Conference Paper

Knowledge, Attitude, and Behavior of Housewives in Using Styrofoam Packaging in West Jakarta

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Abstract

Polystyrene foam or Styrofoam are widely selected as food packaging because they are able to maintain temperature of food, comfortably held, retain the freshness and integrity of the packaged, light, and inert food to the acidity of the food. However, the Styrofoam packaging has the disadvantages of transferring monomers and plastic materials into foods that are affected by temperature, contact time, and type of food. Foods and beverages containing alcohol or acids can also speed up the transfer of chemicals in the use of food packaging. Laboratory test results of the Indonesia National Agency of Drug and Food Control (BP-POM RI) showed that 17 types of Styrofoam food containers are safe to use or qualify, but the logo in the Styrofoam product is very important. In addition, temperature, type of food, and length of contact with the container also need to be considered because it can produce a styrene monomer residue. If the styrene monomer residue is > 5000 mg/l, it can cause cancer. This study aims to know the knowledge, attitude, and behavior of housewives in the use of Styrofoam. The design is cross-sectional with purposive sampling. The study was conducted during January–March with a sample of 100 housewives in Guji Village, Kebun Jeruk, West Jakarta. The results showed that there was a significant correlation between attitude (p = 0.044) and media exposure (p = 0.041) with the behavior using Styrofoam packaging. Therefore, it is necessary to socialize and educate the housewives about food packaging security, especially the proper way of using Styrofoam.

Keywords: Styrofoam, food packaging, styrene, food safety

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1. Introduction

Styrofoam or foam plastic is widely used for fast food wrappers. The type of plastic is processed using a mixture of Styrofoam and polystyrene, white and rigid materials

that were originally used for the safety of non-food items such as electronic goods to withstand minor collisions. It's easy, practical, inexpensive, leak-proof, resistant to hot and cold temperatures makes it a function of food packaging and the effects on human health and the environment are neglected. According Sulchan and Nur [1], Styrofoam is chosen because it is able to maintain food that is hot or cold, comfortably held, can maintain the freshness and integrity of food that is packed, light and inert to the acidity of food.

The results of laboratory tests of The National Agency of Drug and Food Control (NA-DFC) [2] found that 17 types of food containers made of Styrofoam are safe to use or meet the requirements, but people should still consider the use of the container by considering the temperature, type of food, and long exposed. Styrofoam has plastic codes 6 and PS which means that these plastic elements can mix with hot foods so they should be avoided because they are harmful to the brain, disrupting the estrogen hormones in women that result in reproductive, growth, and nervous system problems. In addition, this material is also difficult to recycle.

According to the Japan Food Safety Management Association (2011) in Widyaningsih [3], when Styrofoam is used for high-temperature and fatty food containers, monomer chemicals migrate into food. The accumulation of such material in large quantities can be harmful to health. The basic ingredients of Styrofoam are styrene also butadiene as a booster, or DOP or BHT as its plasticizer is mutagenic (able to alter the genes) and potential carcinogens (stimulates the formation of cancer cells).

Practical consumer behavior is suspected to be one of the causes of significantly increased use of Styrofoam. According Ruwani, Retnaningsih, and Simanjuntak [4], the form of consumer attitudes toward a product greatly affect the buying behavior. Before purchasing the product, the consumer will evaluate from experience or knowledge so that low consumer knowledge and minimal information source can lead to wrong behavior in product selection and its long term manifestation to health problem. Based on the description, the authors are interested to see the relationship knowledge, attitude, and behavior of housewives in the use of Styrofoam containers.

2. Methods

This research use cross sectional design and conducted in January–March 2017 with 100 respondents housewife in Guji Village, West Jakarta. Selection of respondents using purposive sampling with the consideration that housewives have a close relationship

as a household manager so that mothers will be involved in the selection of use of food containers in this case Styrofoam [5].

In the preliminary study conducted at Guji Village it was found that the average housewife buys food using Styrofoam (code 6 and PS). In addition, there are still many housewives who do not care about the effects of using Styrofoam for family health.

The variables studied include respondent characteristics (age, education, income, and occupation), knowledge, attitude, media exposure, and behavior in using Styrofoam. The questionnaires used in the research have been tested for reliability with Cronbach Alpha > 0, 6, that is, 0.780 (knowledge), 0.843 (attitude), 0.851 (media exposure), and 0.781 (behavior).

3. Results

3.1. General characteristics of respondents

Respondent's characteristic includes age, education, income, and occupation. As shown in Table 1, it is known that more than half of respondents (57%) fall into the category of early adulthood (18–40 years old), almost (90%) have a formal education less than 12 years, more than half (68%) work with distribution of work that is laundry, online shop, household assistant, and babysitter. As many as 65 percent of respondents have low income (< Rp 3,100,000/Regional Minimum Wage).

3.2. Relationship between knowledge, attitudes, and behavior in using Styrofoam

The distribution of knowledge, attitudes, and behavior of respondents in using Styrofoam is presented in Table 2. Based on the table, more than half of respondents are well informed (62%), attitude toward the use of Styrofoam is still low (52%) which means that there are still many respondents who think that using Styrofoam will not cause harmful effects to health. In addition, more than half of respondents (51%) had less behavior in using Styrofoam. This means that the use of Styrofoam materials as food wrappers is still high.

Media exposure is also a researched aspect to see respondents' sources of information about using Styrofoam. As shown in Table 3 it is known that as many as 83 percent of respondents are exposed to media, the highest source of information (64.4%) of television, the rest are spread from friends, magazines, radio, others. In the table was

Table 1: General characteristics of respondents.

Characteristics	n	%
Usia (Tahun)		
Early adulthood (18–40)	57	57.0
Middle adulthood (41–60)	43	43.0
Total	100	100.0
Education		
Low (< 12th)	90	90.0
High (> 12th)	10	10.0
Total	100	100.0
Occupation		
Doesn't work	32	32.0
Work	68	68.0
Total	100	100.0
Income		
Low (< Rp 3100000)	35	35.0
High (> 3100000)	65	65.0
Total	100	100.0

also informed that as many as 56.3 percent of respondents admitted that the use of Styrofoam as a food container is selected based on his own desires.

Table 2: Knowledge, attitudes, and behavior in using Styrofoam.

Variable	n	%
Knowledge		
Less	38	38.0
Good	62	62.0
Total	100	100.0
Attitudes		
Less	52	52.0
Good	48	48.0
Total	100	100.0
Behavior		
Less	51	51.0
Good	49	49.0
Total	100	100.0

Table 3: Distribution of respondents based on media exposure and information sources.

Variable	n	%
Media Exposure		
Not exposed	17	17.0
Exposed	83	83.0
Total	100	100.0
Information Sources		
Television	70	65.4
Friend	23	21.5
Magazine	8	7.5
Radio	4	3.7
Others	2	1.9
Sources of influence		
By them self	63	51.0
Neighbor	15	49.0
Media (print and electronic	12	10.7
Family	11	9.8
Others	11	9.8

The relationship between knowledge, attitudes, and media exposure on the behavior of Styrofoam usage is shown in Table 4. The table shows that more than half of respondents with less knowledge have less behavior toward the use of Styrofoam (60.5%). However, in this study it is not proven that the knowledge of the respondents against the dangers of Styrofoam is related to the use of Styrofoam ($p < 0.05 = 0.199$). In addition, it is also known that many respondents who have good attitude toward the use of Styrofoam but its behavior is less (62.5%). That is, respondents agree that the use of Styrofoam may have an impact on health but not change the behavior of respondents in the use of Styrofoam ($p < 0.05 = 0.044$). When examined from the media exposure, it is known that many respondents are exposed to the media but the behavior of using Styrofoam is still less (76.4%). This may mean that many respondents were informed of the effect of using Styrofoam for the health of various media but not related to the use of Styrofoam ($p < 0.05 = 0.041$).

Table 4: Relationship between knowledge, attitudes, and behavior in using Styrofoam.

Variable	Behavior				Total		p-value
	Less		Good				
	n	%	n	%	n	%	
Knowledge							
Less	23	60,5	15	39,4	38	**38,0**	0,199
Good	28	45,1	34	54,8	62	**62,0**	
Attitude							
Less	21	40,3	31	59,6	52	**53,0**	0,044
Good	30	62,5	18	37,5	48	**48,0**	
Media Exposure							
Not exposed	13	76,4	4	23,5	17	**17,0**	0,041
Exposed	38	45,7	45	54,2	83	**83,0**	

4. Discussion

In this study it is known that the use behavior of Styrofoam container is related to attitude and exposure of media, while knowledge is not related. When examined from formal education, almost all respondents have a long education < 12 years. However, almost all also have a good knowledge of the dangers of using Styrofoam. Knowledge of the use of Styrofoam in question includes the use of temperature, the effect of health use, the type of food that may or may not be packaged, the length of food contact with the container, and so forth. Good knowledge is supposedly obtained not from formal education but through exposure of information through print media and electronic media. However, this good knowledge does not reflect good behavior either. More than half of respondents still prefer to use Styrofoam as a food packet allegedly for many reasons, among other things they know exactly how to use the right Styrofoam, a shift in lifestyle that is more concerned with practicality so that lack of awareness of the importance of health, and packaging is the gift of the seller.

In the research of Setyawati and Mulasari [6] on knowledge of housewife behavior in plastic waste management, it is found that 39.2 percent of respondents have good behavior which can indicate that housewife try to apply their knowledge in daily behavior. However, 60.8 percent of housewives have a lack of awareness in themselves to behave healthily. Awareness of the selection of containers is a factor driving the realization of good behavior in the use of Styrofoam containers, Without awareness then knowledge does not encourage the use of Styrofoam containers properly.

Another research on the action of food vendors on the use of plastic and Styrofoam revealed that 61.7 percent of food sellers know and agree that plastic and Styrofoam are not well used as food wrappers, but 57.4 percent of sellers still use Styrofoam to wrap hot food, the remaining 53.2 percent use plastic. The reason for the use of plastic and Styrofoam is 38.3 percent states quite practical use, 31.9 percent said the price is cheap, and 21.3 percent states easily obtained. Although it does not close the possibility of a safe and practical food packaging, but its availability in the market is very limited and more expensive. This is related to the production costs that must be incurred food vendors to wrap food [5]. Based on the research it can be seen that the behavior of respondents belongs to the practices that occur by mechanism, where they use Styrofoam automatically because of the gift from the seller and have not replaced it with other packaging.

Attitudes and Media Exposure have a significant role in behavior change. A good respondent's attitude does not necessarily reflect the behavior of respondents. According to Green Theory, predisposing and enabling factors greatly affect the health of individuals. Predisposing factors include knowledge, attitudes, traditions, beliefs, and current culture that is fast-paced and instant and supported by technological developments such as social media and information. While the enabling factor includes the availability of facilities and infrastructure [7]. Based on the theory, the behavior of respondents will still be influenced by cultural conditions and availability at that time which is also supported by experience. Respondents allegedly had prior experience of using Styrofoam to be safe for health resulting in repetitive behavior.

5. Conclusion

Behavior of Styrofoam usage is greatly influenced by the attitude and exposure of media/information sources therefore it is necessary to educate about the proper use of Styrofoam and its danger to health, both for seller and consumer like housewife. It is best to thoroughly socialize the media on plastic codes and their use so that consumers can choose the correct use of food containers/packaging.

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