

Conference Paper

Factors Related to Using Styrofoam Containers for Food Packaging

Annissa^{1*}, Puji Eka Mathofani¹, Sari Suriani¹, Feling Polwandari², Ati Sakinah¹

¹Public Health Study Program, Faculty of health sciences, Universitas Faletehan, Serang, Banten, Indonesia

²Bachelor Study Program, Midwifery for Professionals, Universitas Faletehan, Serang, Banten, Indonesia.

Abstract.

Styrofoam waste is included in the 5th largest category in the world. Plastic consumption in Indonesia is 17 kg per year. The amount of waste heap in Serang City is around 1625 m³/day. Taktakan Health Center occupies the 3rd largest waste producer in Serang City, and the waste increases every year. This study aims to determine the factors related to the using of styrofoam containers as food packaging for food vendors in the Taktakan Health Center, Serang City in 2020. This research used a quantitative analytic, cross-sectional study design. The population was 178 food sellers, and the sample size was 95 respondents with simple random sampling. The data collection was done using a questionnaire. For data analysis univariate and bivariate analysis with a Chi-square statistical test were used. The results of this study indicate that there is a relationship between knowledge (P-value = 0.001), availability of packaging (P-value = 0.043) and the use of styrofoam containers. Respondents with less knowledge had a risk of 4.694 times the possibility of using styrofoam. Suggestions for food sellers are to reduce the use of styrofoam containers for food packaging.

Keywords: attitude, availability of styrofoam, food packaging, knowledge

Corresponding Author: Annissa;
email: annissa1206@gmail.com

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1. Introduction

According to the environmental protection agency (EPA) styrofoam is the world's fifth largest dangerous waste producer, it is because it comes from styrofoam floaters, which are processed with benzene. Benzene is one of the substances that can cause many diseases. According to the 2018 world waste management, in Asia 5 (five) countries are affected by such environmental effect as the world's largest styrofoam garbage producer, Vietnam (1.8 million metric tons), Vietnam (1.8 million metric tons), the Philippines (1.9 million metric tons), Indonesia (3.2 million metric tons), and China (8.8 million metric tons) [1].

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According to the world health organization [2], the world's 5 major types of garbage, a cigarette butt that is produced about 6 trillion annually and over 90% of its plastic filter, account for more than 1 million tons of paltry produced each year from cigarettes. The second most high of garbage packaged food, food packaging and drinks contribute 146 million tons per year, the third is the use of plastic bags, the fourth is the use of plastic straws, and the fifth is styrofoam [3].

Per capita plastic consumption in Indonesia is 45 pounds (17 kg) a year. There will be a 6 -7% of plastic consumption growth per year [4]. The number of people in the city Serang in 2019 roughly 650,000, assuming each soul was treated by trash 0.0025 m³ per day, hence the daily garbage bucket of some 1,625 m³/ day. While by means and infrastructure, the city government, transporting garbage to tpa cilowong citations 600 m³ daily. While those managed or transported by others/private parties vary 130 m³/ day. So from the garbage bucket of 1,625 m³/ day, which was transported to TPAS Cilowong about 730 m³/ day. The weight of the garbage at TPAS Cilowong averages 500 pounds /m³. As for the garbage types, 65% leftovers, paper, cartons and nappies 8%, wood and textile products 0.75%, rubber and 0.50% skin, 0.50% metal, 0.50% glass, 0.25 percent, and plastic 20% (tpa cilowong 2019). This can be seen that plastic litter came in second, that is, most of the litter found in TPAS Cilowong.

The Serang city has 6 sub-districts consisting of Cipocok Jaya, Curug, Kasemen, Serang, Taktakan and Walantaka. Kecamatan Taktakan the third most landfill in Serang City. According to the interview with the director for the clean purposes of the environment service, there are still a large number of people in the neighborhood. Garbage produced in the taxable sub-district in 2018 reached 62,050 m³ and by 2019 reached 81,639 m³ (DLH garbage data). By comparing data 2018 with data 2019, the amount of garbage produced in notarized notards year after year is rising, is due to increasing population and poor social behavior , as well as the number of food sellers packing and one such type, is styrofoam.

The results of the interview using a query sheet from the food vendors in the Puskesmas Taktakan about the availability of styrofoam show that styrofoam is easily available, which is why the sellers use styrofoam, which is also supported by the study of the factors associated with the use of the styrofoam containers as food containers in DKI Jakarta, Results from this study suggest significant variables or value 0.05 with availability of 0.026 value, it suggests that there is a connection between availability and the use of styrofoam containers in the food chain [5].

Puskesmas Taktakan is one of the most moderate areas of the culinary business. A wide variety of foods that are packed in such a way are sold at this location. The snack areas also attract visitors because of their strategic position and proximity to citizen settlements. Thus, researchers are interested in doing research on factors related to the use of styrofoam containers as packing food at food vendors. The aim off this study to determine the factors associated with the use of Styrofoam containers as food packaging at food vendors in the work area of the Puskesmas Taktakan City of Serang in 2020.

2. Method and Equipment

2.1. Study design

This type of research is quantitative. This study used a cross sectional approach. the dependent variable is the styrofoam container and the independent variable consists of knowledge, attitudes, and availability of the container. The study is done to identify factors associated with the purpose of styrofoam containers as packing foods, with food items that are food sellers. The study is carried out during April 2020 in the region of the labor center Taktakan. The study is done on a preliminary study showing that the number of styrofoam merchants using styrofoam in the workplace of the research facility is still high

2.2. Sample

The population of this study was that of all the hawkers or food vendors in the workplace of the Taktakan center, who sold by wagon, who sold at home, and or had stalled. As for the variety of foods/snacks that are sold are foods that contain relatively high fat and that contain acid, such as rujak, chicken porridge, geprek chicken, meatballs, chicken noodles, blended, banana kedges, cilung, rice uduk, Fried rice, cilok, chili cheese and hot shells. The population were 178 food seller and the number of samples in this study were 95 food sellers. sampling technique by quota sampling.

2.3. Data collection procedure

Data collection is done by filling out a questionnaire

2.4. Instrument

The instrument in this study was a questionnaire sheet.

2.5. Data Analysis

Data analysis using analysis univariate and bivariate with chi-square statistical test.

3. Result

TABLE 1: Univariate data frequency distribution.

Variable	Frequency	Percentase (%)
Receptacle Styrofoam		
Deficient	38	40
Good	57	60
Total	95	100
Knowledge		
Deficient	44	46,3
Good	51	53,7
Total	95	100
Attitude		
Negative	70	73,7
Positive	25	26,3
Total	95	100
Receptacle Availability		
Affordable	65	68,4
Unaffordable	30	31,6
Total	95	100

The frequency distribution on table 1 explains that, as many as 40% of those polled using styrofoam containers poorly, 46.3% had poor knowledge and 73.7% had a negative attitude, 68.4% said that easy containers were available.

Analysis of the use of styrofoam containers in table 2 shows that there is no meaningful connection between the attitude and the use of the styrofoam containers, while there is a rich relation between knowledge and the use of the styrofoam containers.

TABLE 2: Analysis of using styrofoam containers as food packaging.

Knowledge	Receptacle Usage Styrofoam				Total		P Value	OR
	Deficient		Good		N	%		
	N	%	N	%				
Deficient	26	59,1	18	40,9	44	100	0,001	4,694
Good	12	23,5	39	76,5	51	100		
Total	38	40	57	60	95	100		
Attitude								
Negative	31	44,3	39	55,7	70	100	0,234	
Positive	7	28	18	72	25	100		
Total	38	40	57	60	95	100		
Receptacle Availability								
Affordable	31	47,7	34	52,3	65	100	0,043	2,996
Unaffordable	7	23,3	23	76,7	30	100		
Total	38	40	57	60	95	100		

4. Discussion

The user of a containers that the respondents do in using styrofoam as food packing. Observing and interviews with food sellers direct the preparation of newly cooked foods into styrofoam and quickly closing them, as well as the sellers avoid packing styrofoam packages with leaves or rice paper so that the foods in direct contact with styrofoam are left with no choice of packing packing except styrofoam to prepare the food [6].

Based on the table 1, 60 % of those who make good use of styrofoam containers. Based on table 2’s analysis, the 44 knowledgeable respondents use less than 26 (59.1%) as poor styrofoam containers. As for the 51 well-informed ones, 12 (23.5%) use poor styrofoam containers. Based on analysis there is relationship between knowledge with the use of Styrofoam as food packaging. This suggests that knowledge has to do with the use of styrofoam containers as packing food at food vendors. The study coincides with Abidin 2016’s study of the relationship of knowledge and a way-chewing attitude toward the use of styrofoam as food containers in the Makasar port. With his research suggesting there is a link to respondents’ knowledge with the use of styrofoam as food containers.

Based on interviews with food sellers, most of those who have such good knowledge as they know about what styrofoam is, the health impact it brings, and how to reduce styrofoam’s dangers as food package, but the food sellers are not aware of the conditions

and the types of foods that can be packaged or not packaged by the use of styrofoam. Knowledge of packaging food that can be sold by food vendors Snacks are obtained from looking at yourself while watching tv, there is also due to view other sellers use styrofoam packaging. Some people don't know about the ban on the use of Styrofoam as food packaging. The using of Styrofoam as food packaging is very dangerous. The use of styrofoam in hot food can cause the transfer of chemicals in styrofoam to the food. People should not store hot food directly into the styrofoam packaging because it will melt and react chemically when exposed to heat or acid. Furthermore, the melt will move to the food placed in it, and poison it [7], [8].

Based on the table 1, 73.7% of respondents are negative attitude. Based on analysis, 70 respondents with negative attitudes, 31 (44.3%) use styrofoam containers poorly. In turn, of the 25 respondents with positive attitudes, 7 (28%) use styrofoam containers poorly. Based on the results of the test chi-square shows p value = 0.234 (> 0.05). This is evidence of not having to do with the use of styrofoam containers as packing food in food vendors in the labor of the 2020 Taktakan Kota Serang.

This study coincides with the study (Abidin 2016) as his research suggests that there is no way for the respondents to use styrofoam as food containers, showing significant figures p value 0.118. The interviews of many traders who have a positive attitude do not affect the use of styrofoam containers. Sellers feel that styrofoam is very practical, popular, available and has a high price so that merchants can make huge profits, which makes them still use the styrofoam.

Attitude is a reaction or response of someone who is still closed to something stimulus or object. The manifestation of attitude cannot be seen immediately, but only can be interpreted in advance of closed behavior. Real attitude shows the connotation of the appropriateness of the reaction to a particular stimulus [9], [10].

Attitudes are influenced by several factors such as the experience experienced will influence, socio-economic, namely a social life with indicators of education, employment and income as benchmarks, the culture of residence has a major influence on the formation of attitudes, other people who are considered important such as parents, the mass media, namely as a source of the latest information, emotional factors, namely distribution statements and self-control [11].

The public's attitude towards the use of Styrofoam tends to be towards a negative attitude because there are still many who use Styrofoam as a food container and have practical reasons and food safety when using Styrofoam [12].

Tables 1. show that of the 65 respondents who said that easy containers are available, 31 (47.7%) use fewer styrofoam containers. Next of 30 respondents who make the availability of containers are not easy, 7 (40,% fewere less styrofoam containers. Based on the test a chi-square showed p value = 0.043 (< 0.05). This proves that the availability of containers has to do with the use of styrofoam containers as containers for food containers. This results in a study conducted by Suhaila 2019, where state that the availability of containers has to do with the use of styrofoam containers as food containers in the feed [6].

Based on the interviews, sellers have found that styrofoam is readily available and sells, and more economical and practical in its use, it is also the most popular container or packaging in food merchants, so most traders use styrofoam containers.

The reason the seller uses Styrofoam is easy to get and Styrofoam is sold everywhere. Because it causes an increase dependence of the seller using it. Even though more and more use of styrofoam is very dangerous for health also the environment because it is not easy destroyed. Some sellers have knowing but not applying to when packing food [7].

5. Conclusion

Research suggests that the factors associated with the use of styrofoam containers as food containers in food sellers are knowledge and the availability of containers. Adding other research variables about the factors that related to the use of Styrofoam containers as food packaging such as Types of Food, Facilities, Age, Education, Economy, Environment, Old Selling in Years. Give education to food vendors regarding the use of packaging, create packaging that is practical and safe to use.

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7. Conflict of Interest

In this study, there is no conflict of interest.

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