

The Existence of *Staphylococcus aureus* at the Imported Clothing in Makassar City

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ABSTRACT

Used clothing is not good for use because it does not know the history of previous users so that there is a possibility for contracting a very large infectious disease from bacteria on the clothing. Previous research found that the most commonly isolated bacteria are *Staphylococcus Aureus*, *Staphylococcus Aureus* can survive on clothing. Indonesia is one of the developing countries in the world which is a destination for used clothing exports. This type of research is quantitative to identify the presence of *Staphylococcus Aureus* bacteria in imported used clothing that is sold in several markets in Makassar City. The population in this study were traders and used clothing sold in the Makassar City market in South Sulawesi Province consisting of 5 traders in the eggplant market and 5 traders and Gor Sudiang. The sampling technique used is random sampling. The results showed that the merchant's knowledge related to the problem of cleaning used imported clothing so that it is safe when used by consumers is quite good. The attitude of traders has a positive attitude related to the problem of cleanliness of imported used clothing so that it is safe when used by consumers. The actions of traders regarding the problem of cleaning imported second-hand clothing to be safe when used by consumers are quite good. Whereas the results of laboratory tests stated that there were no *Staphylococcus Aureus* bacteria found in imported used clothing at the Terong and Gor Sudiang Markets. However, in this laboratory test found another bacterium in imported used clothing, the *Bacillus Sp.*

Keywords: *Staphylococcus aureus*; Used Clothing; Market.

INTRODUCTION

The world of fashion is one of the attractions of a person towards his social degree that presents its own beauty for the wearer to look stylish and trendy. Branded clothes on average have expensive prices that make people interested in using imported used clothing. The high need for clothing and an uncertain economy are the main factors people prefer imported used clothing rather than new clothing. Used imported clothing is good, branded and very cheap¹.

Used clothes are clothing items that have been used by one person before for the current user. Most used clothing, including sweaters, coats, shirts, underwear, socks, boots, shoes, toys and sandals. These clothes are generally imported from Asia and the West. The largest used clothing exporter in the world is the United States (US) followed by Germany, the UK and the Netherlands, while the largest used clothing importer is Sub-Saharan Africa, Southeast Asia and Eastern Europe².

Indonesia is a developing country in the world which is a destination for used clothing exports. The results of the analysis of used clothing import reports conducted by the Ministry of Trade in 2015 stated that in 2013 Indonesia became the 152th largest importer of used clothing in the world³.

The biggest consumers of used clothing in Indonesia are young people. Traders use imported second-hand clothes because they like to use certain brands of clothing and the brands do not enter

Indonesia officially, so it is easier for traders to get the clothes they want. Used clothing also has good quality and is sold at low price⁴.

Used clothing is not good to use because it does not know the history of previous users so that there is a possibility of contracting a very large infectious disease from bacteria on the clothing⁵. Purchasing used clothing is considered one reason for transmission of skin pathogens among users, especially when used without washing, also washing clothes with detergent granules is more effective at removing bacterial contamination than ordinary soap (Neon soap). Children's clothing must be carefully cleaned before use because it is colonized with a bacterial colony even after washing with detergent. According to Olajubu performed on used clothes in Nigeria with various types of cloth, it was found that the bacteria most frequently isolated were *Staphylococcus Aureus* with 60.7%. In other words this research shows the level of contamination of *Staphylococcus Aureus* bacteria in clothing is very high⁶.

Staphylococcus aureus can survive on clothing. Research conducted by the Department of Microbiology and Immunology of the University of New York conducted a bacterial test on 14 new pieces of clothing, ranging from tops, pants, and underwear. As a result, traders found traces of yeast particles, feces, saliva, skin bacteria, and vaginal bacteria attached to new clothes⁷.

The Director General of Standardization and Consumer Protection tested 25 used clothing items on the market. Samples were taken at the Jakarta Senen Market consisting of several types of clothing including children's clothing (jackets), women's clothing (vest, warm clothes, dresses, skirts, tops, hot pants, shorts, underwear, bras), men's clothing (jacket, trousers, shorts, shirts, t-shirts, shirts, sweaters, shirts, boxers, underwear). Tests carried out on several microbes that survive on clothing, namely *Staphylococcus aureus* bacteria. From the results of these

tests, found a number of bacterial colonies which were shown by testing the Total Plate Number (ALT) parameter. Microbial content in used clothing has ALT of 216,000 colonies².

The use of used clothing causes disease that starts from direct contact with the skin or is transmitted by human hands and then carries the infection through the mouth, nose and eyes. Contamination of bacteria and mold can cause health problems. *Staphylococcus aureus* bacteria can cause ulcers, zits, and wound infections in human skin⁸.

Based on the description, it is likely that used clothing sold at the Makassar City of Terong and Gor Sudiang markets is suspected to have bacteria that can cause disease. So that it is necessary to identify bacteria if bacterial infection occurs can be treated directly with appropriate antibiotics and provide behavioral changes to the people of Makassar so as not to use imported used clothing.

MATERIALS & METHODS

This type of research is quantitative to identify the presence of *Staphylococcus Aureus* bacteria in imported used clothing that is sold in several markets in Makassar City. The location of the study was carried out in several markets in Makassar City in November 2019. The population in this study were traders and used clothing sold in the Makassar City market in South Sulawesi Province consisting of 5 traders in the Eggplant market and 5 traders and Gor Sudiang. The sample size in this study was 5 traders from each market and 5 clothing (shirts, shirts, negligee, pijamas, sweaters) from each market (Pasar Terong and Gor Sudiang). The sampling technique used is random sampling, where sampling is done randomly.

Primary data were obtained from the results of examinations at the Makassar Laboratory of Health Laboratory while secondary data were obtained from other parties such as books, literature and journals. The data obtained were further

analyzed descriptively. The analysis used in this research is descriptive data analysis in which descriptive analysis is done by looking at the presence or absence of *Staphylococcus aureus* bacteria on the media

Statistical Analysis

Result was done by using SPSS (Statistical Packages for Social Sciences), we used analysis univariate each variable.

RESULT

Table 1 The Characteristics of Respondents in Imported Clothing in Makassar City

characteristic		N	%
Age	26-35	2	20
	36-45	5	50
	46-55	3	30
Sex	Man	7	70
	Women	3	30
Education	SD	1	10
	SLTP	3	30
	SMU	6	60

Based on table 1 shows that the characteristics of the age of used clothing importers (claws) in the Terong and Gor Sudiang Market in Makassar City are 26 people in the age group of 26-35. gender characteristics of used clothing importers (claws) in the Makassar City of Terong and Gor Sudiang Markets with male gender of 7 people (70.0%) and women of 3 people (30.0%). the last educational characteristics of used clothing importers (claws) in the Makassar City of Terong and Gor Sudiang Markets, where the last education of traders at the elementary level is 1 person (10.0%), the last education of traders at the junior high level is 3 people (30, 0%), and the last education of traders at the high school level is 6 people (60.0%).

Table 2 Trader's behavior towards the presence of *Staphylococcus aureus*

Attitude		N	%
Knowledge	Good	5	50
	Less	5	50
Attitude	Positive	9	90
	Negative	1	10
Action	Good	10	100
	less	0	0

Based on table 2 shows that the knowledge of traders about used clothing

imports (claws) in the Market of Terong and Gor sudiang Makassar city in 2019 who have good knowledge of 5 people (50%) and who have less than 5 people knowledge (50%) . attitude of traders about used clothing imports (claws) in the Market of Terong and Gor sudiang Makassar city in 2019 who have positive attitudes of 9 people (90%) and who have negative attitudes of 1 person (10%). second hand clothes (claws) imported at the Pasar Terong and Gor sudiang Makassar city in 2019 which have good actions of 10 people (100%).

Table 3 Identification of *Staphylococcus Aureus* bacteria

No	code sample	Gram staining	Result
1	01 T	Bacilli Gram Positif Spora (+)	Negatif
2	02 T	Bacilli Gram Positif Spora (-)	Negatif
		Coccus Gram Positif	
3	03 T	Bacilli Gram Positif Spora (+)	Negatif
4	04 T	Bacilli Gram Positif Spora (+)	Negatif
5	05 T	Bacilli Gram Positif Spora (+)	Negatif
6	01 G	Bacilli Gram Positif Spora (-)	Negatif
7	02 G	Bacilli Gram Positif Spora (-)	Negatif
8	03 G	Bacilli Gram Positif Spora (+)	Negatif
		Bacilli Gram Positif Spora (-)	
9	04 G	Bacilli Gram Positif Spora (-)	Negatif
		Coccus Gram Positif	
10	05 G	Bacilli Gram Positif Spora (-)	Negatif

Based on table 3 shows that the test results of the *Staphylococcus Aureus* bacteria on imported secondhand clothing (claws) in Makassar City Eggplant Market from the used second hand claw imports examined have negative results on the *Staphylococcus Aureus* bacteria ie there is no growth of *Staphylococcus Aureus* colonies in the used imported clothing (claws) studied. which is in the Terong Market and Makassar City Gor Market. However, the types of bacteria present in used clothing (claws) are *Bacillus Sp*, and *Enterococcus sp*.

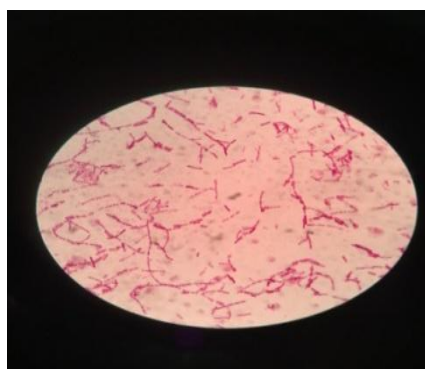


Figure 1. Bacilli Gram Positive Spora (+)in the piyama shirt

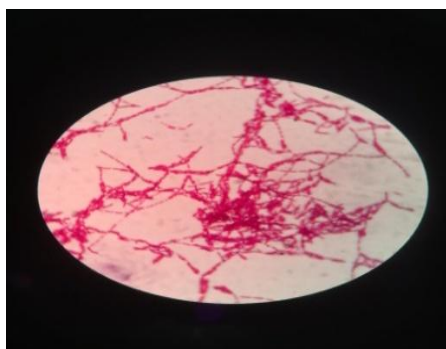


Figure 2. Bacilli Gram Positive Spora (-) in t-shirt

DISCUSSION

The results of the study using a questionnaire showed that of the 10 respondents there were 5 respondents who had good knowledge about cleanliness of imported used clothing and there were 5 respondents who had less knowledge about cleanliness of imported used clothing. Respondents who mostly have the highest high school / equivalent education, this also has an influence on the level of knowledge of traders about the cleanliness of imported used clothing so that it is safe when used by consumers if used on the human body⁹.

Based on field observations, it is known that traders all feel imported used clothing does not cause disease and feel safe when used. Traders also feel that there is no correlation between illnesses suffered by consumers if they wear imported used clothing. Traders do not know that bacteria are also present in clothing and can be a cause of disease. Traders only know that imported used clothing that traders sell is fine for consumers.

Although the respondents in this study graduated from high school and elementary school, the results of respondents' answers to the questionnaire showed that the overall knowledge of respondents was high. But if observed by each question item, there are still many respondents who are wrong in answering in certain questions. This shows that the respondent's knowledge is already quite high but the knowledge is not optimal⁸.

Knowledge that is not optimal can be influenced by the cognitive domain. The formation of knowledge by the cognitive

domain has 6 levels, namely: know (know), understand (comprehension), application (application), analysis (analysis), Synthesis (synthesis), and evaluation (evaluation)⁷ adds that knowledge is also the result of human sensing of certain objects that are affected by intensity, mainly influenced by the sense of hearing and vision. Based on this it can be concluded that high knowledge is not absolutely influenced by formal education but can also be caused by the sensing process by the respondent's exposure to information related to food safety especially formalin foods through mass media.⁸ research on traders' knowledge of formaldehyde tofu stated that the knowledge of tofu sellers in the West Jakarta semanan market to formalin was in the low category of 38.2% and high category 61.8%. Which in this study respondent in this study have not yet reached the stage of understanding (comprehension), i.e. they have not been able to explain why formalin is dangerous and what the consequences are⁹.

Based on the research, it was found that the attitude of the traders related to the problems of the traders' attitudes related to the hygiene and safety problems of the former imported clothes was found that there were 9 respondents who had a positive attitude, it meant that the readiness and readiness of the traders in the cleanliness and security of imported secondhand clothing was good. Although attitude is not a form of action, attitude is a predisposing factor for someone to behave¹⁰.

During the interview process regarding attitudes to the cleanliness of imported used clothing so that it is safe when used by consumers, the average trader answered that he disagreed with the statement that imported used clothing had a negative impact on the health of the wearer. The traders also take the attitude that the merchant strongly agrees that cooking imported used clothing is one way to eliminate bacteria. Attitude is a readiness or willingness to act and is not an implementation of certain motives. Attitude

is not yet an action or activity but it is a predisposition to the action of a behavior. In thinking components of emotions and beliefs work¹¹.

The researches on traders' knowledge of formaldehyde know that the seller's attitude knows 35.5% negative and 64.7% positive. In addition, as many as 67.6% expressed their disapproval of the existence of formalin in tofu in the Semanan Regional Market of Kaliders. Based on the results of research from the questionnaire that all respondents have good actions as many as 10 respondents. On the other hand, in the frequency distribution regarding traders' actions on the cleanliness of imported used clothing so that it is safe when used by consumers obtained from observations and interviews, it was found that the number of respondents who mostly did not meet the aspects of cleaning measures used imported clothing to be safe when used by consumers such as not washing used clothing before being marketed, traders rarely find out the origin of imported used clothing¹².

The results of observations in the field revealed that the average respondent kept his clothes in a sack and then stored them in a dry place. Traders also maintain the quality of the goods being marketed. Actions are considered as the result of interactions between factors that are within (the individual characteristics) and external factors (external factors). The process of interaction itself occurs in one's awareness or knowledge¹³.

According to the theory of Lawrence Green behavioral factors are influenced by predisposing factors, enabling factors and reinforcing factors. The predisposing factors in this case are knowledge and attitude. Basically forms of behavior can be observed through attitudes and actions. But that does not mean behavior can only be seen from attitudes and actions. Behavior can be potential in the form of research, motivation and perception. With the perception of an individual being aware of being able to understand about the state of the

environment around him or about things that exist in the individual concerned¹⁴. There are 3 main components in the process of perception, namely selection, interpretation (interpretation), The perception in this study is illustrated from the question of knowledge and attitude, based on knowledge it appears that from certain items of questions such as the impact of imported second hand clothes, many traders answer not knowing and attitudes related to imported second hand clothing cause a negative impact on the health of most respondents tend to disagree in answering. When in fact there are bacteria that can cause disease to the human body. This shows that the perception at the stage of interpretation (interpretation) of respondents is not entirely correct. So this makes a difference with behavior.10, 8, 11 In contrast the research on the sale of formalin tofu as much as 73.5% sell formalin tofu, which shows that respondents who are well-informed and have a positive attitude actually practice the sale of formalin food¹⁵.

The results of the knowledge, attitude and action questionnaire revealed that the traders were good enough from the three variables and this was in line with the results of the laboratory tests. That's because observations show traders display and store imported used clothing (claws) in a dry place. As it is known that the bacterium *Staphylococcus aureus* grows at 37 ° C but is best in the formation of pigments at room temperature (20-25°C). In the sense that these bacteria live and breed in damp or wet places. In contrast to F.A. research Olajubu, where the study was found to be more isolated by *Staphylococcus Aureus*, was used in clothing in the Nigerian Market by 60.7%. In other words this research shows the level of contamination of *Staphylococcus Aureus* bacteria in clothing is very high¹⁵.

Laboratory results found that the bacteria found in imported used clothing (claws) is *Bacillus* sp, because it has the ability to withstand environmental temperatures and for others cannot survive

due to heat. This is in accordance with the research who found bacteria contained in imported used clothing are *Actinomyces*, *Bacillus*, and *Corynebacterium*. In line with Agbulu, CO (2015) research on Isolation and characterization of microorganisms associated with second hand female undergarments and children wear sold in Makurdi Metropolis, which is found more by the *Bacillus Sp* bacteria as many as 60 colonies in imported secondhand clothing types of pants, bras, and children's clothing

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CONCLUSION

A total of 10 respondents used imported used clothing (claws) in the Terong Market and the Gor Sudiang Market in Makassar City have quite good knowledge and actions as well as positive actions on imported used clothing (claws). Examination results on imported used clothing samples at the Pasar Terong and Gor Sudiang, did not find *Staphylococcus aureus* bacteria.

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