclosure of conflict of interest

All authors in the making of this scientific article have no conflict of interest.

Statement of informed consent

All authors state that this research was conducted without any conflict of interest.

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