The government policy relating to sugar-sweetened beverages in Indonesia

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Abstract

Introduction

As a developing country, Indonesia is not only facing under nutrition but also overweight. Obesity is real and growing threat to Indonesian population. According to national basic health research data in 2007, the prevalence of adult obesity was 10.3%. This figure increased to 15.4% within 6 years in 2013. This anomaly occurred not only in adults but indicated also in children as well as adolescents (1). Previous studies clearly showed that a high calorie diet and sedentary activity increase the risk of obesity (2). However, some experts hypothesized that the cause of obesity and metabolic syndrome, specifically, can be due to excessive of sugar consumption, especially of sugar-sweetened beverages (SSB) (3). Restrictions on sugary drinks are one of the best ways to fight against obesity trend which increased year by year. There have been many evidences that lowering the consumption of SSB minimizes opportunity of health problems. This probably could be done through the formulation of appropriate policy goal (4). The government, which has a goal to create better public health status, should act appropriately and effectively, provides resource and sustainability to achieve the goals. Public policy...
analysis is necessary to achieve successful implementation of the policy. The policy regulation, guideline, and law that support public health will have a significant effect to the health status (5). Thus, if taken on the dimensions of the sugar effects on weight gain, the policies relating to restrictions of sugar use and consumption of SSB will have profound impact on obesity prevention in the community.

In fact, the regulations of consumption and the use of sugar in foods are not easy to be made because the efforts to reduce the supply and demand of sugar influencing by political issues. It was real experienced by several countries such as America and Mexico (6). In Indonesia, regulation regarding added sugar in a product has not been set out clearly. The existing regulations are still at the level of food safety domain which protects consumer from food borne disease due to contamination of biological, chemical, and other objects. In fact, the purpose of the policy is to overcome unsolved social problem that has been relevant politically to the public (7). Therefore, the Indonesian government should focus on the issue of regulation of added sugars maximum limit in beverage product.

**Aims & Objectives**

1. To identify the policy in Indonesia that regulates the quantity and the use of sugar in a beverage product.
2. To describe sugar content in a sugar-sweetened beverages (SSB) product and its impact on health.

**Material & Methods**

This research was a descriptive study aimed to identify policy relates sugar as well as sugar content from SSB products. Literature search related to policy of sugar use and the tax of sugar sweetened beverages products has been conducted through searching from google.com by entering the keyword "Act of sugary drinks" obtained 5 documents, "The ministerial regulation+sugar-sweetend beverages" (2 documents), and "Regulation of ministry of trade + sugar-sweetend beverages" (1 document). After the analysis, there are two documents from a total 8 documents that were irrelevant because it has been replaced by the latest regulation such as PERMENEKU number 213 / PMK.011 / 2011 and Act number 8 year 1983. Therefore, it was obtained 6 documents that are considered to describe the relevant regulation by government regarding to the tax and the use of sugar in food products in Indonesia.

Data of nutrient content, especially sugar, collected from beverages sold in the minimarket in Makassar city. A total of 91 samples of SSB products were successfully selected from one of the retail brand grown in Makassar (Indomaret). Methods of selecting samples were systematically by selecting five SSB products randomly per day for 20 days. Inclusion criteria of selected beverages are Halal logo, containing calories and have a nutritional label, and certified by BPOM. Similar SSB products selected based on name and manufacturing, different flavors will be eliminated as the samples (total 9 dropped out). Sugar-sweetened beverages refer to all non-alcoholic beverages with added sugars, such as carbonated, coffee, juice, milk, sports drinks, supplement drinks, tea, yogurt, and energy drinks (8, 4). PASW Statistic version 18 (SPSS Inc.) was used for data analysis.

**Results**

Table 1 shows the energy content of SSB per serving of product. Milk contained the greatest amount of energy followed by carbonated drinks (157.9 kcal and 147.5 kcal, respectively). An interesting thing is the sports drink has the lowest energy (65.8 kcal). In average, the amount of sugar per serving of product reaches 22.8g or equal to 86.3g/1000 ml. Table 1 also shows the contribution of sugar to product’s energy. It can be seen that the sugar in sports drinks contribute highest to energy of products (93.33%), then the least was milk (44.98%). Sugar content in milk and yogurt are quite low, so that the milk and yogurt could be stated as the viable products to consume every day without giving excessive sugar intake.

The Indonesian government needs to focus on this issue through provides effective policies and programs. Table 2 presents that no policy regulates sugar needs and its use in processed and ready-to-eat products exist in Indonesia. The literature searching has not found the policy of sugar-sweetened beverage taxation. Although in Finance Ministry Regulation number 132 year 2015 is set on import duties for beverages containing added sugar, but this only applies to imported beverages. Even then there is no limit on how many additions of sugar are allowed and how maximum-contained sugar is recommended. In Health Ministry Regulation number 41 year 2014, it has set the sugar needs of
individuals a day no exceed 50 grams (9). In fact, the content of the sugar alone in carbonated beverages per serving has reached 33.6 grams or 67.2% of the daily requirement. It means that only 32.8% of sugar remaining that could be obtained from other foods. In Government Regulation number 69 year 1999 regarding labeling and advertising of food, it does not require displaying the sugar content of product per serving, while in the Health Minister Regulation number 30 year 2013 obligates to display the content information of sugar, salt and fat and information of health messages of processed and fast food. There are two conflicting rules that can lead to the government becomes less assertive on this issue. Indonesian Government Regulation number 69 year 1999 needs to be revised due to the information about the sugar content is very important to be known by the public.

Discussion

According to WHO, obesity is becoming a global issue in which increased doubled since 1980. It is estimated that in 2014, more than 1.9 billion adults are overweight and 600 million of them are obese. In the last three decades, the level of caloric intake of Americans is very high and largely derived from SSB (10, 11). Similarly, in Australia, obesity has been increased about two-fold within 2 decades. According to the survey in Australia, published in www.rethinksugarydrink.org.au, that fruit juice is the most widely consumed by children and adolescents (37%), followed by soft drinks (25%). All of those contain high sugar that contributes to greater calorie intake. A study proved detrimental effects of the SSB consumption that daily SSB consumption is significantly related to the risk of obesity in children and other chronic diseases in the future (12). Conversely, lowering SSB consumption is associated with weight loss (13).

The main reason why the government needs to concern about the SSB policy is the wide implications for public health. This study indicated the high sugar content of each SSB product sold in retail minimarket in Makassar. In fact, excessive consumption mainly for SSB can lead to obesity disaster and even that may increase the risk of chronic health problems (14). Based on a study, the average calories come from sugary drinks was 400 kcal/day or 25-30% of total daily requirement (15). Many evidences show that SSB have weak satiety properties and compensate restricted diet (failure to adjust the intake at the next meal occasion) when compared to semi-solids or solids food. The changing pattern of SSB consumption was significantly occurred over the population of the world. At the beginning, the first consumption of sugary drinks is limited to drink tea or syrup, but now with the ease of access, the various products can be enjoyed by all people without limitation (8).

Sugar-sweetened beverage such as carbonated or soda are sources of calories but little nutrients content. The adverse impact from frequent SSB consumption is on negative diet quality, weight gain, and health condition. High consumption of SSB may increase the risk of diabetes mellitus (16) which increase the risk of chronic heart diseases event (17). Therefore, reducing daily SSB consumption and promotes healthy lifestyle might help weight loss and indirectly reducing chronic diseases. There should be a comprehensive prevention to address this issue especially in young population. Through the right policies, potentially decrease the popularity and demand for SSB. The government plays pivotal roles for this problem, as shown by Mexico to fight against sugar-sweetened drinks (6). Mexico has successfully lowering the purchase SSB about 6% by increasing tax and the highest reduction in low socioeconomic (18). Indonesia needs to consider this strategy to reduce potential threat of sugar consumption to consumers.

Problems that exist in the community especially health problems can arise independently or as a result of social problems. To deliver a policy, a problem should have been on the political agenda. If it has become a public health problem, the policy implementation should be encouraged to resolve the issue. Obviously, policy analysis should be done to evaluate the effect of the policy. According to Garraud, the criteria of the problem to be included as public are; 1) the constitution requests originating from a particular social group; 2) the existence of a conflict between groups of organized social and political authority; and 3) the development of public debate. Policy relating to SSB need to be due to the problems posed have become public, even had fulfilled the conditions according to Garraud (19, 7). There are several options that could be done for lowering the level of consumption of sugary drinks such tax enforcement, displaying of warning labels, healthy food assistance programs, or healthy breakfast program for children (20). In France, sweetened and high density beverage has become a
serious concern, the government imposed tax £1 per/L of product. The benefits gained enormous, public health revenue as well as money revenues approximately £268 Million (14).

Tax of SSB is considered by many experts and policy-makers as the best strategy for improving the nutritional status, value for health programs, and lowering financial burden of treatment and insurance of diseases related to food (21). Tax policy should be a "filter" for the high-sugar products including the rationing of SSB in Indonesia. Recent studies have shown that the price of the drinks may reduce demand for SSB and decrease risk of obesity (13, 22). The policy holder should have effective policies to reduce consumption of sugar-sweetened drinks which may result the significant number of deaths (23). In 2014, imposed a tax of 1 cent per 100g SSB in California and marked as the beginning of the tax policy in the United States (10).

If the specific rules on the sugar tax can be issued, it is not possible the illnesses associated with the consumption of sugar can be prevented. This is in line with a study in which after implementation of tax policy on sugary drinks then daily SSB consumption were decreased (from 0.56 to 0.47 servings/day). Price of food products influence consumption patterns, including the sweet drinks. Demand of SSB product would be decreasing if the price is raised such through increasing product taxes. Rising price about 10% result declining about 8 to 12.6% of product consumption. On the other hand, in case if producers still produce SSB products despite with the high taxes, the fixed state benefits obtained through tax revenues and could be allocated in the health sector. As performed by the United States in 2008, the Congressional Budget Office suggests that the beverage tax 3 cents per 12-ounce drink alone could produce 50 billion USD in 10 years to help other health financing (24).

In Makassar, retail minimarket was growing extremely. This conditions encourage District Regulation number 15 years 2009 about Restriction of Modern Retail Minimarket. However, the progress is still unclear after 3 years. Minimarket became the main choice of people to buy food and beverages due to the accessibility easily, displaying the price, provide comfortable surroundings, selling various kinds of drinks, and served cold. Availability of minimarket in some places would affect food pattern of the people around the minimarket. The possibility of SSB consumption is also high because of the absences of policy that restrict the opening of retail minimarket which mostly sell SSB. Until 2013, the numbers of Retail Minimarket in Makassar were 151 units.

**Conclusion**

From all policy identified in this study, there were no chapter, verse, or statements that stated restriction of sugar use in sugar-sweetened beverage product. The policy related to Minimarket potentially increase high purchase of SSB. Sugar-sweetened beverages sold in Minimarket have relatively high sugar content. The contribution of sugar to energy of SSB product energy is quite high (75.68%) and this may increase the risk of obesity which lead to non-communicable diseases. Many factors led to increased consumption of SSB, including the high accessibility to get SSB at Minimarket, like occurred in Makassar.

**Recommendation**

In both perspectives, public policy analysis and health content, the regulation of SSB is urgently needed. An advocacy effort is needed to encourage the government to deliver SSB taxation and restrictions of the sugar use in the beverage product in Indonesia. According to the experts and previous studies, there are three possible ways such as 1) issuing a policy to increase tax of sugary drinks or raising the price of SSB product; 2) reducing the advertising of SSB in mass media mainly on television, and/or 3) establishing a policy of SSB-free area or vending machine in public spaces.

**Relevance of the study**

Further research is needed to investigate the velocity of SSB affects the incidence of non-communicable diseases.

**Authors Contribution**

All the authors had made valuable and substantial contributions to study process and drafting the article equally.

**References**


### Tables

#### TABLE 1 CONTRIBUTIONS OF SUGAR PER SERVING PRODUCT

<table>
<thead>
<tr>
<th>Category</th>
<th>Energy per serving (kcal)</th>
<th>Sugar per serving (kcal)</th>
<th>Δ Contribution of sugar to energy (kcal)</th>
<th>% contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbonated (n = 8)</td>
<td>147.5 ± 19.8</td>
<td>134.5 ± 26.53</td>
<td>33.6 ± 6.6</td>
<td>91.51</td>
</tr>
<tr>
<td>Coffee (n = 7)</td>
<td>118.6 ± 28.5</td>
<td>73.71 ± 14.40</td>
<td>18.4 ± 3.6</td>
<td>53.49</td>
</tr>
<tr>
<td>Juice (n = 15)</td>
<td>118.7 ± 25.3</td>
<td>96.80 ± 25.53</td>
<td>24.2 ± 6.4</td>
<td>81.74</td>
</tr>
<tr>
<td>Milk (n = 16)</td>
<td>157.9 ± 43.9</td>
<td>69.15 ± 29.80</td>
<td>17.3 ± 7.5</td>
<td>44.98</td>
</tr>
<tr>
<td>Sport drink (n = 6)</td>
<td>65.8 ± 47.6</td>
<td>64.00 ± 49.38</td>
<td>16.0 ± 12.3</td>
<td>93.33</td>
</tr>
<tr>
<td>Supplement drink (n = 13)</td>
<td>124.6 ± 36.9</td>
<td>105.9 ± 29.92</td>
<td>26.5 ± 7.5</td>
<td>87.55</td>
</tr>
<tr>
<td>Tea (n = 17)</td>
<td>116.5 ± 65.4</td>
<td>96.00 ± 47.31</td>
<td>24.0 ± 11.8</td>
<td>87.52</td>
</tr>
<tr>
<td>Yogurt (n = 4)</td>
<td>140.0 ± 56.0</td>
<td>64.00 ± 29.75</td>
<td>16.0 ± 7.4</td>
<td>45.94</td>
</tr>
<tr>
<td>Energy drinks (n = 5)</td>
<td>108.0 ± 8.4</td>
<td>100.0 ± 12.33</td>
<td>25.0 ± 3.1</td>
<td>92.91</td>
</tr>
<tr>
<td>Total (n = 91)</td>
<td>126.9 ± 47.01</td>
<td>91.19 ± 37.56</td>
<td>22.80 ± 9.39</td>
<td>75.68</td>
</tr>
</tbody>
</table>

#### TABLE 2 POLICY SUGARY PRODUCT AND THE USE OF SUGAR IN INDONESIA

<table>
<thead>
<tr>
<th>No.</th>
<th>Documents</th>
<th>Concerning</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Finance Minister Regulation number 132/PMK.010/ 2015</td>
<td>The third change of Finance Ministry Decree Number 213/PMK.011/2011 on</td>
<td>Appendix: Import duties for beverages containing added sugar is 20%</td>
</tr>
<tr>
<td></td>
<td>Document Reference</td>
<td>Document Title</td>
<td>Description</td>
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</tr>
<tr>
<td>2.</td>
<td>Indonesian Government Regulation number 69 year 1999</td>
<td>Labeling and advertising of food</td>
<td>Article number 32 and 33 about the nutrients content in the product labeling that should be listed: serving size, number of servings per product, energy per serving, macronutrient per serving, and the percentage of RDA.</td>
</tr>
<tr>
<td>3.</td>
<td>Health Minister Regulation number 30 year 2013</td>
<td>Displaying the information of sugar, salt and fat content and health messages in processed and fast food</td>
<td>Displaying information of sugar, salt and fat content and health messages in processed and fast food are intended to reduce the risk of the incidence of non-communicable diseases, especially hypertension, stroke, diabetes, and heart attacks through increased consumer knowledge regarding to intake of sugar, salt, or fat in processed or ready-to-eat food.</td>
</tr>
<tr>
<td>4.</td>
<td>Decree of the Head of National Agency of Drug and Food of Indonesia number HK.00.05.5.1.4547</td>
<td>Terms of use of food additives and artificial sweeteners in food products</td>
<td>Article 2 Paragraph 1&amp;2 stated Artificial sweeteners can be used singly or in combination in a low-calorie food products and food without addition of sugar. Food without addition of sugars namely food that is processed without the addition of sugars (sucrose / fructose) or the processing process which does not cause an increase of blood sugar levels significantly.</td>
</tr>
<tr>
<td>5.</td>
<td>Health Minister Regulation number 41 year 2014</td>
<td>Balanced Nutrition Guidelines</td>
<td>Restrict consumption of sweet, salty, and fatty foods</td>
</tr>
<tr>
<td>6.</td>
<td>Indonesian Government Regulation number 28 year 2004</td>
<td>Safety, quality, and nutritious food</td>
<td>Article 33 stated The Minister which responsible for health, agriculture, fisheries, industry or the Head of the Agency in accordance with field of duties and authority pursue nutritional adequacy, protect the people from malnutrition and fostering the community in improving of nutritional status</td>
</tr>
</tbody>
</table>