Behavior of Using Plastic Containers as Food and Beverage Packaging in the Working Area of Kampung Baru Health Center Medan Maimun

Emma DN Simanjuntak[1], Mindo Tua[2],Frida L Tarigan[2]
Program Studi Magister Ilmu Kesehatan Masyarakat
Direktorat Pascasarjana
Email :

Abstract

Now a days Plastic Containers are increasingly using as food and beverage packaging by the people. Food and drinks we consume are almost always connected to plastic, from being sold in markets or supermarkets, we bring it home, until we process and store. In the process there is a transferring of chemicals from plastic packaging to foods and beverages that are at risk for health problems such as resulting in an increased risk of heart disease, cancer, brain disorders. Basically, there is no one type of plastic that is really safe to use. We must be careful while choosing and using plastic packaging that we use everyday. Qualitative research with phenomenological approach about the behavior of using plastic containers as food and baverage packaging with 7 respondents, namely 3 working women, 4 health workers. From the results of the research through in-depth interviews all respondents did not know about the numeric code and BPA Free on the packaging Plastic. All respondents chose plastic containers only because of the price and brand. Likewise, reactions in using plastic containers as food and beverage packaging, most of respondents immediately put food and hot drinks into plastic containers. Needed by the government to provide information regarding the use of plastic containers that are safe to use and announcement of using plastic containers can affect to the health and to the environment.

Keywords : Behavior, Usage, Container, Plastic

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Introduction

Chemicals from plastics that are often associated with the risk of health problems are Bisphenol A (BPA) and Phthalates. Bisphenol is a material that has long been used to harden plastic, such as drinking bottles and boxes where food can be re used. This material is also commonly found in cans of formula milk to prevent rust, baby milk bottles and some toddler equipment. BPA is thought to have an impact on the increased risk of heart, cancer, brain disorders. But the number of plastic containers on the market makes it difficult for us to distinguish which ones are safe (http://dinkes.inhukab.go.id/).

Basically, there is not one type of plastic that is completely safe for packaging food and beverages. Some types of plastic that are relatively safe to use as food packaging are Polypropylene (PP), High Density Polyethylene (HDPE), Low Density Polyethylene (LDPE), and PolyenthyleneTerephthalate (PET). Packaging security can be identified from the logo or writing that is printed, for example, the writing is 'safe for food' or food safe / for food use / food grade. Logo or writing or plastic code is usually printed on plastic objects in question. plastic packaging that does not put a logo or description on a plastic packaging, therefore, as a consumer must pay more attention to the plastic packaging in its use. (Cooper, Kendig and Belcher, 2011) conducted research on animals and gave BPA doses to these animals with doses in the human body. Animals that were injected with BPA 78 showed negative effects on reproductive function which resulted in a decrease in the frequency and impact of casino genesis.

Six patients were recorded at the Kampung Baru Health Center in Medan Maimun Sub-District, Medan City in January 2017 who visited 3 patients with a clear diagnosis of lipomatus neoplasm, 1 patient with carcinoma in situ of rectum, 1 patient with carcinoma, 1 patient with a diagnosis of benign lipomatous in situ of breast. (Kampung Baru BPJS Puskemas Data Center, 2017).

From the results of a preliminary survey conducted at the first 3 informants at the Kampung Baru Health Center, at that time a health worker wanted to use a plastic container in the form of cups, then the officers used hot water in the plastic cup to make sweet tea. After that I tried to look at the code on the plastic cup and it turned out to be coded 2 in the middle of the triangle type HDPE, where based on the reference container with code 2 HDPE it is recommended only for single use, because the release of chemical compounds continues to increase if repeated use.

The second source I conducted an interview with a housewife who at that time used a plastic container with the X brand and after that I saw the plastic container code of the mother under coded 5 in the triangle and it turned out that the housewife did not know the meaning of code 5 in the triangle, informant third, a mother who has a 2-year-old child who gives hot noodles placed in a steroform which is covered with plastic paper which is only on the bottom of the steroform, and does not have a food grade food code or spoon and fork. There has never been any socialization about the use of

plastic containers to make researchers interested in taking the title Behavior of the use of plastic food and beverage packaging containers.

Materials

Food containers are materials used to accommodate and or wrap food and beverages that are in direct contact with food or not. The main ingredients in the manufacture of polycarbonate plastics are compounds 2,2 - bislastic. "(BPOM, 2009)

Food containers are used to accommodate and / or wrap food both directly and indirectly in contact with food and drink foodstuffs, besides that food packaging or food containers also have various other functions including to keep food clean and prevent contamination of microorganisms; guard against physical damage, protect the product from chemical damage (such as moisture / moisture), provide information about food products and instructions for good storage methods (Foodtech. Binus, ac. Id, 2014).

Basically, the main function of the packaging is to protect the product from damage while undergoing the process of transportation, storage, and product sales (Lahimer Meriem, Ayed Naceur, Horriche Jalel, 2013). In addition, packaging also functions as a tool that can drive sales, because packaging is directly dealing with consumers, so that packaging can influence consumers to provide a positive response (Wirya, 1999).

2.1. Packaging Choices Food

while to select of plastic food packaging containers we must be able to choose precisely because we know many factors of risk that can occur in the use of plastic packaging.

Below, what needs to be considered is the selection of food packaging is:

a. Types of food chemicals and their suitability in terms of chemical form, biochemistry, microbiology where the possibility of a change occurs and the speed of reaction to the packaging material affects its temperature and time.

b. Properties of packaging chemicals, their adjustments must be carefully assessed. Whether these chemicals are easily migrated, and evaluation of the effect of temperature and contact time on the composition contained in the packaging.

C. Influence on environmental factors. Considering the migration of toxic materials is strongly influenced by temperature, duration of contact and types of toxic compounds in the packaging, environmental factors must be considered. (PerkaBpom, 2014)

The using of plastic packaging for food has both positive and negative aspects. Negative aspects of the use of this packaging need to be considered, the use of plastic packaging for food / beverages with high temperatures will cause the migration of plastic base monomers mixed with food or drink so that we unconsciously consume these migratory substances (Sulchan and Nur-W, 2007a.

2.2. Plastic Packaging

According to the RI Minister of Health Regulation No. 329 / Menkes / Per / XII / 76 concerning the Production and Distribution of Food Containers are items used to accommodate or wrap food that is directly related to the contents. Packaging is an item used to wrap food that is not directly related to the contents.

Food containers must be able to protect and maintain the quality of their contents (PerkaBpom, 2014)

Plastic Code

(Polyenthylene Terephthalate)

- Can only be used one time, not to be refilled especially using hot water, because it can remove carcinogenic substances that can trigger cancer (Plastics | SA, 1988). Like Bottles of mineral water, drink bottles, juice bottles , bottles of cooking oil, ketchup bottles, chili bottles. (PerkaBpom, 2014).

High density polyethylene)

- Recommended only for once (Plastics | SA, 1988). When pressed do not return as the original shape. For example cosmetic bottles, medicine bottles, drink bottles, gallons of water, etc. (PerkaBpom, 2014). .

Polyvinyl chloride

- Used for paralon pipes or building construction, it is prohibited to use for food and drinks. This reaction between PVC and food packed with plastic has the potential to be dangerous for the kidneys, liver and weight (PerkaBpom, 2014)..

Low desity poly ethilene

- Used in the manufacture of plastic lids, plastic bags / bags, bottles of pasta, honey and other plastics. Can be used repeatedly (PerkaBpom, 2014)

Polypropylene

- Is the best material used for food or drinks, can be used repeatedly and is safe for drinks / food in hot conditions. bottle cap, plastic toy cup, drinking bottle and most importantly a drinking bottle for baby's milk (PerkaBpom, 2014).

Poly Styrene

- This material is very dangerous when used for food, especially when it's hot. For example: Styrofoam, a one-time drinking place like a spoon, fork, glass, etc. (PerkaBpom, 2014) - Made from resins that do not belong to the other six groups, or are made of more than one type of resin and are used in multi-layer combinations (Plastics | SA, 1988).

- - Made from resins that do not belong to the other six groups, or are made of more than one type of resin and are used in multi-layer combinations (Plastics | SA, 1988). Other examples of code seven are Computer cases, iPods, water gallons, plastic glasses, nylon threads,

Based on the results of the study (Setyowati, Wahyu and Widodo, 2017) said that LDPE type plastic can migrate at 90 ° C. The use of packaging for hot food conditions results in chemical bonds found in the food being broken off so that it is necessary to modify the use of the polymer. Through testing the physical, chemical, and morphological properties it is known that the migration process occurs because of the contact between the components of the polymer material and food, which causes food quality to decrease.

. 2.4. BPA Free

Free Plastik packaging as food and beverage packaging is the main source of BPA exposure to the general public. As a developing country with a continuously increasing level of plastic usage, people must be exposed to this compound. In addition to packaging food from the factory, the use of plastic for days in the processing and as a food container also played a role in BPA exposure. For example, nowadays cheap imported plastic is rife in the form of kitchen utensils such as cookies, spoons, plates, cups, pans, teapots, and others. The quality of the products that are still in doubt the chemicals used.

BPA is commonly used to harden plastic, including drinking bottles and boxes where food can be reused. Also generally found in canned formula milk to prevent rust, baby milk bottles and some toddler equipment. BPA is thought to have an impact on the increased risk of heart, cancer, brain disorders. But plastic BPA (Bisphenol - A) is used to manufacture polycarbonate type plastics that have also been identified as containers on the market make it difficult for us to differentiate which ones are safe. (http://dinkes.inhukab.go.id/).

Types of Polymers (Regulation of the Minister of Health of the Republic of Indonesia No. 329 / Menkes / Per / XII / 76 concerning Production and Food Distribution)

Types of Polymers (Chemicals in Plastics)			
No	Plastic Polymer	Toxic Type	Effects on Health
1.	Polyvinyl Cloride	Polyvinyl Cloride Hydrogen Cloride (HCL), Plastizicer (esteral Acid Ester, Dibutyl Phthalates, dioctive Phthalates)	Cancer, gene mutations, hearing loss, visual impairment, liver dysfunction, bronchitis and ulcers. skin5.
2.	Polyetilen	Aliphatic Aldehyde Polyethylene (LDPE), Cancer Unsaturated	Cancer
3.	Phthalates	Phthalic acid esters	Impaired growth and reproduction, asthma.

4.	Polyester	Ester	Causes irritation of eyes, respiratory tract and reddish
5.	Polyoxymethylene	Fomaldehyde (Formalin)	Bronchhial irritation, diarrhea, vomiting, nervous system depression, circulatory disorders,

Methods

This type of research is qualitative, and uses a phenomenological approach. The Respondent in this Research were 3 person employ women, 4 person women health workers. To find out the behavior of using plastic containers as food and beverage packaging in Working Area of Kampung Baru Public Health Center, Medan Maimun District, Medan City in 2018. The data collection was carried out by in-depth interviews, Observation, Documentation. Then the data were analyzed through data transcripts, Data Reduction, Triagulation, Data Presentation, and Deep Conclusions4

Results

Table 1 Characteristics of Respondents in the Kampung Baru Health Center Working Area

No Respondent	Graduate	salary	Job
1	Junior High School	Rp 100 000	employ
2	Junior High School	Rp 900.000	employ
3	Bachelor	Rp. 7.000.000	Health Worker
4	High School	Rp. 1.500.000	employ
5	Bachelor	Rp. 5.000.000	Health Worker Health
6	Diploma	Rp. 6.000.000	worker
7	Bachelor	Rp. 7.000.000	Heath Worker

The results of data analysis about the statements of respondents compiled in the form of matrix as follows:

Respondent	Opinion
1	**2**
Respondent 1	Only heard from the people, neighbors about plastic containers, do not know about the numeric code and BPA free in plastic containers and never pay attention to it
Respondent 2	The plastic container is as clean as the plastic container is safe . Never heard of plastic container information and never pay attention to the numeric code and BPA Free, if the safe container is not black, the simple one is

	lightweight, not easily broken
Irespondent 3	Ever received information from supermarkets and mole, read guidebook. The code never knew like number 4 could not refill, BPA free never knew. That is safe as lion star code 5 is safe to use if a safe battery is always used
Respondent 4	Know from tupperwere products, internet, also friends. The numbers are not known but there are glasses and cutlery means safe for food, BPA free codes are safe for food. If it is free, it means that it is free of ingredients that do not absorb food or are contaminated.
Respondent 5	Never got information, never knew about the numeric code but behind the packaging did not understand the meaning. BPA Free never pays attention and knows. Plastic containers from clean and good quality plastic and the base again is safe to use.
Respondent 6	Have heard from friends about plastic containers, number codes in packaging and BPA Free do not know. Plastic containers are the safest, said ingredients tupperwere.
Respondent 7	Never got information, code number and BPA free in plastic container packaging do not know and have never heard. The safest plastic container is said to be tupperwere

Based on table 5.2 it can be seen that the four informants stated that they had received information about plastic food and beverage containers, even though the information obtained was still from friends and supermarkets and moles. The same thing was stated about the numeric code and BPA free in plastic containers, that the informants were mostly never heard of and didn't know what the numeric code and BPA free meant in the food container. And the information also states that the packaging that is safe to use is clean and branded tupperwere.

Discussion

Based on the results of research conducted at Kampung Baru Public Health Center, Medan Maimun District, Medan, 7 informants stated that informants' knowledge about the use of plastic containers as food and beverage packaging was still lacking. This was seen by several informants who said they had received information, but after interviewing 7 Respondents, all informants did not know about the plastic code and BPA Free.

Based on the results of the interviews, it appears that the information obtained by informants is still lacking, so that the informant's knowledge about the numeric code code that is under the food and beverage containers all informants do not know about the numeric codes in food and beverage plastic packaging containers. This was also revealed by all informants who said they never knew about the numeric code code in a plastic container. The following is an interview quote revealed by four respondents:

> *Code numbers they don't know, just know that there is a picture of a glass or fork, for example, a food picture or that it's safe for food. If there is a triangle, letters have seen, but don't remember what. This is a scribbled mark or is it really a lot of the mark? Well, it's interesting. (The respondent looked down at the plastic container)*

From the results of the interview it was stated that the informant did not know about the code code behind the plastic container packaging, this proves that the information they have is still very lacking. This is consistent with the results of the study (Ilmiawati, reza, et, 2017) who conducted a response analysis pre-intervention showed that most participants did not know the correct way to use plastic as food and beverage packaging and did not know the plastic clarification. However, after the intervention analysis showed a change in the response of participants (Government et al., 1999) stated the logo with number 5 in the middle of a triangle under a plastic container and the writing of this type of PP is the best plastic material, especially for food and beverage such as food storage , bottle cap, plastic toy cup, drinking bottle and most importantly a drinking bottle for baby milk.

Then about the plastic packaging that reads BPA Free, six Respondents said they never knew about BPA Free. Plastics as food and beverage packaging are the main source of Bisphenol A exposure to the general public. BPA is usually used to harden plastic, such as beverage bottles and food boxes that can be reused. BPA is thought to cause an increased risk of heart, cancer, brain disorders.

Wina hatrini Darwin, Hassanuddin University said in his research, one of the chemicals found in plastics that could present a risk of cancer is the chemical Bisph1enol - A or BPA. Biphenol is one of the many chemical compounds created by humans and has inhibitory clarification. endocrine.

The above is in line with (Tanty, Bekti and Rahayu, 2013) education relations and people's behavior in using plastic products related to the behavior of using coded products and there is a difference in public knowledge before and after participating in the plastic code socialization.

According to (PerkaBpom, 2014) that needs to be considered in the selection of safe food packaging that is non-toxic and food-drink packaging material (BPA Free), able to maintain the shape, taste, cleanliness and nutrition of food ingredients, toxin packaging compounds should not migrate into packaged food. The shape of the size and type of packaging provides effectiveness and packaging material does not pollute the environment.

Conclusions

TheRespondents knowledge of plastic containersusing as food and beverage packaging, all respondents did not know about the plastic packaging container code and did not know about Bisphenol A Free in the plastic container packaging. Informant education has no influence on Respondents knowledge about the use of plastic containers as food and beverage packaging.

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