



## Factors That Influence Canteen Conditions of Elementary Schools in Semarang City

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### Article Info

Article History :  
Accepted 21 Oktober  
2019  
Approved 16  
January 2020  
Published 20 April  
2020

### Keywords:

Canteen condition,  
healthy school,  
hygienic.

### Abstract

Healthy canteens must provide food and drinks that are guaranteed safety, nutrition and have safe, clean and healthy facilities for all school residents. The purpose of this study was to analyze the factors that influence the condition of the canteen in Elementary Schools of Semarang City. Type of analytic observational research. This study used a cross sectional design. Retrieval of data was using questionnaire instruments and observation sheets. Data analysis used chi square and logistic regression. The results of data analysis there was an influence between the level of knowledge of the canteen condition ( $p_v = 0.006$ ), there was an influence between the level of education on the canteen condition ( $p_v = 0.005$ ), there was no effect between training on the canteen condition ( $p_v = 0.972$ ), there was an influence between the availability of media the mass of the canteen condition ( $p_v = 0.018$ ), there was no influence between the accreditation status of the canteen condition ( $p_v = 0.72$ ). In conclusion, there was the influence of knowledge, level of education, and the availability of mass media on the condition of the canteen and there were two factors that do not affect such as the training and accreditation status of the canteen. The most influential factor was the availability of mass media. A healthy canteen condition will have an impact on the health of school residents and for elementary school students, a healthy canteen will support good growth and development.

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p-ISSN 2528-5998  
e-ISSN 2540-7945

## INTRODUCTION

Canteen is one of the important areas of school hygiene and sanitation. Other aspects of sanitation in schools will talk a lot about the general physical environment, sanitation facilities, general construction aspects (ventilation, distance between student seats and whiteboards, ergonomics, etc.). While in the canteen, many aspects of environmental health are related to the canteen, such as aspects of the behavior of the consumers, aspects of equipment, aspects of site sanitation, clean water sanitation (Hermiyanti, 2016).

The importance of supervision on food safety of school children in the National Agency of Drug and Food Control (BPOM) in 2015 conducted a feasibility test on snacks in the school environment, at 100 Elementary Schools in Central Java Province showed that 39.95% of 344 examples of food snacks did not meet safety requirements food. Syrup ice (48.19%) and soft drinks (62.50%) also contain harmful ingredients and are contaminated with pathogenic bacteria. Other types that do not meet the requirements are sauce and chili sauce (61.54%).

As in Anne's research, Hills et al (2015) Increased types of hazardous foods in school canteens increased in 2007, 7% of schools did not have menu items in the red or prohibited and dangerous categories in their canteen menus. The variety of unhealthy foods commonly served in school canteens, including fast food, sweets, and other snacks contribute to obesity (Buck, et al, 2013). In 2017, of the total cases of diarrhea in children as many as 924,962 people who had been handled in Central Java amounted to 417,178 (45.1%) people (Kemenkes RI, 2018). In the city of Semarang the number of diarrhea morbidity is among the top 10 highest each year.

In addition to diarrhea problems caused by unhealthy canteen conditions, there are also problems that can be caused, namely food poisoning. Food poisoning outbreaks data

compiled by the Directorate of Food Safety and Counseling (SPKP) of POM from 26 POM Centers throughout Indonesia in 2016 showed (21.4%) cases occurred in the school environment and (75.5%) groups of elementary school students (elementary school children) ) most often experience Food Poisoning for School Children Snacks (PJAS) (BPOM, 2016).

In the City of Semarang Based on the data collection of good labeled canteens carried out by the Semarang City Health Office there are only 19 school canteens that have been registered and certified well from DKK Semarang. For primary schools there are only 16 (18.5%) of 116 elementary schools that have become healthy schools in Semarang City (DKK Semarang, 2016).

Many factors affect the condition or status of school canteens including 64.9% of school canteen managers and 75.3% of PJAS vendors around schools still applying poor security practices. Of the PJAS vendors surveyed, 16.1% of canteen managers and 23.1% of PJAS vendors around schools still added BTP to the beverage products they sold.

The importance of routine supervision in the school canteen environment and the development of existing policies related to the school canteen so that all schools can create a canteen environment that complies with regulations made by the government and to further enhance a healthy canteen environment (Sze Lin Yoong, et al, 2015). Khusna (2014) there is a relationship between the level of knowledge of food consumers, the level of education, there is no relationship of training and there is an environmental relationship with the quality of canteen sanitation facilities.

Indirectly the condition of the school canteen and the ownership status of the school canteen will affect the health of students and affect the habits of students in choosing healthy eating and when viewed from the canteen ownership status by outsiders and not supervised by the school it will have an impact

on serving unhealthy food ( Erika Blamires Santos, 2015).

Adriani (2014) in reality a very fundamental weakness today is that schools with A accreditation do not necessarily have a good quality culture as in Widoro Public Elementary School which is included in UPT in the northern region of Yogyakarta. The lack of quality is caused by the low competency of the teaching staff and is accompanied by a lack of good learning infrastructure so that school management such as the school canteen has not run as expected.

The problems related to the canteen are so complex and therefore the government began to pay attention to this problem by creating a healthy school canteen program which began in 2009 by the Ministry of National Education is one of the interventions to maintain food security, especially in schools in Indonesia. In 2009 a healthy canteen program was implemented for 288 schools consisting of 7 provinces, and a healthy canteen program in 2010 began to be developed in each province throughout Indonesia by establishing cooperation between the Ministry of National Education and BPOM. In 2017 intervention began through the Safe Food Consumption Movement program through the School Canteen (BPOM RI, 2012). The purpose of this research is to find out the most influential factors in realizing a healthy canteen in Semarang Elementary School. The results of this study are expected to be a source of scientific information for the standardization of facilities and infrastructure related to the condition of a healthy school canteen that is good and later the results of this research can be a foundation in the development of existing sources both theory and law related to the existing healthy canteen conditions, and can be a reference for further research.

## METHOD

This type of research is observational analytic using cross sectional. The population in this study were all elementary schools in Semarang City in the academic year 2018/2019, namely as many as 602 elementary schools consisting of private and public schools under the auspices of the Semarang City Education Office. The sampling technique is Cluster Random Sampling obtained 86 School samples. This study uses univariate analysis techniques with table distribution, bivariate with chi-square tests and multivariate with logistic regression.

## RESULTS AND DISCUSSION

### Univariate Analysis

**Table 1.** Frequency Distribution Based on the Condition of School Canteens in Semarang City in June-July

Canteen Condition	Frequency	Percentage (%)
Not Good	32	37.2
Good	54	62.8
Total	86	100

Based on Table 1 it can be seen that the conditions of canteens in Semarang City are at most with good condition, namely 54 Schools (62.8%).

**Table 2.** Frequency Distribution Univariate Analysis of Independent Variable

Variable	Frequency	Percentage (%)
Knowledge		
Not Good	23	26.7
Good	63	73.3
Education		
Low	37	43
High	49	57
Training		
Not Yet	62	72.1

Already	24	27.9%
Mass Media		
Not available	18	20.9%
Available	68	79.1%
Accreditation		
Good	30	34.9%
Very Good	56	65.1%

Based on Table 2, it is known that the knowledge of food consumers is the most knowledgeable, the education of food consumers is the most highly educated, there are still more food consumers who have not participated in training. well.

**Bivariate Analysis**

**Knowledge Toward Canteen Condition**

**Table 1.** The influence of knowledge of food consumers on canteen conditions in Semarang City Elementary School

Knowledge	Canteen Condition				Total	p-value	
	Less Healthy		Healthy				
	F	%	F	%			
Less	14	60.9	9	39.1	23	100	0.006
Good	18	28.6	45	71.4	63	100	
Total	32	37.2	54	62.8	86	100	

\* *Chisquare test*

The results of the cross tabulation as shown in table 1 show that food consumers with insufficient knowledge mostly have unhealthy canteen conditions, totaling 14 respondents (60.9%). Food consumers with good knowledge mostly have healthy canteen conditions, totaling 45 respondents (71.4%). Chi Square test results obtained p-value of 0.006. Because the p-value  $0.006 < \alpha (0.05)$ , it is concluded that there is a significant influence between the level of knowledge of the canteen condition in the Elementary School of Semarang City.

High level of knowledge about food sanitation hygiene will influence workers to

implement food sanitation hygiene during the production process. Food in the canteen will be a pathogen transmission media if it is not managed properly. Transmission of the disease can occur directly or indirectly. In this case Food Handler (Food handler) plays an important role in the disease transmission process.

These results are in line with the research of Avrilinda (2016) that based on the results of the study the value of achievement for the influence of knowledge on behavior with a value of 0.043 which means there is a positive influence between the level of knowledge of someone on hygiene behavior in the Canteen of SMA Muhammadiyah 2 Surabaya.

Food consumers behavior that is classified as good is 49.37%. Food consumers behavior is significantly influenced by knowledge of attitudes and support of managers (Handayani et al., 2015). According to research conducted by Nurtika in 2014 in Yogyakarta, it was found that knowledge of food safety is related to the attitude of food consumers, while the attitude will determine the food safety practices of food consumers.

Good knowledge is needed in hygiene and sanitation activities in the process of providing food. Knowledge from food consumers will also affect the quality of the food. This shows that many of the food consumers in this study had good knowledge of 45 respondents (71.4%).

According to Swamilaksita (2016), there is a relationship between knowledge of food consumers ( $p = 0.012$ ) with the application of sanitation hygiene in the University canteen of Esa Unggul. Providing food that does not meet health requirements can cause disease.

Nordin et al (2015) revealed that awareness of food safety and food hygiene is very important which includes school canteen operators and food consumers in terms of food safety in school canteens. Cases of food poisoning in schools can also be avoided if the

existing laws are obeyed by all food consumers in the school canteen.

In addition, factors that influence awareness and situation in school canteens in Malaysia in terms of food safety issues such as guidelines, monitoring, awareness and campaigns, as well as knowledge must be focused and obeyed from time to time by food consumers, school canteen operators, school principals and school principals the other. Therefore, effective management of school canteens and human health with law enforcement, adoption, regulations and guidelines then ensures perfect human health to overcome food safety issues in school canteens and cause cases of food poisoning.

**Educational Level Toward Canteen Condition**

**Table 2.** The influence of level of education of food consumers on canteen conditions in Semarang City Elementary School

Level of education	Canteen Condition				Total		<i>p-value</i>
	Less Healthy		Healthy				
	F	%	F	%	F	%	
Less	20	54.1	17	45.9	37	100	0.005
Good	12	24.5	37	75.5	49	100	
Total	32	37.2	54	62.8	86	100	

\* *Chisquare test*

The results of the cross tabulation as shown in table 2 show that food consumers with low education levels mostly have unhealthy canteen conditions, totaling 20 respondents (54.1%). Food consumers with a high level of education mostly have healthy canteen conditions, totaling 37 respondents (75.5%).

Chi Square test results obtained p-value of 0.005. Because of the p-value  $0.005 < \alpha$  (0.05), it was concluded that there was a significant influence between the level of education on the condition of the canteen in Semarang Elementary School. The results of

this study are supported by Avrilinda's research (2016) that the results of observations indicate the level of education of food consumers in the Canteen of Muhammadiyah 2 Surabaya Senior High School with the highest number of junior high school graduates. These results can prove that education can have an effect on behavior. Education can be obtained from various kinds, formal education is not a major factor influencing a person's knowledge but non-formal education can also have an influence on one's knowledge including training, relationships between friends, the environment.

According to Wulansari's research (2013) on food delivery and the level of consumer satisfaction in the Zea Mays canteen, Bogor Agricultural University states that education is a very important factor in working. This is because the educational background reflects certain intelligence and skills so that someone's success will affect work performance. The higher the level of education the more likely to be successful in working even according to researchers because many of the food consumers in the canteen who are educated do not attend high school because of economic factors that require them to work and without thinking about school. Notoatmodjo (2012) said that the higher a person's level of education, the easier it is to receive and capture the information needed and will also increase his knowledge. From this theory, it can be concluded that education is one of the factors that can influence a person to behave positively. The higher education they have, the better their compliance behavior. Vice versa, if education education is low, the tendency to behave negatively is also greater.

**Training Toward Canteen Condition**

**Table 3.** The influence of training of food consumers on canteen conditions in Semarang City Elementary School

Training	Canteen Condition				Total		<i>p-value</i>
	Less Healthy		Healthy				
	F	%	F	%	F	%	
Not Yet	23	37.1	39	62,9	62	100	0.972
Already	9	37.5	15	62.5	24	100	
Total	32	37.2	54	62.8	86	100	

\* *Chisquare test*

The results of the cross tabulation as shown in table 3 note that most food consumers who have not been trained have healthy canteen conditions, totaling 39 respondents (62.9%). Most of the food consumers who have been trained have healthy canteen, which is 15 respondents (62.5%).

Chi Square test results obtained p-value of 0.972. Because of the p-value of  $0.972 > \alpha$  (0.05), it was concluded that there was no influence between the training on the canteen conditions at the Semarang City Elementary School. The results of this study are not in line with the results of Khairina's research (2018) the effect of visual delivery of sanitary hygiene media on individual hygiene practices showed significant results with a value of  $p = 0.001$  and a positive relationship with a strong correlation ( $r = + 0.667$ ), which means the delivery of media visually able to improve the practice of personal hygiene food consumers. These results are in line with research conducted by Kusuma (2017) which also shows significant differences in hygiene behavior by food consumers in hotels after counseling about personal hygiene ( $p = 0.014$ ). However, this study is in line with research by Sari et al. (2016) who found no significant differences in food consumers' hygiene practices after receiving counseling. This research is also supported by Swamilaksita's research (2016) which shows

that out of 38 respondents, 26 people (68.4%) have never attended training and 12 (31.6%) have followed training. Based on the results of statistical tests using the Chi Square test, to see the relationship between training and the application of sanitation hygiene in Esa Unggul University canteen in 2016, the value of p (sig) = 0.096 (sig <0.05), which means there is no significant relationship between training and the application of sanitation hygiene in Esa Unggul University canteen in 2016. This is not in accordance with the theory which states that training for workers is important to train workers in implementing basic sanitation because nothing happens in making food until the facilities are clean. Workers must be serious, professional and dedicated in understanding company policies and their role in the organization. Training must continue to focus on basic sanitation and the role of workers in maintaining food safety and hygiene. In order to improve the knowledge and skills of human resources who work in the city, food training / hygiene hygiene courses can be conducted. Food sanitation hygiene training / courses as referred to may be organized by the ministry of health, the provincial health office, the district / city health office or other institutions / institutions in accordance with statutory provisions (Permenkes, 2011).

**Mass Media Toward Canteen Condition**

**Table 4.** The influence of mass media of food consumers on canteen conditions in Semarang City Elementary School

\* *Chisquare test*

Mass media	Canteen Condition				<i>p-value</i>		
	Less Healthy		Healthy Total				
	F	%	F	%			
Not available	11	61.1	7	38.9	18	100	0.308
Available	21	30.9	47	69.1	68	100	
<b>Total</b>	<b>32</b>	<b>37.2</b>	<b>54</b>	<b>62.8</b>	<b>86</b>	<b>100</b>	

The results of the cross tabulation as shown in table 4 show that in the absence of media in the school environment most of them have unhealthy canteen conditions, totaling 11 respondents (61.1%). The existence of healthy canteen information media in the school environment mostly has healthy canteen conditions, totaling 47 respondents (69.1%).

Chi Square test results obtained p-value of 0.018. Because of the p-value  $0.018 > \alpha$  (0.05), it was concluded that there was a significant influence between the availability of mass media on the condition of the canteen in Semarang City Elementary School. The results of this study are in line with the study of Ulum (2017) that there is a positive and significant influence between the use of poster media with student behavior in maintaining environmental cleanliness in class II MI Nashrul Fajar Meteseh Tembalang Semarang academic year 2016/2017.

Social media exists like a group of countries or communities, in which there are also various ethics and rules that bind its users. This rule exists because the technology device is a machine that is connected online or can arise because of interactions between fellow users. This reality is in line with ideas. the image displayed by the media continuously until the audience finally seemed to be between

reality and illusion because the signs in the media seemed to have been cut off from reality. In other words, social media has become a reality itself, even what is more real and actual in it (Mulawarman, 2017). With the increasing number of mass media it is hoped that it can increase knowledge which can ultimately provide improvements to the canteen condition.

The results of this study are in line with Firi's research (2018) that out of 71 respondents, 44 people went on an unhealthy diet there were 33 people (71.7%) who were affected by the mass media and unhealthy dietary behavior, this percentage was greater than respondents who were not affected by the media mass and unhealthy dietary behavior as many as 11 people (44%). From the chi square statistical test results obtained p value  $0.041 < 0.05$  then  $H_0$  is rejected, which means that there is a significant relationship between the effect of mass media exposure with dietary behavior on Pekanbaru State Umbrella STIKes Students.

**Accreditation Toward Canteen Condition**

**Table 5.** The influence of accreditation on canteen conditions in Semarang City Elementary School

Accreditation	Canteen Condition				<i>p-value</i>		
	Less Healthy		Healthy Total				
	F	%	F	%			
Good	15	50	15	50	3	10	0.07
Very Good	17	30.4	39	69.6	0	0	2
			4		5	10	
					6	0	
<b>Total</b>	<b>32</b>	<b>37.2</b>	<b>54</b>	<b>62.8</b>	<b>8</b>	<b>10</b>	
			2		6	0	

\* *Chisquare test*

The results of the cross tabulation as shown in table 5 show that accredited status

with schools that have a good category of 30 total respondents have the same or equal canteen conditions ie less healthy canteen totaling 15 respondents (50%) and schools with good accreditation status with canteen conditions healthy amounted to 15 respondents (50%). Accreditation status with schools that have very good accreditation mostly has healthy canteen conditions, which amounted to 39 respondents (69.6%).

Chi Square test results obtained p-value of 0.072. Because of the p-value  $0.072 > \alpha$  (0.05), it was concluded that there was no significant effect between the status of accreditation on the canteen conditions in Semarang City Elementary School. Accreditation is an assessment process with certain facts-based indicators. Assessors make observations and assessments according to reality, without any manipulation (Jamal, 2011). According to Prof.Dr.M.Mastuhu, M. Ed in Jamal (2011) accreditation is the opposite direction of self-evaluation, which is meant by self-evaluation here is the assessment of outsiders in order to provide recognition of the quality of education held. So in a nutshell it can be said that accreditation is an assessment of the level of quality qualifications of private schools by the government. The recognition of the results of accreditation has the consequence of recognizing the position of private schools as "Registered" (less), "Recognized" (good), and "Equated" (very good) (Jamal, 2011).

Along with the development of the world of education which demands the quality of education that is able to meet the needs of the community, the Indonesian government in an effort to improve the quality of education is reflected through the decision of the Minister of National Education of the Republic of Indonesia No.087 / U / 2012 on June 4, 2002 a decree on school accreditation was issued. only private schools must be accredited or affected by the regulation, whereas now public schools must also be accredited. The results of accreditation research are expressed in the form

of accredited recognition and not accredited. Whereas accredited schools can be ranked into 3 classifications: very good (A), good (B), and sufficient (C) (Jamal, 2011).

### Multivariate Analysis

**Table 6.** Factors Analysis that Influence Canteen Condition in Semarang City Elementary School

No	Variable	B	t.Sig
	Constanta	3.160	0.000
1	Knowledge (X1)	1.452	0.022
2	Education (X2)	1.502	0.010
3	Mass Media (X6)	1.709	0.016

From table 6 it can be seen that the condition of the canteen is influenced by 5 (five) variables namely knowledge of food consumers, education of food consumers, attitudes related to canteen ownership, availability of mass media and school accreditation status. Of these five variables, the most dominant variable is the availability of mass media about canteen conditions with a value of  $\beta = 1,703$ . From the results of the multivariate analysis above it can be seen the results of the resulting logistic regression equation:  $Y = 3,160 + 1,709$  (Mass Media) + 1,550 (Education) + 1,452 (Knowledge).

The constant value of 3.160 in the regression equation above shows that the condition of the canteen is in the position of 3.160 when the mass media, education, knowledge and ownership variables are zero. The mass media variable in its effect on the condition of the canteen is positive at 1.709 which means that the mass media has a chance of 1.709 on the canteen condition. This means that if there is an increase in the availability of mass media, the canteen will be better. The education variable also has a positive influence on the condition of the canteen, where the value of B is 1.502. Where if the education of canteen consumers remember eating will have



a positive influence on the condition of the canteen.

## CONCLUSION

The factors that influence the condition of elementary school canteens are knowledge of food consumers, food handler education, availability of mass media and there is no influence of food consumers training and school accreditation status on the condition of elementary school canteens. The most influential factor on the condition of the canteen in Semarang City Elementary School is the availability of mass media about the condition of the school canteen.

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