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DETERMINANTS OF HYGIENE PROCESSED FOOD HANDLERS IN THE FOOD HOUSEHOLD INDUSTRY IN MUKOMUKO DISTRICT

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ABSTRAK

Globally, 420,000 deaths are known to occur each year due to consuming contaminated food. In Indonesia, the most cases of food poisoning (34.72%) come from household processed food. The results of the inspection of most IRTPs in Mukomuko Regency did not implement good hygiene. This study aims to determine the determinants of hygiene of processed food handlers at IRTPs in Mukomuko Regency. This study uses an observational analytical method with a cross-sectional design, which was conducted in September 2023 - June 2024. The population is 45 IRTPs who have permits. data collection by observation and interviews with questionnaire instruments. data were analyzed univariately, bivariately with the chu square test with Confident Interval (CI <95%) with a significance limit (α <0.05) and continued with multivariate analysis with multiple logistic regression to see the dominant relationship of the research variables. The results of the univariate analysis showed that processed food handlers had poor hygiene (42.2%), age <46 years (64.4%), low education (46.7%), low income (51.1%), lack of knowledge (35.6%), lack of attitude (44.4%), never attended training (4.4%) and received poor supervision from officers (42.2%). Bivariate analysis showed a significant relationship between education, income, knowledge, attitude and supervision of officers with hygiene of processed food handlers. Multivariate analysis showed that attitude was the dominant factor influencing hygiene of processed food handlers (p value = 0.008 and OR = 19.5). The most dominant factor related to the hygiene of processed food handlers is the attitude of the processed food handlers. The need for policies in the form of regional regulations on IRTP licensing, cooperation between related stakeholders, increasing hygiene awareness in IRTP by utilizing local wisdom and optimizing the quality and quantity of supervision.

Keyword: *Hygiene, IRTP, attitude of the processed food handlers*

INTRODUCTION

Food safety is a global issue that must be addressed, The increase in the world's population, which is estimated to reach 9 billion people by 2050, will also increase the need for safe food and will potentially ignore good food standards. (World Economic Forum (WEF) *et al.*, 2018). Unsafe food if consumed will cause poisoning and foodborne illnesses, however, not everyone who contracts a

foodborne illness will be diagnosed and/or recorded in the public health system (On & Rahayu, 2017).

An estimated 600,000,000 cases of foodborne illness globally, or almost 1 in 10 people, in the world get sick after consuming contaminated food and 420,000 people die each year. 40% of children under the age of 5 suffer from the burden of foodborne diseases, with 125,000 deaths each year. Another impact is the obstruction of socio-economic development, which is detrimental to the national economy and damages the national health system. It also contributes to the poor nutritional status of the community, especially infants, children, the elderly and the sick (WHO, 2022).

Indonesia faces challenges related to low food quality. This factor is related to the lack of implementation of hygiene and sanitation in the food processing process by food handlers. However, in developing countries, such as Indonesia, the application of the method known as Good Food Processing Methods (CPPB) has not been fully implemented, both by large and small-scale food industries. This situation increases the risk to public health because the food produced can cause various health problems. Lack of awareness and proper behavior of food handlers at IRTP in implementing CPPB is the main cause of the increasing health risks related to food consumption (Handayani et al., 2015). In Indonesia, the current phenomenon is the increasing production and consumption of home-cooked food products that dominate the market, driven by practicality and ease in obtaining business permits. The presence of various home-cooked food products is a response to the demands of a modern lifestyle that demands fast and practical solutions in meeting consumer needs. However, the rapid growth in this sector also raises serious challenges related to food safety. The current conditions must be accompanied by guarantees of food safety through good behavior by food handlers.

Personal hygiene is a clean attitude of food handler behavior to prevent contamination of food including various things such as maintaining health, washing hands, maintaining cleanliness of the nose, mouth, teeth, and ears, as well as maintaining clean clothes and living a healthy lifestyle (Jaya & Meilan, 2017). Therefore, personal hygiene is a health behavior that can affect food safety.

Providing relevant information plays an important role in increasing knowledge and influencing food safety behavior (Shi et al., 2020). Food safety communication strategies are crucial in every country, aiming to provide a means for individuals to protect their health from hazardous foods and be able to make the right decisions to avoid the risk of unsafe food (Baba & Esfandiari, 2023). Research shows that there is a relationship between training and the hygiene behavior of food handlers (Baringbing et al., 2023). The results of other studies also show that there is a relationship between supervision of health workers and the behavior of implementing food processors' hygiene and sanitation in the household food industry (Putri et al., 2023).

Based on data from the Food and Drug Supervisory Agency (BPOM RI), in Indonesia there were 72 cases of extraordinary food poisoning incidents in 2022. This number increased by 44% compared to the previous year of 50 cases. The number of people who experienced food poisoning during 2022 was 5,505 and 2,788 people experienced symptoms of illness or attack rate and 5 people died. The findings of extraordinary cases of food poisoning mostly came from household processed foods, namely 34.72%.

The Bengkulu Provincial POM

Office has also collected data on poisoning cases. The number of data on food poisoning cases in Bengkulu Province collected was 64 cases, the Food Household Industry (IRTP) facilities in 2022 were 998 facilities with an inspection target of 24 and 9 IRTP facilities (37.5%) did not meet the requirements (TMK). The type of TMK in IRTP facilities is hygiene and sanitation that does not meet the requirements (BPOM Bengkulu, 2023).

Based on the results of interviews with IRTP facility supervisors at the Mukomuko Regency Health Office and a document review, it was found that in Mukomuko Regency, IRTP facilities are processed food businesses that are carried out together with residences (houses), the maximum number of workers is 4 people, using tools that are still manual and semi-automatic and the age of the IRTP is mostly less than 10 (ten) years (Mukomuko Health Office 2024).

Based on data from the Mukomuko District Health Office, in 2022 there were 49 IRTPs recorded and in 2023 there was an increase to 101 IRTPs (106.12%), but only 49 IRTPs were licensed. Based on the results of the inspection findings of the supervisory officers (District Food Inspector), it was found that most IRTPs were at level II (76%) or there had been deviations from the requirements of Good Food Production Practices in most IRTPs. Most IRTPs do not meet hygiene requirements when handling food, such as food ha. The hygiene aspect of IRTP actors is an important problem that must be addressed and is most often ignored or violated by IRTPs in Mukomuko Regency. In addition, the increase in the number of IRTP from 49 IRTP in 2022 to 101 IRTP in 2023 (106.12%), it is feared that the supervision from the relevant agencies will not be optimal which will result in neglect of food safety and the large number of public health problems that will arise. Therefore, the author is interested in conducting a study on "Determinants of Hygiene of Processed Food Handlers in the Food Home Industry in Mukomuko Regency".

RESEARCH METHOD

Variables in this study include Hygiene of processed food handlers at IRTP, age, education, income, knowledge, attitude, training and supervision of officers measured by interview using questionnaires and observation of hygiene of processed food handlers. Quantitative research type with observational analytical method using cross sectional approach (Sutriyawan, 2021). This research received an ethical clearance letter No.313/UN.16.2/KEP-FK/2024 dated June 19, 2024.

The number of samples from this study is the total population, namely 49 food handlers who are IRTP owners in Mukomuko Regency. From the results in the field, it was found that there were 4 IRTP facilities that were no longer active so that the sample was only 45 people. the sampling method is total sampling because the population is less than 100.

Analysis of interview data are processed univariately, bivariate using chi square test with Confident Interval (CI <95%) with a significance limit (α <0.05) and continued with multivariate analysis with multiple logistic regression to see the dominant relationship of the research variables.

RESULTS AND DISCUSSION

A. Univariate Analysis Result

In table 1, it is known that based on the characteristics of food handlers in the research variables described.

1. Age

The results of the study showed that most respondents (64.4%) were <46 years old. The results of this study are in line with research conducted by Nurfikrizd & Rustiawan on the relationship between individual characteristics and personal hygiene practices of food safety in food handlers, it is known that most respondents (61%) are <46 years old (Nurfikrizd & Rustiawan, 2020). Likewise, research conducted by Prianto on the hygiene behavior of food handlers in the brem home industry, most respondents (73.3%) were <46 years old (Prianto, 2017).

Tabel 1. Respondent Characteristics

Variable	Frequency	%
Age		
< 46 years	29	64,4
≥46 years	16	35,6
Education		
Low	21	46,7
Middle	13	28,9
High	11	24,4
Income		
Low	23	51,1
High	22	48,9
Knowledge		
Poor	16	35,6
Good	26	64,4
Training		
Never	2	4,4
Ever	43	95,6
Supervision of Officers		
Poor	19	42,2
Good	26	57,8
Food Handler Hygiene		
Poor	19	42,2
Good	26	57,8

Age is closely related to a person's way of thinking and behaving. as a person gets older, their experience also increases which contributes to increasing knowledge about an object, besides that maturity also affects a person's ability to act better (Priyoto, 2014), so that the more mature a person is, the better their knowledge of hygiene when processing food.

Supervision programs that are in the form of coaching and regular health checks are also a must considering the age of those handling processed food in the elderly group who are vulnerable to disease.

2. Education

The results of the study showed that almost half of the respondents had low education (46.7%) in this study, education was divided into three categories of low education (did not graduate from elementary school/equivalent elementary school/equivalent junior high school), secondary education (equivalent high

school) and higher education (diploma/bachelor's/master's/college). The results of this study are in line with research conducted by Amelia and Adi on food safety for food handlers at IRTP. It is known that the level of education of most respondents (47.4%) is low (Amelia & Adi, 2019). Likewise, research conducted by Prianto on food handler hygiene and sanitation in the IRTP environment, most respondents (63.3%) have low education, namely not graduating from elementary school, graduating from elementary school and junior high school (Prianto, 2017).

This study revealed that most respondents who handle processed food in Mukomuko Regency have low education. Respondents with low education often do not implement hygiene practices because they do not have sufficient access to information on hygiene standards and have a low understanding of information related to hygiene in producing food. Through education, a person gains an understanding of what is considered good and bad, as well as what is allowed and not allowed in their behavior (Rachmawati, 2019).

Training with easy-to-understand educational materials can help increase awareness and understanding of the importance of hygiene in food processing for IRTP actors.

3. Income

The results of the study showed that most respondents (51.1%) had low incomes. This study is in line with research conducted by Bantie et al. on food safety and hygiene practices. It is known that most respondents (63.4%) have low incomes (Bantie et al., 2023). The results of this study are not in line with research conducted by Suryani and Jannah on the implementation of food sanitation hygiene, it is known that the income of most respondents (60%) has high incomes (Suryani & Jannah, 2021).

This study revealed that most processed food handlers in Mukomuko Regency have low incomes (below the UMK) or less than IDR 2,715,839.43 and there are still processed food handlers who do not meet hygiene requirements such as not wearing Personal Protective Equipment (PPE). Adliyani et al. also stated that economic level affects clean and healthy living behavior (PHBS) (Adliyani et al., 2017). The inability of IRTP actors to provide hygienic support equipment (PPE) when producing food because their income is still very minimal so they cannot afford to buy PPE. Efforts made to overcome this problem, hygiene in food processing for IRTP actors is a requirement to receive social assistance and assistance from the government in the form of PPE.

4. Knowledge

The results of the study showed that most respondents (64.4%) had good knowledge. The results of this study are in line with the study conducted by Rivaldi et al. on good food processing methods at IRTP, it is known that most respondents (60.6%) have good knowledge (Rivaldi et al., 2023). This study is different from the study by Baringbing et al. on the hygiene behavior of food handlers at IRTP, it is known that most respondents (51.1%) have poor knowledge (Baringbing et al., 2023). The study conducted by Amalia et al. on food safety of food handlers at IRTP is also not in line with this study, most respondents (56.1%) of food handlers have poor knowledge (Amalia et al., 2015).

This study revealed that most of the respondents' hygiene knowledge was quite good. Knowledge or thinking ability is an important part that influences how a person acts (Pakpahan et al., 2021). The more knowledge a person has about good

hygiene, the more likely their behavior is to implement good hygiene practices.

To improve knowledge about hygiene for IRTP actors, it is necessary to hold training on how to implement good hygiene when processing food, provide information through social media that discusses interesting topics related to hygiene, hold seminars or workshops so that IRTP actors are more exposed to information about hygiene in processing food.

5. Attitude

The results of the study showed that most respondents (55.6%) had a good attitude. The results of this study are in line with research conducted by Baringbing et al. on the hygiene behavior of food handlers at IRTP that most respondents (52.9%) had a good attitude (Baringbing et al., 2023). Research conducted by Amalia et al. on food safety of food handlers at IRTP is not in line with this study, most respondents (50.9%) did not support their attitudes (Amalia et al., 2015).

This study revealed that most of the respondents' hygiene attitudes were quite good. The attitude that has been formed in a person will influence the way they behave towards the objects that are the focus of the attitude, the attitude will make a person act in a way that is typical of the object (Pakpahan et al., 2021). The better a person's attitude about hygiene in processing food, the more likely they are to implement good hygiene practices. However, in this study, processed food handlers were still found to have poor attitudes when processing food.

A good attitude is a positive attitude or supports good hygiene when processing food which will affect good hygiene behavior when processing food. A poor attitude towards hygiene is a negative attitude or does not support good hygiene when processing food which will affect poor (bad) hygiene behavior when processing food.

Efforts that can be made are to involve traditional figures/ and utilize local wisdom in several food safety improvement programs, especially for IRTP. Other efforts that need to be made are to provide rewards for food handlers who implement hygiene practices, for example in the form of certificates that are used as requirements in obtaining social assistance or assistance in the form of PPE (aprons, head coverings and masks) to further motivate them in implementing good hygiene.

6. Training

The results of the study showed that most respondents (95.6%) had attended training. The results of this study are in line with research conducted by Sihombing et al. on food safety practices at IRTP. It is known that most food handlers (52.59%) have attended training (Sihombing et al., 2017). This study is not in line with research conducted by Siddiky et al. on determinants of food safety for food handlers, it is known that most respondents (90.4%) have never attended training (Siddiky et al., 2024). This study is also not in line with research conducted by Hidayati et al. on Factors influencing good food production methods at IRTP, it is known that most respondents (85%) have never attended training (Hidayati et al., 2022).

This study revealed that most respondents who handle processed food in Mukomuko Regency have attended training on food handler hygiene. Overall, the purpose of employee training and development is to improve their abilities in the effective (attitude), cognitive (knowledge), and psychomotor (behavior) aspects, as well as to prepare them for changes and overcome obstacles that may

arise in the work (Bariqi, 2018). Processed food handlers who have undergone training should be able to implement hygiene practices well. Efforts that can be made to improve the success of training activities in overcoming hygiene problems for processed food handlers, namely training methods must be strengthened with participatory methods, practicing directly or simulating real situations to ensure that food handlers truly understand and can implement good hygiene practices. Furthermore, optimizing the routine monitoring and evaluation system to ensure the achievement of successful training activities or compliance of processed food handlers with hygiene standards.

7. Officer Supervision

The results of the study showed that most (57.8%) of the officer's supervision was good. This study is in line with the study conducted by Cahyaningsih et al. on the hygiene and sanitation practices of food handlers that most respondents (81.4%) received good supervision (Cahyaningsih et al., 2018).

This study revealed that most respondents who handled processed food in Mukomuko Regency received good supervision. With supervision, every aspect of work that needs improvement can be identified and improved (Sulfah, 2021), so that processed food handlers who receive supervision from health officers should be more compliant with good hygiene practices.

The implementation of supervision and this policy will be more effective if accompanied by strict sanctions if violations occur. In addition, regular monitoring and evaluation must be carried out to ensure that processed food handlers comply with hygiene standards.

8. Hygiene of Processed Food Handlers

The results of the study showed that half of the respondents (42.2%) had poor hygiene. The results of this study are in line with the study conducted by Sari and Mualim on the study of personal hygiene and sanitation facilities for food handlers. It was found that less than half of the respondents (40%) did not meet the requirements for personal hygiene (Sari & Mualim, 2022). The results of this study are not in line with the study conducted by Baringbing et al. on the hygiene behavior of food handlers at IRTP, which stated that most respondents (52.9%) did not have appropriate hygiene (Baringbing et al., 2023). Likewise, the study conducted by Amalia et al. on food safety for food handlers at IRTP, which stated that most respondents (61.4%) had poor hygiene behavior (Amalia et al., 2015). The most frequently unfulfilled hygiene requirements are not using PPE such as not wearing a mask when putting food into packaging (62.2%) and not wearing an apron while processing food (51.1%). In addition, there are still food handlers who do not use disposable gloves when taking food (46.7%), do not wear head coverings when processing food (37.8%), talk a lot while processing food (28.9%) and wear jewelry such as rings, bracelets, and watches when processing food (24.4%).

Food handlers can also be a source of disease transmission; therefore, Personal Protective Equipment (PPE) is needed. PPE is used by workers in addition to protecting themselves from safety threats. PPE is also used so that food products are not contaminated by food handlers (Floridiana, 2019). To protect cooked food from direct contact, tools such as food tongs, gloves, spoons, forks, and the like are used. Every food processing worker must wear an apron, hair cover, kitchen shoes and are not allowed to smoke, eat, or chew while working (Widyastuti & Almira, 2019)

The use of rings, bracelets, and watches should be avoided when processing food because these items can contaminate food. Dirt or food residue can be stored between rings and fingers which can contaminate food (Windu, 2022). Weak supervision of the food home industry (IRTP) can contribute significantly to the weak implementation of hygiene standards. The absence of clear regulations with strict supervision makes IRTP actors feel safe to ignore hygiene standards without fear of serious consequences.

To improve hygiene in food processing by Food Home Industry (IRTP) business actors, several strategic steps can be taken, such as optimizing supervision and assistance by health workers as District Food Inspectors (DFI). This program, in addition to providing guidance, must also include periodic health checks, especially for elderly processed food handlers who are susceptible to disease. Training with educational materials must be made simple and use easy-to-understand language and collaboration between the Health Office and the Industry and Trade Office is also needed, such as assistance programs for MSMEs, in this case PPE assistance provided to IRTP actors who have successfully implemented good hygiene practices. In addition, cooperation with the Social Service is also needed, where the application of hygiene in food processing can be a requirement to receive social assistance or BLT for IRTP actors who meet hygiene requirements. Activities to improve the hygiene of processed food handlers should be community-based, involving community leaders or traditional leaders in providing advice and good examples and utilizing local wisdom. In addition, strict and routine supervision by health workers who focus on feedback is not just looking for mistakes/violations and rules with clear sanctions. With this approach, it is hoped that it can improve the hygiene behavior of processed food handlers to be better and reduce the risk of contamination of food products produced by IRTP in Mukomuko Regency.

B. Bivariate Analysis

Table 2 shows the relationship between dependent and independent variables, namely:

1. Relationship between Hygiene and Age

This study states that there is no relationship between age and hygiene of processed food handlers. This is in line with research conducted by Suryani et al., it is known that there is no relationship between age and food sanitation hygiene behavior in workers making karak crackers in the home food industry with a p value = 0.147 (Suryani et al., 2021). This study is also in line with research by Handayani et al. (p value = 0.732) there is no relationship between age and the implementation of good food processing methods in IRTP (Handayani et al., 2015). In contrast to research conducted by Nurfikrizd & Rustiawan, it is known that there is a relationship between age and food safety behavior in food handlers (p value = 0.023) (Nurfikrizd & Rustiawan, 2020).

This study is also different from the study conducted by Nurlatifah which shows that as the age of food handlers increases, their hygiene behavior improves, in this case age has a contribution to hygiene behavior (Nurlatifah, 2017) and it can also be said that age is related to a person's health behavior (Deeks et al., 2009). Therefore, age plays an important role in a person's behavior, the age level of processed food handlers contributes to their hygiene behavior when processing food.

Another opinion also states that the increasing age of a person is in line with a decrease in the level of concern and

understanding, this is caused by a decrease in cognitive and psychomotor functions in pre-elderly age, which results in a person's movements or actions decreasing and slowing down (Sutarto, 2013). As age increases, a person's awareness also decreases due to a decrease in cognitive and psychomotor functions, including in food handlers. Older people often experience decreased memory and concentration. This can cause them to forget or not be fully aware of the importance of proper hygiene practices when processing food.

Table 2. Relationship between Age, Education, Income, Knowledge, Training, Officer Supervision at Officers with Hygiene of Processed Food Handlers at IRTP in Mukomuko Regency

Variable	Hygiene of Food Handlers						p-value
	Poor		Good		Total		
	f	%	f	%	F	%	
Age							
< 46	11	37.9	18	62.1	29	100	0,639
≥ 46	8	50	8	50	16	100	
Education							
Low	13	61,9	8	38,1	21	100	
Middle	5	38,5	8	61,5	13	100	0,015
High	1	9,1	10	90,9	11	100	
Income							
Low	14	60,9	9	39,1	23	100	0,022
High	5	22,7	17	77,3	22	100	
Knowledge							
Poor	14	87,5	2	12,5	16	100	0.000
Good	5	17,2	24	82,8	29	100	
Attitude							
Poor	17	85	3	15	20	100	0,000
Good	2	8	23	92	25	100	
Training							
Never	1	50	1	50	2	100	1,000
Ever	18	41,9	25	58.1	43	100	
Officer Supervision							
Poor	16	84,2	3	15,8	19	100	
Good	3	11,5	23	88,5	26	100	0,000

In addition, increasing age, the ability to learn and understand new information, including hygiene procedures, decreases, this can make it difficult for them to follow or remember good hygiene standards when processing food such as the use of personal protective equipment such as wearing aprons, gloves, head coverings and masks, in addition to other personal hygiene behaviors may also be neglected. In addition, the older a person gets, the less hygienic their eating habits become. This can also be caused by habits that have formed over the years that may be difficult

to change. If they are not used to strict hygiene practices from the start, they may not easily adopt new habits in old age.

For this reason, it is hoped that mentoring programs by health workers who act as District Food Inspectors (DFIs) are very important for IRTP business actors, especially those who still do not fully understand or are able to implement hygiene standards. In addition, regular health checks are also important, considering that processed food handlers in the elderly group are susceptible to disease.

2. Relationship between Hygiene and Education

This study states that there is a relationship between education and hygiene of processed food handlers, this is in line with research conducted by Suryani, there is a relationship between education level and the application of hygiene in food traders with a p value = 0.07 (Suryani & Jannah, 2021). This study is not in line with research conducted by Baringbing et al. stating that there is no relationship between education level and hygiene behavior of food handlers at IRTP with a p value = 1.000 (Baringbing et al., 2023).

The level of education affects the hygiene behavior of processed food handlers because higher education usually provides a better understanding of the importance of good hygiene in processing food. Individuals with higher levels of education tend to have better access to up-to-date information on food safety standards. They are also more likely to understand the health consequences of poor hygiene practices, such as cross-contamination and food poisoning, and are therefore motivated to comply with hygiene requirements in food preparation. In contrast, individuals with lower levels of education may not understand or have low awareness of the importance of good hygiene behavior, potentially increasing the risk of spreading disease through the food they prepare. Therefore, participatory training is expected as an effort to increase awareness and understanding of the importance of hygiene in food preparation for IRTP actors. In this training, participants are actively involved through discussions, questions and answers and direct practice, not just listening to lectures. Through this method, participants can interact directly with the presenters, try out correct hygiene practices, and exchange experiences with fellow participants. IRTP actors not only receive information but must also understand and be able to apply it in everyday situations.

3. Relationship between Hygiene and Income

This study states that there is a relationship between income and hygiene of processed food handlers. This is in line with research conducted by Bantie et al. stating that there is a relationship between income and food safety and hygiene practices with a p value = 0.0001 (Bantie et al., 2023). This study is not in line with research conducted by Suryani and Jannah which states that there is no relationship between income and the implementation of food trader hygiene with a p value = 0.155 (Suryani & Jannah, 2021).

Individuals with high incomes tend to take precautions to avoid disease, including efforts to meet hygiene standards when processing food such as PPE or other supporting equipment because their finances are sufficient to buy health support equipment. Poor hygiene when producing food can be influenced by purchasing power, if the income of processed food handlers is small, they cannot afford to buy supporting equipment so that they tend to be less hygienic because hygiene equipment is not met. For this reason, it is

hoped that there will be cooperation between the Health Service and the Industry and Trade Service through a business capital assistance program for IRTP actors who have implemented good hygiene. In addition, the Health Service in collaboration with the Social Service makes hygiene in food processing a requirement to obtain social assistance for IRTP actors.

The results of this study indicate that respondents who handle processed food with low or high income have a risk of 5.289 times not implementing processed food hygiene. This is because they have the capital to meet adequate facilities for food processing such as equipment and places that meet the requirements.

4. Relationship between Hygiene and Knowledge

This study states that there is a relationship between knowledge and hygiene of processed food handlers, this is in line with research conducted by Baringbing et al. stating that there is a relationship between knowledge and hygiene behavior of food handlers at IRTP with a value of p = 0.008 (Baringbing et al., 2023). Research conducted by Bantie et al. also stated that there is a relationship between knowledge and food safety and hygiene practices with a value of p = 0.008 (Bantie et al., 2023). In addition, other research that is not in line with Hartini et al. stated that there is no relationship between the level of knowledge and hygiene of food handlers with p = 0.053 (Hartini, 2022).

It is known that there are still respondents who do not know that when processing food they are not allowed to wear watches, rings and bracelets, know that the bathroom for workers who process food must be separate from the place for washing food ingredients and cooking utensils. In addition, there are still respondents who do not know that scratching body parts while processing food is not allowed.

For this reason, efforts are expected to increase knowledge about hygiene for IRTP actors by holding training on the application of good hygiene in food processing. In addition, information can be disseminated through social media that discusses interesting topics about hygiene or the dangers of food contamination. Holding seminars or workshops organized by the Health Office by involving the local community, so that IRTP actors obtain the right information about hygiene in food processing. Respondents' knowledge in this study has a high level of risk compared to other variables, where low respondent knowledge will be 33.6 times risky for them not to apply hygiene during food processing even though their income is already high. so, this certainly requires support from health workers or related sectors to provide education or socialization to IRTP groups about the need to apply hygiene in food processing so that the processed food results are not damaged in nutritional value and are safe for consumption by the community.

5. Relationship between Hygiene and Attitude

This study states that there is a relationship between attitude and hygiene of processed food handlers. This study is in line with research conducted by Hartini et al. stating that there is a relationship between attitude and hygiene of food handlers with p = 0.004 (Hartini, 2022). Research conducted by Bantie et al. also stated that there is a relationship between attitude and food safety and hygiene practices with a value of p = 0.027 (Bantie et al., 2023). In addition, research conducted by Guntur et al. also stated that there is a significant relationship between

attitude and GMP implementation with p = 0.001 (Guntur et al., 2020).

It is known that most respondents disagreed with wearing different work clothes when processing food than when not processing food, disagreed with the prohibition of wearing jewelry (bracelets, rings and watches) when processing food and respondents disagreed that scratching body parts was not allowed when processing food. In addition, there were still respondents who disagreed that eating or chewing was prohibited when processing food and there were still respondents who disagreed that if a wound occurs when processing food, it must be immediately cleaned, treated or covered with wound dressing and there were still respondents who disagreed that smoking was not allowed when processing food. Likewise with food handlers, food handlers who have a positive attitude towards food processing hygiene behavior should also have good hygiene behavior when processing food, but in reality their hygiene behavior can be contrary to what they consider right because there are still other factors that may influence this attitude before it appears, if the ability to obtain supporting facilities is still lacking (low income), or the processed food handlers do not really believe in the negative impacts such as the occurrence of diseases due to unhygienic food processing or there are no losses that they receive if they violate these requirements.

For this reason, it is expected that health promotion for IRTP actors will be carried out through training, workshops, seminars and other educational activities involving community groups and children's forums, with the aim of improving food safety behavior, especially in hygiene practices. Creative and innovative approaches using social media such as Facebook, Instagram, YouTube and TikTok can also increase literacy regarding the importance of hygiene behavior, the dangers of contaminated food, hygiene standards when processing food and sanctions for revoking business licenses if they do not implement good hygiene practices when processing food. Improving the competence of supervisors (District Food Inspector/DFI) and health promotion workers is also important, so that they can design a health promotion model that is easily accepted by the community by utilizing local wisdom or local culture, optimizing supervision and improving the competence of supervisors at IRTP facilities, so that they can influence the positive attitude of IRTP actors to implement good hygiene practices. In addition, there needs to be a policy with clear regulations related to hygiene requirements at IRTP with strict sanctions for violators such as revocation of business licenses. In addition, utilizing local wisdom in several food safety improvement programs, especially for IRTP. Introducing the importance of good hygiene behavior when processing food to the younger generation from an early age through children's forums. The provision of rewards in the form of certificates will be a requirement for obtaining social assistance or PPE assistance, so that it can be an additional motivation for food handlers to comply with better hygiene practices.

The attitude of respondents from the results of this study has a high risk compared to the knowledge variable, where the attitude of respondents who are not good will cause the hygiene practices of respondents to also be bad 65.167 times during food processing even though their income is already high. so this certainly requires support from health workers or related sectors to provide education or socialization to the IRTP group about the need to apply hygiene in food processing so

that the processed food results are not damaged in nutritional value and are safe for consumption by the community.

6. Relationship between Hygiene and Training

This study states that there is no relationship between training and hygiene of processed food handlers. This is in line with research conducted by Suryani and Jannah which states that there is no relationship between training and the application of food trader hygiene with a p value = 1,000 (Suryani & Jannah, 2021). This study is not in line with research conducted by Hidayati which states that there is a relationship between training and food handler hygiene with p = 0.010 (Hidayati et al., 2022).

Training is an activity that aims to help individuals develop and improve their competence in a short time, this training is useful for future opportunities, both for the individual himself and for work. The purpose of sanitation hygiene training is to increase the knowledge of food handlers in their efforts regarding sanitation hygiene. However, many training courses still only focus on increasing temporary knowledge, with assessments only to show that food handlers have the right knowledge, this training is often carried out in a short time, without giving participants the opportunity to apply best practices physically and with limited support (Taqia et al., 2021).

For this reason, efforts are expected to increase the success of training in overcoming hygiene problems in processed food handlers, training methods must be strengthened with a persuasive and interactive approach. Conduct training by practicing directly or through simulations of real situations so that food handlers really understand and can apply good hygiene practices. In addition, it is necessary to optimize hygiene supervision and routine evaluation to ensure the success of training and compliance of processed food handlers with hygiene standards.

7. Relationship between Hygiene and Officer Supervision

This study states that there is a relationship between officer supervision and the hygiene of processed food handlers, this is in line with research conducted by Cahyaningsih et al. which states that there is a relationship between officer supervision and worker practices in implementing hygiene with a p value = 0.01 (Cahyaningsih et al., 2018). In addition, research conducted by Bantie et al. also states that there is a relationship between officer supervision and food safety and hygiene practices with a p value = 0.010 (Bantie et al., 2023).

According to Handoko (2013), supervision is intended to prevent or correct errors, deviations, non-conformities, fraud and others that are not in accordance with the duties and authorities that have been determined (Sulfah, 2021), therefore processed food handlers who receive supervision from officers are more compliant with hygiene standards. For that, it is expected to optimize supervision by health officers (District Food Inspector/DFI) must include an understanding that the main purpose of supervision is not only to find violations, but also to obtain useful feedback to provide recommendations for improvement when activities do not run according to standards for that competent supervisors are needed. Violations found by supervisors during inspections must leave a repair document with a clear time limit on the advice of the IRTP. If the IRTP has committed a violation and has been given a warning letter twice, then the next warning letter from the relevant agency must be copied to the regional head (regent) and the

business license must be revoked to provide a deterrent effect. This supervision and policy will be more effective if accompanied by strict sanctions against violations. In addition, there needs to be a routine supervision and evaluation system to ensure that processed food handlers comply with hygiene standards. Supervision is one of the efforts made to maintain the commitment of processed food entrepreneurs to continue to apply their personal hygiene. From this study it was found that office supervision would be 40.889 times risky for processed food entrepreneurs to apply hygiene in food processing activities. The more often officers carry out supervision, the more it will change the attitudes and knowledge of processed food actors in applying hygiene. so that officers should carry out regular supervision of IRTP in the Muko-Muko area.

C. Multivariate Analysis

Table 3. Most Influential Factors on the Hygiene of Processed Food Handlers in IRTP in Mukomuko Regency

Variable	B	Wald	Sig	Exp(B)	95% CI	
					Lower	Upper
Attitute	2,970	7,117	0,008	19,483	2.200	172.583
Officer Supervision	2,035	3,402	0,065	7,655	0,880	66.569

After several stages of modeling by removing the variable with the largest p value, the remaining variable is attitude with p value = 0.008 (<0.05), while the supervision of officers p value = 0.065 (>0.05). Based on the multivariate analysis, it can be seen that the attitude variable interacts significantly with hygiene and to find out which variable has the greatest influence on the dependent variable, it is seen from the exp (B) of the significant variable, the greater the exp (B) value means the greater the influence on the dependent variable, because attitude is a significant variable with OR = 19.5, then there is an influence of predisposing factors (attitudes) with the hygiene of processed food handlers.

It can be concluded that attitude is the dominant factor that influences the hygiene of processed food handlers in Mukomuko Regency (p value = 0.008) <0.05, meaning that processed food handlers with good attitudes have 19.5 times better hygiene than processed food handlers with poor attitudes.

This is in line with research conducted by Bantie et al. stating that food handlers with positive attitudes are 3 times more likely to implement safety and hygiene practices when processing food (Bantie et al., 2023). In addition, it is also in line with research conducted by Guntur et al. which states that the attitude aspect is a dominant factor that interacts with the level of GMP implementation in MSMEs with a positive coefficient value of 1.093 (Guntur et al., 2020). Attitude consists of three main components, namely, beliefs or beliefs (ideas and concepts towards an object), emotional life or evaluation of the object, and the tendency to act. These three components together form a complete attitude in the formation of attitudes, knowledge, thoughts, beliefs and emotions have an important role (Pakpahan et al., 2021).

Research by Baringbing et al. shows that the attitude of food handlers has a significant influence on the implementation

of food handler hygiene behavior, the results of the study showed that respondents with negative attitudes had a 4.129 times greater risk of influencing hygiene behavior in food handlers compared to respondents who had positive attitudes (Baringbing et al., 2023). Based on research by Suryani & Widyastuti, it was found that most respondents had positive attitudes but were not accompanied by good behavior from food handlers. For example, there are still food handlers who wear jewelry and maintain long nails when processing food, and some sneeze and talk while processing and serving food. The formation of attitudes is largely based on personal experience, which influences a person's response to an object (Suryani & Widyastuti, 2022).

For that, an effective strategy is expected, namely regulation of food processing standards with strict sanctions, efforts to improve the hygiene behavior of food handlers involving important figures who are respected in the community, such as traditional leaders or heads of tribes in the program to improve the hygiene of processed food handlers by utilizing local wisdom. In addition, it is also important to introduce the need for good hygiene behavior in food processing to the next generation. The provision of awards in the form of certificates that are a requirement for obtaining social assistance or assistance in the form of PPE and strict sanctions for violators so that they become motivation for food handlers to comply with better hygiene practices**.**

CONCLUSIONS

The results of the study showed that the most dominant factor influencing the hygiene practices of processed food handlers is attitude with a risk of 19.4 times to practice or not hygiene when handling processed food. for that, the role of the health sector and government is expected to coordinate and collaborate and advocate in creating processed food safety to provide security for the community who consume it.

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