The Relationship between Knowledge and Attitudes of Food Handlers with the Implementation of Food Hygiene Sanitation at Restaurants in Minas District in 2022

Haesti Sembiring[1], Susanti Br Perangin-Angin[2], Lely Mayanti Silitonga[3]

[1,2,3]Politeknik Kesehatan Medan

Email corespondensi : haestisembiring23@gmail.com

Track Record Article

Accepted: 8 May 2023
Revised: 13 May 2023
Published: 14 June 2023

How to cite:
Sembiring, H., Perangin-angin, Br, S., & Silitonga, Mayanti, L. (2023). The Relationship between Knowledge and Attitudes of Food Handlers with the Implementation of Food Hygiene Sanitation at Restaurants in Minas District in 2022. *Contagion: Scientific Periodical Journal of Public Health and Coastal Health*, *5*(2), 408–419.

Abstract

Food and drink are the most important necessities of life and have the potential to be contaminated with pathogenic bacteria. Factors that influence food quality are the behavior of food handlers in the application of personal hygiene and food sanitation. This study aims to determine the relationship between the knowledge and attitudes of food handlers and the application of food sanitation hygiene in restaurants in Minas District. This research is a quantitative research with cross sectional research design. The location in the research is a restaurant in Minas District. The time of this research was conducted from March to May 2022. The research population was all food handlers at restaurants in Minas District, 18 restaurants in Minas District consisting of 36 food handlers. The sampling technique is total sampling. The sample in this study were 36 people. The type of data in this study is primary data obtained by direct observation Primary data obtained from surveys to locations in restaurants in Minas District and direct interviews with respondents using questionnaires and observation sheets. Data collection was carried out by direct observation and interviews with food handlers using a questionnaire. Data analysis with chi square test. The results showed that there was a significant relationship between the knowledge of food handlers and the application of food sanitation hygiene (p-value = 0.005) and there was a significant relationship between the attitudes of food handlers and the application of food sanitation hygiene (p-value = 0.002). It is recommended that food handlers should wash their hands with soap and running water before doing work, wear masks and not chat while processing food.

Keywords: Attitude, Food Handlers, Hygiene, Knowledge, Sanitation

INTRODUCTION

Food and beverages are the most important necessities of life and can potentially be contaminated with pathogenic bacteria. Factors that affect food quality are the behavior of food handlers in applying personal hygiene and food sanitation. Food handlers are people who are directly in contact with food and equipment, from preparation, cleaning, processing, and transportation to serving (Kemenkes, 2003).

A restaurant is one of the Food Management Places (TPM) related to food handlers. A restaurant is any commercial business place whose scope of activity is to provide food and beverages to the public in its place of business (Kemenkes, 2003). Food sanitation hygiene management in restaurants is continuous monitoring of restaurants on the development of food sanitation actions or activities and conditions that exist after follow-up efforts from inspections.

The examination is an effort to see and witness directly on the spot, assess the situation, actions, or activities carried out, and provide instructions or suggestions for improvement (UUD Kesehatan, 2009).

Restaurant owners' efforts to manage sanitary hygiene have yet to be carried out optimally. Many restaurant owners still need to understand food sanitation activities correctly. This situation greatly affects the microbiological quality of food products produced. One of the causes of basic food sanitation problems is the management of restaurants. Restaurants do not know good management methods, including management of health certificates, food processing that will have a health impact on processed food and sanitation of restaurant building locations which also greatly determine the hygiene of a food (Marlinae et al., 2021).

According to the Decree of the Minister of Health of the Republic of Indonesia, No.1098/MENKES/SK/VII/2003 explains that a restaurant is any commercial business whose scope of activities is to provide food and beverages to the public at its place of business. This restaurant arises and develops in line with the development of the community in serving consumer needs. If not supported by hygienic food management and good sanitary conditions, this will cause health problems.

Food poisoning outbreaks are estimated to occur annually due to bacterial contamination that causes 60 million children to become sick, including 50,000 children in South Asia. Furthermore, the incidence of food poisoning has increased two-fold from 61 to 135 outbreaks in 34 provinces during 2015-2016 in Indonesia (Nuraisyah, 2019). Based on data from the Directorate of Environmental Health and Public Health Emergency Operation Center (PHEOC) of the Ministry of Health, there were 163 outbreaks of food poisoning and 7,132 cases with a Case Fatality Rate (CFR). Food poisoning outbreaks are among the 2nd of the outbreak reports included in the PHEOC, second only to diphtheria outbreaks (Kemenkes RI, 2018a).

The Food and Drug Supervisory Agency of the Republic of Indonesia reported that in 2014 Indonesia experienced extraordinary food poisoning due to poor food processing, with as many as 47 cases of the disease and 84 cases in 2013 (Asniar, 2018). In 2017 there were food poisoning outbreaks on the island of Java; the five provinces with the highest food poisoning outbreaks were West Java, with 25 incidents of food poisoning; Central Java, 17 incidents; East Java, 14 incidents; Bali, 13 incidents; and East Nusa Tenggara with 12 incidents of food poisoning. This shows that there is still a high rate of food poisoning due to poor food processing (Kemenkes RI, 2018a).

To data from the Riau Provincial Health Office in 2019, the number of Food

Management Place that met health requirements in 2019 was 40.2%. This figure has exceeded the 2019 target set by the Riau Provincial Health Office Renstra, which is 26%. However, of the existing 18.439 Food Management Place, only 7.407 (40%) are eligible, even though the results each year have exceeded the target. The achievement of Food Management Place that meets health requirements for 5 years 2014-2018 has decreased, as evidenced by the percentage of Food Management Place in 2015 of 53.4%, the percentage in 2016 of 46%, the percentage in 2017 of 44.8% and the percentage of 2018 of 32.8% (Dinkes Riau, 2019).

Restaurants that still need to meet sanitary hygiene requirements are caused, among others, by the location of restaurants adjacent to sources of air pollution, namely Landfills; there are no sanitation facilities such as sinks or hand washing stations with running water with soap supports and dryers. Food handlers who have not used Personal Protective Equipment (PPE) such as aprons and hair covers when processing and serving food and food handlers who do not wash their hands before and after processing and serving food (Kemenkes RI, 2018). The hygiene behavior of food handlers is inseparable from the attitude and knowledge of food hygiene and sanitation. Food handlers' knowledge, attitudes, and personal hygiene are very important in food administration to protect the food produced from contamination (Miranti, 2018).

Knowledge and attitudes of food handlers regarding food hygiene and sanitation can affect the application of hygiene and sanitation in food administration. Poor hygiene and sanitation in food administration can affect the quality of food produced (Aldiani, 2018). Various training programs should be provided to food handlers, such as maintaining and maintaining personal hygiene (personal hygiene), hygiene of sanitary equipment and facilities, as well as knowledge on how to handle food and food storage techniques that can reduce the possibility of food damage also need to be provided (Siregar, 2016).

Berdasarkan penelitian Sajdah et al., (2022) stated that there were 22 respondents (81.5%) who had less knowledge of poor hygiene practices. While food handlers who have good knowledge there are 5 respondents (18.5%) with poor hygiene practices. The results of the statistical test obtained a p-value = 0.000, it can be concluded that there is a relationship between knowledge and hygiene practices of food handlers in the working area of the Wonorejo Health Center.

Based on research by Maghafirah et al., (2018) the level of knowledge of food handlers about food hygiene and sanitation is in the moderate category of as many as 40 respondents. In implementing hygiene sanitation, 28 respondents were in the moderate category, and as many as 20 people were lacking. Many food handlers' hygiene sanitation practices are still not

fulfilled, such as food handlers do not work using aprons and head covers, as many as 53 respondents (81.5%), do not wash their hands before and after processing food, as many as 47 respondents (72.3%), do not process food using clean containers/places as many as 36 respondents (55.4%), do not wash food ingredients processed with running water 45 (69.2%), and do not dry eating/cooking utensils using cloths that are often replaced as many as 38 respondents (58.5%). The low action on implementing hygiene sanitation is due to habit factors and the personal response of food handlers who are uncomfortable using aprons while working even though they have been facilitated. So that to change habits, special counseling or training must be given to food handlers (Maghafirah et al., 2018).

The research results were conducted by researchers in 18 restaurants in Minas District. Several food handlers did not use aprons or wash their hands when processing food ingredients. Vegetables, fish, shrimp, and other food ingredients that will be cooked are not washed in running water, and there are still places to eat with poor hygiene and sanitation conditions. None of the food handlers interviewed knew how to manage food properly and the requirements for food hygiene and sanitation in food management places by the Decree of the Minister of Health of the Republic of Indonesia number 1098/Menkes/SK/VII/2003 concerning Hygiene Sanitation Requirements for Eateries and Restaurants. In addition, there are still several restaurants with poor sanitation facilities, such as the unavailability of hand washing stations and poor condition of wastewater disposal facilities.

Based on the background described, the researcher is interested in researching the relationship between the knowledge and attitudes of food handlers and the application of food sanitation hygiene in restaurants in the Minas District.

METHODS

This research includes quantitative research in the form of an analytical survey with a cross-sectional research design, a study conducted by observing a moment or in a certain period. Each subject only makes one observation during the study (Machfoeds, 2009).

The location in the research is a restaurant in Minas District. The time of this research was conducted from March to May 2022. The population in this study were food handlers at restaurants in Minas District, 18 restaurants in Minas District consisting of 36 food handlers. The sampling technique in this study used the total sampling technique, which included all respondents in the research sample, so the number of samples in this study were 36 respondents where the entire population was taken by two food handlers in one restaurant.

The type of data in this study is primary data obtained by direct observation Primary

data obtained from surveys to locations in restaurants in Minas District and direct interviews with respondents using questionnaires and observation sheets. Meanwhile, secondary data was obtained from restaurant owners in Minas District in the form of data needed for research.

Collecting data in this study by observing in the field directly the application of restaurant sanitation hygiene and interviews using a questionnaire to obtain data about the knowledge of restaurant owners, the attitudes of restaurant owners, the actions of sanitarian officers and training participation.

Analysis of the research data is bivariate analysis using software assistance in the form of the Statistical Program for Social Science (SPSS) computer software with a significant level of p>0.05 at a 95% confidence level.

RESULTS

Table 1. Distribution of Characteristics of Restaurant Food Handler Respondents in Minas District in 2022

Variable	Frequency	%
age		
15-20 years	7	19,44
21-30 years	12	33,33
35-40 years	4	11,11
41-50 years	10	27,78
55-75 years	3	8,33
Total	**36**	**100**
Gender		
Man	11	30,6
Woman	25	69,4
Total	**36**	**100**
Recent Education		
Primary school	6	16,7
Junior High School	12	33,3
High School	13	36,1
Diploma	1	2,8
Bachelor	4	11,1
Total	**36**	**100**
Length of Work		
0-2 years	11	30,6
3-5 years	8	22,22
6-7 years	1	2,8
8-10 years	5	13,89
11- 15 years	2	5,6
16-20 years	4	11,11
21-30 years	5	13,89
Total	**36**	**100**

Based on Table 1. it can be seen that of the 36 respondents, most of the food handlers in restaurants in Minas District are women, as many as 25 respondents (69.4%), while for male respondents, as many as 11 respondents (30.6%).

Of the 36 food handlers in restaurants in Minas Subdistrict, most were aged 21-30 years, with as many as 12 respondents (33.33%). At the same time, the least is aged 55-75, with as many as three respondents (8.33%).

Of the 36 respondents, the education level of food handlers in restaurants in the Minas Subdistrict is mostly high school education, with as many as 13 respondents (36.1%), and the least respondents with a Diploma education level, as many as one respondent (2.8%).

Of the 36 respondents, the length of work of food handlers in restaurants in Minas District is the length of work of 2 years, namely six respondents (16.7%).

Table 2. Distribution of Respondents' Characteristics Based on Variables of Knowledge, Attitudes, and Application to Restaurant Food Handlers in Minas District in 2022

Variable	Frequency	%
Knowledge		
Good	17	47,2
Good enough	13	36,1
Not Good	6	16,7
Total	**36**	**100,0**
Attitude		
Good	12	33,3
Good enough	7	19,4
Not Good	17	47,2
Total	36	100,0
Application		
Good	16	44,4
Good enough	7	19,4
Not Good	13	36,1
Total	**36**	**100,0**

Based on Table 2. The results showed that 36 respondents that most of the food handlers in restaurants in Minas District had good knowledge, namely 17 respondents (47.2%), 13 respondents (36.1%), and less good six respondents (16.7%).

Of the 36 respondents, most of the food handlers in restaurants in Minas District have a good attitude, namely 12 respondents (33.3%), seven respondents (19.4%), and less good, as many as 17 respondents (47.2%).

Of the 36 respondents, it is known that respondents with good hygiene and sanitation implementation categories were 16 respondents (44.4%), seven respondents (19.4%), and 13 respondents (36.1%).

Table 3. The Relationship of Knowledge and Attitudes with the Application of Food Sanitation Hygiene in Restaurants in Minas District in 2022

Varibel	Application of Sanitary Hygiene						Total		p-value
	Good		Good Enought		Not Good				
	n	%	n	%	n	%	n	%	
Knowledge									
Good	13	81,3	2	28,6	2	15,4	17	47,2	0,005
Good enough	1	6,3	4	57,1	8	61,5	13	36,1	

Not Good	2	12,5	1	14,3	3	23,1	6	16,7	
Total	**16**	**100**	**7**	**100**	**13**	**100**	**36**	**100**	
Attitude									
Good	10	62,5	2	28,6	0	0,0	12	33,3	0,002
Good enough	4	25,0	1	14,3	2	28,6	7	19,4	
Not Good	2	25,0	4	57,1	11	84,6	17	47,2	
Total	**16**	**100**	**7**	**100**	**13**	**100**	**36**	**100**	

Based on Table 3. The results showed that respondents with good food sanitation hygiene application were more in the good knowledge group 17 (47.2%) than with poor knowledge 6 (16.7%). While the results of the bivariate analysis above were obtained, the knowledge variable has a p-value of 0.005 (p <0.05), which means that there is a relationship between the knowledge of food handlers and the application of sanitary hygiene in restaurants in Minas District.

Respondents with good implementation of restaurant sanitation hygiene were more in the Less good attitude group, namely 17 people (47.2%), compared to the good attitude group, namely 12 people (33.3%). Moreover, respondents with good restaurant hygiene sanitation were more in the good attitude group, namely 16 people (44.4%), compared to the less good attitude group, 13 people. The results of the bivariate analysis above obtained the food handler attitude variable has a p-value of 0.002 (p < 0.05), which means that there is a relationship between the attitude of food handlers with the application of food sanitation hygiene in restaurants in Minas District.

DISUCUSSION

1. The Relationship of Food Handler Knowledge with the Application of Food Sanitation Hygiene

Knowledge can be interpreted as something that explains everything that food handlers know and the extent to which a person can understand or interpret everything he knows (Tanaiyo et al., 2018). Knowledge or cognition is also a very important domain for forming one's actions (overt behavior).

This study's results indicate that most food handlers have good knowledge, as many as 17 people (47.2%). Some of the questions answered by respondents with the highest scores include what should be done before food ingredients are processed, what equipment should be used when processing food, and what equipment should be used for food processing. Where respondents already understand that washing food ingredients first is something that must be done before the food processing process, as well as what kind of equipment and equipment used for food processing some respondents also know it.

Based on the chi-square test analysis results, the ρ-value is 0.005 (sig <0.05), so Ho is rejected, and Ha is accepted. Namely, there is a relationship between food handler knowledge and the application of food sanitation hygiene. The results of the analysis are in line with research (Maghafirah et al., 2018) which states that there is no significant relationship between knowledge and the practice of implementing food hygiene and sanitation with ρ-value 0.095 (sig> 0.05). In line with Fajrina's (2022) research, the results of the analysis found that knowledge was related to the hygiene of food handlers with a value of p = 0.030 (< 0.05). Not in line with the research Khaerudin (2021), the statistical test HasiI obtained niIai p-vaIue = 0.752 or p > 0.05 which means that there is no relationship between the knowledge of handlers and the sanitary hygiene behavior of restaurants in the working area of the Jalaksana health center, Kuningan Regency in 2020.

This result is supported based on the questionnaire statement that most respondents already have good knowledge 17 (47.2%), and the education level of the respondents, as many as 13 people (36.1%), already have a high school / vocational education equivalent. Knowledge of food handlers does not directly affect the application of food handler sanitation hygiene; in addition to knowledge, other factors can affect the application of sanitation hygiene, such as work experience (Maghafirah et al., 2018). In line with the study Lissalmi (2021), the results of the chi-square test showed a value of p = 0.001 (< 0.05). This proves that knowledge has a relationship with the Application of Restaurant Sanitation Hygiene during the COVID-19 Pandemic.

The working period can also be seen from the age of the food handlers. In this study, the age category of food handlers is more prevalent, ranging from 21 to 30 years. The older a person is, the more work experience he has and the better his knowledge, so the application of sanitary hygiene owned by food handlers will be better (Maghafirah et al., 2018). Then another factor is the habits of food handlers. During the observation, the researcher found that respondents needed to apply their knowledge to hygiene sanitation because the food handlers' actions had become a habit. According to the food handlers, not doing what they know is not a problem.

This research is reinforced by the research of Nuraini and Susanna (2014), that in addition to knowledge, other factors have a stronger influence on the hygiene behavior of food processors, such as the habits of the food management workforce who have not paid attention to hygiene in processing food, an unsupportive environment such as not providing personal protective equipment for food management personnel, little experience in food processing and have never attended training on hygiene in food processing (Nuraini & Susanna, 2014).

Good knowledge of food handlers will produce good attitudes, so the application of hygiene and sanitation is expected to be good. However, in this study, knowledge has a direct effect on the application of sanitary hygiene by food handlers due to other factors that influence the application of sanitary hygiene. According to Djarismawati et al. (2004), the addition of knowledge can be through courses or training on sanitation and hygiene because a skill is needed (Djarimaswati et al., 2004).

The assumption obtained is that the work experience possessed by food handlers in this study is more dominant, less than six years, so that work experience can affect the application of sanitary hygiene owned by food handlers.

2. The Relationship of Food Handler Attitude with the Application of Food Sanitation Hygiene

A person's closed reaction to a stimulus is called an attitude. Attitude is not yet a real action but still a person's perception and readiness to react to the stimulus around him. Attitudes can be measured directly and indirectly. *Attitude measurement* is an opinion expressed by respondents towards objects (Notoatmodjo, 2014).

Based on the chi-square test analysis results, the ρ-value is 0.002 (sig <0.05), so Ho is rejected, and Ha is accepted. Namely, there is a significant relationship between attitude and the application of food sanitation hygiene. This study is in line with research conducted by (Banowati & Kurniasari, 2020) that there is a relationship between the attitude of food handlers and the practice of implementing food management with a p-value of 0.026. The research conducted by (Maghafirah et al., 2018) showed a significant relationship between attitudes and food sanitation hygiene practices in food handlers along Jalan Raya Tajem with a p-value of 0.032. Husaini's (2020) research obtained the results of statistical analysis with the chi-square test obtained the results of p-value = 0.010 (p<0.05), showing a significant relationship between attitudes and sanitary hygiene of restaurants/restaurants.

However, this study shows that many respondents with a good attitude still need a better application of sanitary hygiene, as many as 13 respondents (36.1%). This was supported when researchers observed that many food handlers did not use aprons or hair coverings, did not wash their hands when processing food, and there were even some food handlers who smoked while processing food. Attitude is not yet an action or activity but a predisposition to action or behavior. Attitude is still a fast rather than an open reaction (Notoatmodjo, 2018). Sanitary hygiene practices carried out by respondents are a reflection of respondents' attitudes that support or do not support restaurant sanitation hygiene (Andriani, 2020).

Based on theory, attitudes are hidden behaviors that occur consciously or

unconsciously (Maghafirah et al., 2018). It can be concluded that respondents only know about hygiene sanitation in food handlers without being applied through their attitude or awareness, thus influencing the practice of food hygiene sanitation. Food handlers must attend training and have the right skills in the basic principles of food safety and personal hygiene rules to form attitudes to improve their practices in handling food.

Based on the study's results, it can be assumed that the attitude of food handlers is a risk factor for implementing food sanitation hygiene in Minas District. This is because the behavior of not washing hands before processing food, not using aprons and hair covers, and chatting while processing food is a habit that has become a tradition for food handlers.

CONCLUSION

Based on the results of research that has been conducted on the relationship between knowledge and attitudes of food handlers with the application of food sanitation hygiene in restaurants in Minas District, the following conclusions can be drawn:

1. Knowledge of food handlers in restaurants in Minas District with good knowledge category as many as 17 people (47.2%), while poor knowledge as many as six people (16.7%).
2. The attitude of food handlers in restaurants in Minas District with a good attitude category was 12 people (33.3%), and with a poor attitude category was 17 people (47.2%).
3. The application of food hygiene sanitation in food handlers with a good category is 16 (44.4%), and with a poor category, as many as 13 (36.1%).
4. The analysis results show a relationship between knowledge and the application of food sanitation hygiene with a ρ-value of 0.005.
5. The analysis results showed a relationship between attitude and the application of food sanitation hygiene with a ρ-value of 0.002.

Suggestions that can be given are expected to the restaurant leaders to provide direction and provide knowledge to employees to maintain personal hygiene and cleanliness in processing food. Advice to the local office to inspect the restaurant to keep monitoring the condition of the handlers and the environmental conditions of the restaurant. Moreover, suggestions for further research are expected to be a reference in the future.

REFERENCE

Aldiani, R. (2018). *Hubungan Pengetahuan dan Sikap Penjamah Makanan dengan Penerapan Hygiene Sanitasi Makanan di Instalasi Gizi RSUD Wangaya Denpasar Tahun 2018*. Poltekkes Denpasar.

Andriani, Y. (2020). Analisis Faktor Yang Berhubungan Dengan Higiene Sanitasi Rumah Makan Di Wilayah Kerja Puskesmas Sarolangun Kabupaten Sarolangun. *Jurnal Ilmu*

Kesehatan Masyarakat Berkala, *2*(2), 10. https://doi.org/10.32585/jikemb.v2i2.982

Banowati, L., & Kurniasari, E. S. (2020). Hubungan Pengetahuan Dan Sikap Petugas Penjamah Makanan Dengan Praktek Pengelolaan Makanan. *Jurnal Kesehatan*, *5*(1), 471–478. https://doi.org/10.38165/jk.v5i1.160

Dinkes Riau. (2019). *Dinkes Riau, 2019. Profil kesehatan provinsi Riau : Dinas Kesehatan Provinsi Riau.*

Djarimaswati, Sukana, B., & Sugiharti. (2004). Pengetahuan dan Perilaku Penjamah Tentang Sanitasi Pengolahan Makanan pada Instalasi Gizi Rumah Sakit di Jakarta. *Media Penelitian Dan Pengembangan Kesehatan*, *14*(3), 31–37. https://doi.org/10.22435/mpk.v14i3 Sept.905

Fitria, D., & Asniar. (2018). Faktor-Faktor Pencegahan Food-Borne Disease Pada Pedagang Makanan. *Jurnal Ilmiah Mahasiswa Fakultas Keperawatan*, *3*(3), 223–230.

Hidayati, F. (2022). Faktor Yang Berpengaruh Terhadap Higiene Penjamah Makanan Di Rumah Makan Yang Ada Di Wilayah Kerja Kantor Kesehatan Pelabuhan Padang. *Jurnal Endurance*, *7*(1), 138–147. https://doi.org/10.22216/jen.v7i1.829

Husaini, A., Subakir, & Aprianti, R. (2020). *Factors Related to Restaurant Sanitation Hygiene in the Work Area of Puskesmas Simpang in Jambi City*. *X*(X), 52–58.

Kemenkes. (2003). Persyaratan Hygiene Sanitasi Rumah Makan Dan Restoran. In *Kementerian Kesehatan Republik Indonesia*.

Kemenkes RI. (2018a). Laporan Nasional Riset Kesehatan Dasar. In *Badan Penelitian dan Pengembangan Kesehatan* (p. 674).

Kemenkes RI. (2018b). *Laporan Nasional Riskesdas 2018*.

Lissalmi, A., Puteri, A. D., & Yusmardiansah, Y. (2021). Faktor-Faktor Yang Berhubungan Dengan Penerapan Hygiene Sanitasi Rumah Makan Dalam Masa Pandemi Covid-19 Di Bangkinang Kota Tahun 2021. *Jurnal Kesehatan Tambusai*, *2*(4), 26–35. https://doi.org/10.31004/jkt.v2i4.2418

Machfoeds, I. (2009). *Metodologi Penelitian BIdang Kesehatan, Keperawatan, Kebidanan, Kedokteran*. Fitramaya. https://onesearch.id/Record/IOS2726.slims-97137?widget=1#details

Maghafirah, M., Sukismanto, & Rahmuniyati, Eka, M. (2018). The Correlation Of Knowledge And Attitude With Hygiene And Sanitation Practice Of Food Handlers In Along Tajem Way Maguwoharjo Yogyakarta 2017. *Jurnal Formil (Forum Ilmiah) KesMas Respati*, *3*(1), 15–22.

Marlinae, L., Khairiyati, L., Waskito, A., & Rahmat, A. N. (2021). *Higiene Makanan dan Minuman*. Yogyakarta : CV Mine.

Miranti, Ayu, E., & Adi, Catur, A. (2018). Body Image Berhubungan Dengan Indeks Massa Tubuh, Tapi Tidak Dengan Waist To Hip Ratio Pada Vegetarian Putri Di Surabaya. *Media Gizi Indonesia*, *11*(2), 113. https://doi.org/10.20473/mgi.v11i2.113-119

Muhammad Wildan Khaerudin, Ernawati, Fitri Hartati, & Handitia Kastiana. (2021). Hubungan Pengetahuan dan Sikap dengan Perilaku Hygiene Sanitasi Rumah Makan di Wilayah Kerja Puskesmas Jalaksana. *Jurnal Semesta Sehat (J-Mestahat)*, *1*(1), 27–35. https://doi.org/10.58185/j-mestahat.v1i1.71

Notoatmodjo, S. (2014). *Ilmu Prilaku Kesehatan*. Rineka Cipta.

Nuraini, P., & Susanna, D. (2014). Karakteristik Dan Pengetahuan Penjamah Makanan Dengan Perilaku Tentang Higiene Perorangan Pada Proses Pengolahan Makanan Di Katering "X" Jakarta Tahun 2014. *Fakultas Kesehatan Masyarakat Universitas Indonesia*, 2–3. http://lib.ui.ac.id/file?file=pdf/abstrak/id_abstrak-20386461.pdf

Nuraisyah, F. (2019). Penyelidikan KLB Keracunan Makanan di Desa Banjaroyo Kabupaten Kulon Progo (Food Intoxication Outbreak Investigation in Banjaroyo Village). *Jurnal Mkmi*, *15*, 418–425.

Sajdah, A. A. A., Kurniawan, D., & Suhelmi, R. (2022). Hubungan Pengetahuan dan Sikap Terhadap Praktik Hygiene Penjamah Makanan pada Rumah Makan di Wilayah Kerja Puskesmas Wonorejo. *Higiene Jurnal Kesehatan Lingkungan*, *8*(3), 155–160.

Siregar, R. (2016). Pengaruh Pemberian Penyuluhan Higiene dan Sanitasi Makanan pada Penjamah Makanan Terhadap Angka Kuman Makanan yang Disajikan di Instalasi Gizi RS Dr. Ernaldi Bahar Palembang. *Jurnal Kesehatan Poltekkes Palembang*, *11*(2), 252–262.

Soekijo Notoatmojo. (2018). *Promosi Kesehatan Teori dan Aplikasi*. PT. Rineka Cipta.

Tanaiyo, S. N. K., Sari, D. D., Halim, F., & Damayanti, A. Y. (2018). Tingkat Pengetahuan dan Sikap Higiene dengan Perilaku Higiene Perorangan pada Penjamah Makanan di Instalasi Gizi RSJ. Prof. Dr. Soerojo Magelang. *Journal of Islamic Nutrition*, *1*(1), 19–25. https://doi.org/10.21111/join.v1i1.2178

UUD Kesehatan. (2009). UNDANG-UNDANG REPUBLIK INDONESIA NOMOR 36 TAHUN 2009 TENTANG KESEHATAN. In *Undang-Undang Republik Indonesia* (Issue 57).