

# Food Safety Analysis Based on Food Handlers at Girl Islamic Boarding School Hidayatul Mubtadia'aat Lirboyo

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## Food Safety Analysis Based on Food Handlers at Girl Islamic Boarding School Hidayatul Mubtadia'aat Lirboyo

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### ABSTRACT

*Keywords:*

*Behavior of food handler  
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**Introduction:** Food is a basic human need that is used for growth and development process. Food safety problems occur because of the food product is exposed to a dirty environment, so the food becomes contaminated by substances that can harm human health. The purpose of this study was to determine food handler's behavior with the implementation of food safety in food at girl Islamic boarding school hidayatul mubtadia'aat lirboyo.

**Methods:** The research design used in this study was observational, using cross-sectional approach. The population of all food handlers in Girl Islamic Boarding School Mubtadia'aat Lirboyo, by simple random sampling technique obtained a sample of 32 respondents. The independent variable in this study was the behavior of handler's food, while the dependent variable was food safety. The research instrument used a questionnaire and the results were analyzed using Spearman Rank test.

**Result:** The results showed 32 respondents have less behavioral food security in the medium category that is 16 respondents (50,0%). Results of analysis using Spearman rank test showed a p-value = 0.000 <  $\alpha$  = 0.05 so that H0 rejected and H1 accepted meaning there is a food handler behavior with food safety in the operation of the food in Girl Islamic Boarding School Mubtadia'aat Lirboyo.

**Discussion:** The behavior of the food handlers or managers of the most important procedures in order to maintain food security. Procedures maintain the cleanliness of one of them is related to the attitudes and behavior of clean. With this expected pattern of preventive measures such as sanitation managers of food handlers and handlers in Islamic boarding school.

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### I. INTRODUCTION

Food is a basic human need that is used for the process of growth and development. In addition to the process of growth and development, food also contains nutrients needed by the human body and also needed by microorganisms (such as bacteria and fungi) to sustain life. Therefore, food must be processed and stored properly to prevent food contamination from microorganisms. Every ready-to-eat food always undergoes a process of preparation, selection of raw materials, processing, storage, transportation to presentation. Of all these stages, there is a risk of causing food poisoning if food control is not carried out properly and correctly.

According to Djarisman (2004) in Ilmi (2014), food is a basic human need for survival and as a source of energy to carry out physical and biological activities in everyday life. The food needed must be healthy in the sense of having optimal and complete nutritional values such as vitamins, minerals, carbohydrates, proteins, fats, and others. Food must also be pure, clean and intact in the sense that it does not contain contaminants and must be hygienic.

According to Ilmi (2014), food poisoning is often found. Food poisoning is usually caused by consuming food or drink contaminated with toxic chemicals. However, food poisoning is also caused by poor food preparation and presentation, poor hygiene, cross-contamination, vector animals such as insects and rodents that land on food ingredients or after serving<sup>9</sup>.

In food management the things that must be considered are the source of food ingredients whether they are not polluted by insecticides and other pollution and not in a damaged state, in transportation basically has two objectives, namely food ingredients are not damaged and polluted, food storage does not occur contamination, Food processing is usually in the kitchen, so it is necessary to pay attention to the sanitation of the kitchen and its handlers as well as the storage and presentation of food to maintain sanitation<sup>1</sup>.

Rapiasih & Prawiningdyah (2010), said that the most important factors in determining foodborne diseases are the lack of knowledge of food handlers and ignorance of safe food management. Based on the records of BBPOM Pekanbaru, on April 20, 2011, a case of food poisoning occurred at the Dar El Hikmah Islamic Boarding School. And this case is a big case because it caused a total of 161 victims, although no one died. In 2007, 54 students of the Alfalah Abu Lam'u Islamic boarding school in the sub-district of Want Jaya, Aceh Besar, Nanggro Aceh Darussalam, were rushed to the hospital. They are suspected of having food poisoning served by the pesantren<sup>4</sup>.

In 2016, 14 students of the Nurul Huda LDII Islamic boarding school in Tempurejo Village, Pesantren District, Kediri City, were suspected of having food poisoning a few hours after eating sahur in the boarding school environment (Beritajatim.com). And there are many more incidents of food poisoning that occur in various Islamic boarding schools as a result<sup>12</sup> food processing that is not in accordance with the principles of food hygiene and sanitation. Based on this background, the researcher is interested in carrying out research entitled "Food Safety Analysis Based On Food Handlers At Girl Islamic Boarding School Hidayatul Mubtadia'at Lirboyo"

## II. METHODS

The research design used in this study was observational, using an approach cross-sectional. The total population is all food handlers at the Pondok Pesantren Putri Hidayatul Mubtadia'at Lirboyo, with a simple random sampling technique obtained from a sample of 32 respondents. The independent variable in this study is the behavior of the handler, while the dependent variable is food safety. The research instrument used was a questionnaire sheet and the results were analyzed using test Spearman rank.

## III. RESULTS AND DISCUSSION

### Characteristics of Respondents

Characteristics of respondents in this study include the characteristics of respondents based on age, education, and length of work.

No.	Behavior	Σ	%
1	Less	18	56,3
2	Enough	11	34,4
3	Good	3	9,4
	<b>Total</b>	<b>32</b>	<b>100,0</b>

Table 1 Characteristics of respondents based on age, education, and length of work for handlers at the Hidayatul Mubtadia'at Lirboyo Islamic Boarding School

Table 2 Behavior of Food Handlers at Pondok Pesantren Putri Hidayatul Muhtadiah'aat Lirboyo

Characteristics	Σ	%
<b>Age</b>		
15-20 years	14	44
21-30 years	18	56
<b>Education</b>		
Basic (elementary, junior)	6	19
Secondary Education (High School)	26	81
<b>Period of working</b>		
<1 year	1	3
1-2 years	6	19
>2 years	25	78

Table 3 Food Safety in Food Service at the Putri Hidayatul Muhtadiah'aat Lirboyo Islamic Boarding School.

No.	Keamanan Pangan	Σ	%
1	vulnerable, unsafe	0	0,0
2	vulnerable, safe	0	0,0
3	Average	18	56,3
4	Good	14	43,8
<b>Total</b>		<b>32</b>	<b>100,0</b>

Table 4 Relationship Behavior With food handlers Food Safety In Food Operation In Pondok Putri Hidayatul Muhtadiah'aat Lirboyo Islamic Boarding School.

		Food Safety		
		Moderate	Good	Total
Behavior	Less	Count 16	2	18
		% of Total 50,0%	6,3%	56,3%
	Enough	Count 2	9	11
		% of Total 6,3%	28,1%	34,4%
	Good	Count 0	3	3
		% of Total ,0%	9,4%	9,4%
Total		Count 18	14	32
		% of Total 56,3%	43,8%	100,0%
<i>p-value = 0,000 &lt; = 0,05</i>		<i>r = 0,749</i>		

**Food handler behavior at the female Islamic boarding school Hidayatul Muhtadiah'aat Lirboyo handling**

Food behavior at the female Islamic boarding school Hidayatul Muhtadiah'aat Lirboyo it is handling known that most of the respondents have food behavior in the poor category, namely 18 respondents (56.3%).

Research results obtained food handlers do not yet apply food processing requirements personal hygiene (*personal hygiene*) a food handler. It is known that most of the respondents have food handling behavior in the less category, namely 18 respondents (56.3%).

These behaviors include (1) washing hands before processing food, personal hygiene that still needs to be improved on female students in terms of hand washing is still very lacking, so there are only 10% or a total of 3 students who have washed their hands before cooking food; (2) Wearing an apron when working, the cottage does not provide aprons, so that the implementation of hygiene requirements is constrained by the existing infrastructure; (3) Wearing a head covering when working, in this case it is definitely neat because the food handlers in this study were female students, so all of them wore the hijab; (4) Wearing masks when working, female students do not wear masks because they are not provided by the boarding school; (5) wearing gloves, the cottage does not provide gloves, so that the implementation of hygiene requirements is constrained by the existing infrastructure; (6) Using assistive devices / tongs when taking food, as well as an apron, food tongs are still not available; (7) Covering cooked food, in the cottage kitchen or in the dining room, it is rare for female students to cover the food they have cooked, this is also due to the lack of infrastructure or not yet provided by the boarding school; (8) Not conversing, 46.9% have done this, but there are still some handlers who have not implemented this because while cooking, on average, they always talk to each other; (9) Not scratching their limbs, there are only 10 handlers or 31.25% who have not scratched their limbs while cooking, this means that there are still many handlers who must be given counseling about the importance of hygiene requirements to them, that this will also affect the incidence of diarrhea; (10) Not chewing food, most of the handlers have done, only some are chewing, but chewing to taste the ingredients that are being cooked; (11) Not using jewelry, even though there are rules for not wearing jewelry or other valuables in the cottage, this is still not obeyed by the students, so that when cooking there are still many of them who wear jewelry, which is 78.1 %; (12) Do not lengthen the nails, this is the rule of the lodge, so 62.5% of them have short nails; (13) Separating raw materials from final products, because the kitchen is not so wide, so that to separate raw materials from final products can only be done by 2 people who may be experts in this matter; (14) Not eating and drinking while working, has been applied by many students; (15) Dispose of garbage in its place, the trash can is limited so that for the time being the students collect the trash in a plastic bag that can be used as a temporary container, only after that they will throw it into the trash that has been provided. So that in this case there are only 7 people or 21.8% who dispose of waste in its place; (16) Covering wounds on the body, adequate medical equipment in the cottage so that the students can be treated for wounds on their bodies in a simple way, 93.7% are able to treat wounds by wrapping the wound; (17) Do not spit, because the cooking conditions in a crowd and turns do not allow spitting in the kitchen area, already 62.5% who do not spit while cooking or eating food; (18) No smoking, because female students are so no one smokes; (19) Not sneezing and coughing towards food, sneezing and coughing are reflexes or unintentional so that there are still some touchers of 59.3% who still sneeze or cough towards food.

From the results of the answers above, this behavior is because food handlers still carry out risky behaviors when processing food, including not wearing masks, not wearing aprons and gloves. Other risky behaviors that are often carried out by food handlers include conversing, scratching limbs, using jewelry, and chewing food while processing food.

#### **Food Safety in the Provision of Food at the Putri Hidayatul Muhtadia'at Lirboyo Islamic Boarding School**

Food Safety in the Provision of Food at the Putri Hidayatul Muhtadia'at Lirboyo Islamic Boarding School it is known that most of the respondents have food safety in the moderate category, namely 18 respondents (56.3%).

The results showed that the food safety at the research site was categorized as moderate, which means that there is a possibility that the food produced is contaminated with rice. Such as contamination of food ingredients both in processing and in the presentation which is still not in accordance with the hygiene requirements of food handler behavior. And it can also come from the equipment used for cooking as well as clothing and personal hygiene that is lacking. Based on observations made to food handlers, they wash the cutlery used using water and soap, but the water used is stagnant water which is stored in a tub and used for several washings.

Based on the results of the analysis of food handlers' answers, it is known that the thing that is rarely considered is closing the food so that it allows the food to be infested by flies and insects which are most likely to be contaminated, causing diseases such as diarrhea.

#### **Relationship between food handler behavior and food safety in food delivery at the Putri Hidayatul Mubtadia'at Lirboyo Islamic Boarding School**

The results of the analysis using the test *Spearman Rank* showed  $p\text{-value} = 0.000 < = 0.05$  so that  $H_0$  was rejected and  $H_1$  was accepted, which means that there is a relationship between food handler behavior and food safety in food administration at the Putri Hidayatul Mubtadia'at Lirboyo Islamic Boarding School.

In accordance with the results of observations that have been made by researchers, there are 15 indicators of food safety assessment, including (1) The presence of hair in food, this is probably precisely because respondents who wear the hijab every day so that the hair is not maintained and left alone so that the hair will be easy, fall out during activities, one of which is during the cooking process in a kitchen that has hot room conditions; (2) The presence of gravel in the food, the lack of cleanliness of the foodstuffs to be processed, in the observation it appears that the rice to be cooked is not filtered (cleaning the gravel) which in the end results in the rice / ready-to-eat food containing small pebbles; (3) Presence of metals in food, during the observation, researchers did not find metals in food ingredients or ready-to-eat foods; (4) Growing mold on food, the researchers did not find any mushrooms in food or ready-to-eat food, because in the cottage kitchen there is already a schedule and coordinated food supply so that cooked ingredients and food will always run out and it is not possible for mold to develop. ; (5) The growth of insect larvae on food, during the observation no larvae were found; (6) Food that is infested with insects, while observing ready-to-eat food, especially insects are always infested, this is due to the dark and humid and even dirty kitchen conditions that make the insects infest the food, another reason is due to limited infrastructure (serving hood) / cover food from the lodge; (7) Food smells different than usual, it is not found because the average food always runs out without residue; (8) The smell of food causes nausea, all processed food is fresh so that there is no food that causes nausea; (9) Smell of rotten food, not found; (10) Other colored spots appeared on the food, not found at the time of observation, on average the students cook using the spices they make themselves so that the resulting color also looks normal; (11) Food changes color as a whole, not found at the time the researcher made observations; (12) Colorless food, as is customary, was found because in the cooking process the students mixed the spices they mixed using natural dyes (turmeric, pandan leaves, bay leaves, etc.); (13) Liquid food turns into solid, no; (14) Food changes to be more liquid, not present during observation; (15) The appearance of liquid in solid food, or solid in liquid food, was not found at the time of observation. So that from 15 food safety indicators found including the presence of hair in food, the presence of gravel in food, and food infested with insects which will result in moderate food safety. With these conditions, the quality of food becomes unhygienic and can cause diseases carried by these insects.

#### **IV. CONCLUSION AND RECOMMENDATIONS**

##### **Conclusion**

1. Most of the respondents have a behavior of food handlers in the less category, namely 18 respondents (56.3%).
2. Most respondents have food safety in the medium category, namely 18 respondents (56.3%).
3. There is a relationship between the behavior of food handlers and food safety in the provision of food at the Pondok Pesantren Putri Hidayatul Mubtadia'at Lirboyo.

##### **Suggestions**

1. for Further Research  
Develop this research by examining other factors other than handlers that affect food safety in food managers in the cottage.
2. Research Place

Provide input to food managers in order to improve their personal hygiene so as to avoid food contamination.

3. Health Institutions  
Increase supervision on food processing, especially those carried out en masse every day.
4. Educational Institutions  
Improving the quality of learning about personal hygiene in food handlers, because it can encourage students to understand it more easily.
5. Respondent Institutions  
Improve their quality by carrying out food processing processes according to their needs.

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