

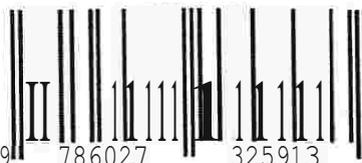
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LEMBAGA PENELITIAN DAN  
PENGABDIAN KEPADA MASYARAKAT  
UNIVERSITAS JAMBI

## Attitude and Sanitation of Canteen Related to Application of Food Hygiene Sanitation on Food Handlers in High School Canteen of Jambi City

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**Abstract**-Food handlers play an important role in food sanitation. Food handlers were a potential source of disease transferred to others through food. The aim of research to determine the relationship of knowledge, attitudes and sanitation of canteen with the application of sanitary hygiene of street food in the high school cafeteria in Jambi City. This research was observational which a cross sectional study design. Population and samples in this study were 104 food handlers. Collecting data using a questionnaire and checklist according Permenkes 942/Menkes/SKNI/2003. Data analysis using chi-square and multiple logistic regression at 95% confidence level. The results showed that 56.7% of respondents had a lower knowledge; 69.2% had a good attitude, 67.3% sanitation of canteen were not meet the health requirements. There were a relationship between knowledge (Odds Ratio (OR) = 3.359 (95% CI: 1.477 to 7.640)), attitude (OR = 4.048 (95% CI: 1.683 to 9.736)) and sanitation of canteen (OR = 4.038 (95% CI: 1.701 to 9.586) ) with the application of sanitary hygiene of street food. The dominant factor affecting the application of sanitary hygiene of street food was a food handler attitude (OR = 4.899 (95% CI: 1.814 to 13.227)) controlled by knowledge and sanitation of canteen. Attitude was a dominant factor on the application of sanitary hygiene of street food in the high school of cafeteria. So we need counseling, training and supervision regularly and continuously from Jambi City Health Office to the food handler and owner of a school cafeteria.

**Keywords:** attitude, sanitation, canteens, hygiene, snacks

### I. INTRODUCTION

Health is a human need and a basic asset to live productively, useful and effective. One of the big influencing factors in our health is the environmental factor, behavior factor, health services and heredity. (Jambi Province Health Office, 2002:2). Environment really influences the quality of the food itself. The food

has a big potential in nutrition fulfillment and also has a level of vulnerability which can cause ptomaine poisoning if it is based on hygiene and sanitation, also a maximum guidance. (Candra. 2006:12). Sanitation hygiene is an effort to control the factors of food, people, places and equipment that can cause disease or illness. Diseases which are caused by food in environmentally based called *Food Home Disease*. Food home diseases are such as typhus, dysentery, diarrhea and ptomaine poisoning (Candra. 2006: 18).

Based on basic sanitation inspections result and the report of Jambi City Health Office (2013: 2) that there had been ptomaine poisoning such as chicken noodle in Kelurahan Selamat as many as 26 people, ptomaine poisoning of gado-gado in Kelurahan Kasang Jaya as many as 11 people, ptomaine poisoning of Lontong in Kelurahan Simpang IV Sipin Telanaipura as many as 13 people, and ptomaine poisoning of gado-gado in SMAN 6 Jambi as many as 19 people. In 2014, it also happened in Pondok Pesantren As'ad which caused ptomaine poisoning of Nasi bungkus as many as 18 people, in SMAN 8 Jambi as many as 24 people which caused ptomaine poisoning of Mie Ayam, and in SON (Elementary school) 27 as many as 15 people which caused ptomaine poisoning of Bubur Kacang Hijau.

Based on the basic survey who author did in SMAN 6 and SMAN 8 Jambi that food handlers had not optimally implemented sanitation hygiene of street food, it was proved when the food handlers used a table napkin as dishtowels, when they took the food directly by hand without using forceps, when food handlers did not wash the dishes by using the running water, the dishes were gathered only in a basin and after washing the dishes, they just dried their hands by dusting to their clothes, also the food was opened to the air. The author also made observations about the garbage in the cafeteria around the canteen that there was still scattered and the garbage cans were not covered, sewerage did not flow smoothly. The result



of author's interviewing with the food handlers that there is supervision, they were controlled and trained by Jambi City Health Office about the application of sanitary hygiene of food in the school canteen.

The research which was done by Agustina (2009:1) on the extraordinary events (KLB) of food borne disease showed that the disease was based on the environment. Which was caused by not applying the sanitary hygiene of food, so the food was contaminated. The good sanitation hygiene of food needed to be supported by the environment condition and supervision by the Health Office and the school for the street foods which were sold in the school canteens. Besides that, it needed to be supported by the knowledge and good attitude of the food handlers in applying of hygiene sanitation of foods which were sold in canteens.

The research which was done by Budiyo (2008:8) that there was a *significant* relationship between the level of knowledge and practices of food handlers about hygiene and sanitation of food at eatery in Central Jakarta, which meant that the knowledge played an important role on the quality of the food. Research which was done by Naria (2015: 7) on hygiene sanitation of food and beverage in USU complex, Medan said that traders who qualified as a whole in implementing the six principles of sanitary hygiene of food and drink as much as 69%.

A successful application of sanitary hygiene of street food besides from the high level of knowledge, it also needs to be supported with a good attitude. Based on the research above that behavior and environmental factors played an important role on the quality of the food. Factors that influenced behavior change were knowledge, attitudes and actions. Factors that influenced the behavior change consisted of knowledge and attitude. The environmental factor was canteen sanitation, while the application of sanitary hygiene was an affected factor.

Based on the results of previous studies and inspections of basic sanitation was done by Jambi city Health Office and the basic survey who author did, so it needed to do a research on the interaction of knowledge, attitudes and sanitation canteen with the application of sanitation hygiene of street food by food handlers in the high school cafeteria in Jambi City in order to avoid ptomaine poisoning that harm consumers and students.

## II. METHODS

This research was observational with cross sectional study which the authors understand the interaction of independent variables and the dependent variables were done at the same time (Nurtia, 2005: 3-7). The aim of research was to determine the relationship of knowledge, attitudes and sanitation of canteen with the application of sanitary hygiene of street food in the high school cafeteria in Jambi City. This research was conducted in high school cafeteria in Jambi city on August until October 2015. Population and samples in this study were food handlers in high school cafeteria in Jambi city. The instruments used in this study were questionnaire for the interviews and checklist for observation.

## III. RESULT

### Univariate Analysis

The frequency distribution pictures of knowledge, attitude and canteen sanitation with the application of sanitary hygiene of street food.

The knowledge of food handlers were grouped into two categories: high and low knowledge. The attitude of food handlers were grouped into two categories of good and bad. The canteen sanitations were grouped into two categories of eligible and ineligible. The frequency distribution of knowledge attitude and sanitation canteen can be seen in Table 1.

Table 1. Frequency Distribution of Knowledge, Attitude, Canteen Sanitation and application of hygiene sanitary of street food

No	Variable	Total	Percentage (%)
1.	Knowledge		
	- High	45	43,3
	- Low	59	56,7
2.	Attitude		
	- Good	32	30,8
	- Bad	72	69,2
3.	Canteen Sanitation		
	- Eligible	34	32,7
	- Ineligible	70	67,3

4. Application of Hygiene Sanitary or Food	ti	3<A
- Good	63	60.6
- Bad		

Based on Table 1, it could be found that the low knowledge of food handlers was 59 (56.7%), more than the high knowledge. The bad attitude of food handlers was 72 (69.2%), more than the good attitude of food handlers. The ineligible canteen sanitation was 70 (67.3%), more than the eligible canteen sanitation. The bad application of hygiene sanitary of street food was 63 (60.6%), more than the good application of hygiene sanitary of street food.

#### BIVARIATE ANALYSIS

BIVARIATE analysis was used to determine whether there was a relationship between the independent variables with the dependent variable. The relationship of knowledge, attitudes and canteen sanitation and the application of sanitary hygiene of street food by food handlers in high school cafeteria Jambi city can be found in Table 2.

Table 2. Knowledge interaction, Attitude and Canteen Sanitation and Application of Sanitary Hygiene of Street Food

Variable	Application or Sanitary Hygiene of Street Food				Total	P-Value
	Good		Bad			
	Total	%	Total	%		
Knowledge						
- High	25	55,6	20	44,4	45	0,006
- Low	16	27,1	43	72,9	59	
Attitude						
- Good	20	62,5	12	37,5	32	0,003
- Bad	21	29,2	51	70,8	72	
Canteen Sanitation						
- Legible	21	61,8	13	38,2	34	0,002
- Ineligible	20	28,6	50	71,4	70	

Based on Table 2, the high knowledge of food handlers and the good application of sanitary hygiene were 25 (55.6%), and low knowledge of food handlers and the bad application of sanitary hygiene of street food were 43 (72.9%). Statistical test results obtained p-value 0.006 <0.05 means that there was an interaction

between the knowledge of food handlers and the application of sanitary hygiene of street food. The good attitude of food handlers and the application of sanitary hygiene of street food were 20 (62.5%), the bad attitude of food handlers and the bad application of sanitary hygiene of street food were 51 (70.8%). Statistical test results obtained p-value 0.003 <0.05 means that there was an interaction between the attitude of food handlers and the application of sanitary hygiene of street food in high school cafeteria in Jambi City. The legible canteen sanitation and the application of sanitary hygiene of street food were 21 (61.8%), and the ineligible sanitation canteen and the bad application of sanitary hygiene of food were 50 (71.4%). Statistical test results obtained p-value 0.002 <0.05 means that there was an interaction between sanitation hygiene canteen with the application of sanitary hygiene of food in high school cafeteria in Jambi City.

#### MULTIVARIATE ANALYSIS

Multivariate analysis was used to determine which independent variables were most connected to the dependent variable. In this study the authors used multivariate analysis types Multiple Logistic Regression was one of the approaching way which used a mathematical model to analyze the relationship between several independent variables with the dependent variables,

Table 3. Interaction Analysis Results Between Knowledge, Attitude And Canteen Sanitation with the Application of Sanitary Hygiene of Street Food

Number	Variable	Log-Likelihood	G	P-Value
1	Knowledge	130,790	08,696	0,003
2	Attitude	129,264	10,222	0,001
3	Canteen Sanitation	128,992	10,494	0,001

Based on Table 3, it could be found that there were three variables that p-value <0.05, those were the knowledge variables with p-value of 0.003, the attitude variables with p-value of 0.001, and the sanitation canteen with a p-value of 0.001, thus all the variables entered into the multivariate model.

#### IV. DISCUSSION

The interaction of knowledge with the application of sanitary hygiene of street food, in this study there were more low knowledge food handlers compared with high knowledge food handlers. It showed that

knowledge of food handlers supported the application of sanitary hygiene or food. Multivariate analysis result with logistic regression that the knowledge variables tested together with the altitude variable and canteen sanitation variable gave a significant contribution to the application of food hygiene sanitation. This is indicated by the number of OR 3,429.

The research which was done by Yunacnah (2009:48) stated that 64% of food handlers who did not use the tools or damp while taking food had a potential of contamination.

The results of the study showed that the low knowledge of food handlers was the food handlers at SMAN 2 (42.5%), SMAN 6 (34.5%), and SMAN 7 (25.7%). The low knowledge of food handlers was because most of them got low education. The education of food handlers <High schools were: 81 (77.8%), and also there were no training, counseling and supervision by Health Office of Jambi.

Based on Rahmawati's Research, (2015: 52) that the action was based on the knowledge would be better than the actions that were not based on knowledge, where the correlation between knowledge and attitude of food handlers about hygiene, food sanitation and practices of food handlers in Tembalang Semarang were not good with the score of knowledge 52% and 64% for altitude.

The results of the bivariate analysis with *chi-square* showed that there was an interaction between the food handlers attitude and the application of sanitary hygiene or food in high schools cafeteria in Jambi city with a significant value of 0.003 ( $p < 0.05$ ). The application of good hygiene sanitation was more common than the bad attitude as many as 51, than a good attitude as many as 12.

The result of Multivariate analysis with double logistic regression, that the attitude of food handlers were tested together with knowledge of variables and canteen sanitation gave a significant contribution to the application of sanitary hygiene in high school cafeteria in Jambi City, even it was the most dominant variable. It was proved by the numbers OR was greater than the other variable is 4.899.

The results showed that the bad food handlers attitude were in the cafeteria SMAN 6 (4%), SMAN 1 (7.8%), and SMAN 8 (7.5%). The bad food handlers attitude is one of the reasons, because when the author was

doing this research. Jambi city was in drought at that time: so food handlers did not apply the principles of sanitary hygiene or food. The water was hard to find so the food handlers washed their dishes with a minimum amount of water and when serving the food, they did not think about the principles of sanitary hygiene because there were no training, counseling and supervision by Health Office of Jambi. Besides that, a crowded student in rest time made the food handlers could not serve the food by applying the principles of sanitary hygiene. They just thought how to sell all their foods.

Altitude is a tendency to respond positively or negatively to the organism, object or situation (Sarwono, 2007: 36). Attitude is not an activity but a predisposing of behavior formation (Notoadmodjo, 2007: 64). The expressing attitude also is something that is influenced by the surrounding circumstances, while the expressing attitude is a behavior. Behaviors and attitudes interact and influence each other (Walgitto, 2004: 40).

A positive attitude in the value of health, were not always implemented into a concrete action. Attitudes would become a real action was needed a supporting factor or a possible condition such as information, facilities and supporting factors of various parties (Notoadmodjo, 2007: 65). It means that the attitude is shown by the food handlers would not produce good results if the whole party can not support each others.

It fits with research Wagustina (2013: 8) stated that there was an influence of hygiene and sanitation training to the knowledge and behavior of food handlers with a percentage of 76%. Domain knowledge was very important for the formation of a person's actions. The action was based on the knowledge would be longer than the action that was not based on the knowledge (Maria, 2011: 15).

The interaction of canteen sanitation with the application of sanitary hygiene of street food, in this study there were more eligible canteen sanitation than the legible. Interaction with the application of sanitary hygiene of food sanitation accepted statistical  $p$ -value of 0.002 ( $p < 0.05$ ). It showed a support to the application of sanitary hygiene of food.

Research shows that the bad canteen sanitations were SMAN 2 (40.7%), SMAN 5 (32.4%), and SMAN 6 (33.3%). Based on interviews and observations, showed that the water sources in the high school in Jambi City were from PDAM, wells and boreholes/

Artesian well (Allachment 1). Willer parameters were observed in this study are the parameters of physical Willer (water is tasteless, odorless and colorless) based Permenkes 416 / Menkes / PER / IX / 1990 About Conditions and Water Quality Monitoring. Providing the clean water in SMAN 2, SMAN 6, SMAN 7 and SMAN 8 Jambi were less qualified in physically because the water color is yellow and smelling. The amount of water in high school in Jambi city also was minimal, because when the author was doing this research, Jambi city was in drought and smog at that time. PDAM water source was stopping, the well was dry, so the water was not enough and in a small amount. The food handlers washed their dishes by using minimum water in order that the water was enough for the other canteen's need. Unavailable water also affected Toilet/WC in the schools, WC conditions were not maintained cleanliness of their environment and caused a bad odor. To overcome this problem, school bought water by using the cistern for their daily needs.

Clean water is the water that is used for everyday purposes. As the limit, clean water is water that qualifies the requirements for drinking water supply system. Wibawa, A Research (2008: 14) stated that to support the application of sanitary hygiene of street food is the availability of sanitary facilities. Results showed that the sewerage at SMAN 2, SMAN 6 and SMAN 7 Jambi was not qualified, this was because of a pile of garbage around the disposal of the waste, so the waste water clogged and did not flow smoothly, and sewerage was very close to the neighborhood canteen so that the environment canteen often caused a bad odor, this could lead to breeding grounds for the nuisance vector and polluted the environment around the cafeteria. How to solve the problem, the garbage piled around the disposal or waste water was collected and disposed from the place so that waste water could flow smoothly. Waste water was the remainder of a business or activity that was in liquid form. Wastewater could be derived from household and industrial.

The sanitary facilities were the tools and equipments that must be available to maintain the quality of the environment or the controlling factors of the physical environment that can lead to contamination of the food or the surrounding environment, in addition to wastewater sanitation facilities were also needed such as the availability of waterproof bins, did not rust and closed. The Waste from the school canteens of SMA N 2, SMA N 6, SMA N 7 and SMA N 11 were thrown

in the trash which was used to accumulate the trash did not correspond to the amount of waste, cans were not closed and strewn around the canteen, there were no special personnel garbage, waste was disposed directly by the liquid handlers or the lime after selling, but taking out the trash when finished setting was not routinely carried out by the liquid handlers. This could damage the environment around the cafeteria and cause insects such as rats, cockroaches lived around and alighted on the food, so if consumers ate and used the utensils that could cause ptomaine poisoning, causing health problems and polluted the environment around the cafeteria. How to overcome this trash could be made a lot of larger bins to accommodate the amount of the waste and to prevent the entry of animals and caused had odor. Garbage should be disposed every day so to prevent environmental pollution caused by garbage,

Results of Santoso, research (2003: 8) stated that wastewater was a highly supportive factor cafeteria atmosphere, if the cafeteria near by the sewerage would cause the unpleasant smell and very disturbed consumers who ate in the cafeteria.

Based on the research that school canteens were not qualified because there were not applying the sanitary hygiene of street food, lack of sanitation facilities, no training, no counseling and supervision by Health Office Of Jambi, While the Mayor of Jambi programmed a healthy school and one of the indicators is the school cafeteria, a healthy school is a school that has sanitation such as clean water, sewerage that runs smoothly and flows, availability of toilet / WC, availability of bins are waterproof and have the lid as well as the availability of hand washing facilities. Hand washing facilities were available only in SMA 1, SMA Negeri 3, SMA Negeri 4 and SMA Negeri 5 but hand washing facilities were not well maintained, there were dirt bins in place of hand washing, container washstand looked dirty and there were larvae, except in SMAN 1 and SMAN 4 hand washing facilities provided in the form of small size pedestal surrounded pedestal mounted faucet for hand washing, the students wash hands with running water and soap and hand wipes also available. Hand-washing facilities could also be a learning tool to get a clean life, to get used to wash hands with soap and running water food handlers, the panel of teachers and students would have a clean and healthy living habits. This is same with Sulemah's research (2008: 38) stated that the relationship between canteen sanitation with physical place of food processing in University of Indonesia did

not available at 56% and the reason was because no supervision to canteen in University of Indonesia.

Nurtika's Research (2011: 8) stated that food handlers played an important role in canteen sanitation, where the condition of canteen sanitation were eligible besides the availability of facilities, attitudes or behavior of food handlers played an important role in the school cafeteria.

Multivariate analysis results obtained odds ratio (OR) of variable attitude was 4.899 (95% CI: 1.814 to 13.227) means the attitude variables have the possibility of the bad Application of Sanitary hygiene 5 times alter the controlled variable knowledge and environmental sanitation canteen. The analysis showed that the attitude was the most dominant variable interacts with the application of sanitary hygiene or food handlers in high school cafeteria in Jambi city with OR greater than other variables, 4.899.

According to Notoadmodjo (2007: 51) attitude is a reaction or response to someone who is still closed to a stimulus or object. Attitudes are the real show their connotation of conformity reaction to certain stimuli. A good knowledge becomes bad if it is not followed by a good attitude. It means that although the knowledge of food handlers on the application or sanitary hygiene or food is good, if it is not implemented with a good attitude then there will be no meaning.

## V. CONCLUSIONS

The conclusion of this research, there is a knowledge interaction with the application of sanitary hygiene or street food, where the low knowledge of food handlers was 59 (56.7%) with a P - value 0.006 and OR value of 3.429. There is an attitude interaction with the application of sanitary hygiene of street food, where the bad attitude of food handlers was 72 (69.2%) with a p - value 0,003 and OR value of 4.899. There is a canteen sanitation interaction with the application of sanitary hygiene of street food, where illegible canteen sanitation 70 (67.3%) with a p value of 0.002 and OR value of 3.090. There is a dominant factor that interacts with the application of canteen sanitary hygiene is the altitude with OR of 4.899, after being controlled by (95% CI: 1.814 to 13.227).

Suggestions for Government agencies (Jambi City Health Office and Department of Education & Culture Jambi) are expected to develop healthy school, compiling SOP, doing a promotion, training,

supervision and guidance to food handlers so we can create healthy school canteens, For Educational Departments are expected to support the environmental sanitation conditions of school canteen and issue policies that essentially supports environmental sanitation healthy school canteen and the school is also expected to evaluate the implementation of existing policies. As a policy holder, the school can work with the Jambi City Health Office and B'OM in controlling and giving supervision to the school cafeteria. For Other authors are expected to add variable financing, policies, culture and internal characteristics, so that we can know more about the factors that have an interaction with the application of sanitary hygiene of food and could be added the students as a research objects. Food handlers are expected to apply the sanitary hygiene of foods which are sold to guarantee the health of students and can create an environment of healthy school canteen.

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