

The Urban Adolescents' Perception on Sugar-sweetened Beverages and Food Label: A Photovoice Study

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Abstract: The trend of sugar-sweetened beverage (SSB) consumption in Indonesia has been increased in the past decade from 253 million litres to 780 million litres a year. High sugar diet has been linked to the increased risk of diabetes mellitus via the lack of regulation on hepatic uptake. Adolescents are the most prone to risk of high consumption of SSB because of the affordability, influence of marketing, and influence from peers. The affordability of SSB is also often related to the less awareness to read the food label (nutritional label and halal label) in the package. Therefore, this study aimed to explore perceptions of adolescents in Jakarta, Indonesia about SSB and food label by using *Photovoice* method. The *Photovoice* study involved five adolescents (three males, two females) recruited from Muhammadiyah 11 Jakarta High School, Indonesia to participate in two sessions of Focus Group Discussion (FGD) conducted between May – June 2021. The transcripts from FGDs were analysed using SHOWeD methodology approach sorted by the perception on SSB consumption and food label (nutritional and halal label). Participants reported that peer group influence their decision to purchase SSB. Moreover, price, location, and brand also define the consideration to choose certain products. Participants rarely read the food label as it is considered as time-consuming activity even though they knew that it is important. Halal label also not become a priority on choosing product, mostly because of the brand trust and the safe feeling as they are living in a Muslim majority country.

1 INTRODUCTION

Non-communicable diseases (NCD), including coronary heart disease, cancer, diabetes mellitus, and chronic pulmonary disease, has been contributed to 70% death worldwide (World Health Organization, 2018). Aside from its contribution to the premature death, NCD also related with the economic burden, both in developing and developed countries.

One of the NCD risk factors is obesity, which induced by high consumption of sugar. High sugar diet increases the risk of obesity and type II diabetes (MacDonald, 2016, Savona, 2018). A longitudinal study showed that high sugar-sweetened beverage (SSB) consumption is linked to high waist-to-hip ratio (Hodge et al., 2018). The direct mechanisms explained by the abnormal regulation of hepatic uptake and fructose metabolism which eventually leads to the accumulation of body fat content, dyslipidemia, low insulin sensitivity, and increased

level of uric acid. Increase of body weight and body fat percentage from high consumption of sugar is related to the lack regulation of leptin (Stanhope, 2016).

The trend of SSB consumption in Indonesia increased sharply from 51 million litres in 1996 to 253 million litres in 2014 (Ardiansyah, 2017). The high purchase of SSB is possibly related to affordability of SSB products and the sweet taste which is mostly preferable in all age group, particularly adolescents. In Indonesia, Adolescents (10 – 17 y.o) are age groups that consume SSB in the highest proportion compared to other age groups (Laksmi et al., 2018). The high consumption of SSB among adolescents is more likely related with obesity and becoming concern as it might increase the risk to develop NCD when they become adult.

The awareness to control SSB consumption is in line with the awareness to read food label, which also consists of nutrition and halal label. The awareness to

read food label, is a higher step on the effort to limit or increase certain nutrient consumption based on daily needs. However, the overloaded activity in urban daily routine might limit time and effort to read the details on food label, more specifically, the halal label for Muslim.

There are several strategies to control SSB consumption, for example to control SSB price, Sugar Tax is implemented in several countries and proven that it could effectively control SSB consumption (Phulkerd et al., 2020). Another strategy is on modification of lifestyle by developing functional foods as an alternative to choose healthier products (Sofyaningsih and Arumsari, 2021). School-based health promotion also designed to promote healthy lifestyle and balanced nutrient intake (Arumsari and Putri, 2021, Fitriani et al., 2020).

Different strategies to control SSB consumption, from education to policy implementation, might results in different perception on SSB among adolescents. Built mindset about SSB consumption as the results from different controlling strategies in certain location or country shaped the perception and behavior to consume SSB. Therefore, this study aimed to explore perception of adolescents in Jakarta, Indonesia about SSB and food label (nutrition label and halal label).

2 METHODS

This research used the photovoice method as a qualitative study. Photovoice is a community-based participatory study which allow the participants to identify and represent the community's opinion about certain topic by using photography technique (Catalani and Minkler, 2010). There were three aspects explored in this research which are adolescents' perception about sugar-sweetened beverage (SSB) consumption, food label, and halal label.

Five student representatives consist of three males and two females from Muhammadiyah 11 Jakarta High School, Indonesia. Random sampling was implied in selecting the number of participants. Also, there were gender proportional number consideration in random sampling method. The research inclusion criteria for participants and teacher intervention selected 2nd grade students as suitable participants due to time availability and limited research. The Focus Group Discussion (FGD) was conducted in total two sessions during May – June 2021. Due to COVID-19 restriction, FGD was done online via Zoom platform.

The first FGD was designed with following agendas: (1) explanation of Photovoice study, (2) pre-test, and (3) brainstorming of photo themes. In this FGD session, researchers explained the research questions and discussed with participants about related photo topics that could answer those questions. The participants were assigned to list the type of camera that they would be used to present the photos. The informants were given two weeks to collect three to five photos for each research question individually. The number of photo submitted was considered by previous study (Streng et al., 2004).

The second FGD was conducted two weeks after the first meeting. The agenda was discussion the photos obtained, presentation of nutrition and food label information, and post-test. The discussion of photos was obtained with SHOWeD methodology approach. SHOWeD methodology is a discussion approach used in Photovoice studies that has been validated to explore the response on photograph and bridge the discussion into community action (Catalani and Minkler, 2010). There are six questions in this methodology as follows:

1. What do you see here?
2. What is really happening here?
3. How does this relate to our lives?
4. Why does this concern/situation/strength exist?
5. How can we become empowered through our new understanding?
6. What can we do about it?

Photovoice study is a participatory study which also encourage the community to empower themselves with knowledge and problems identification basis. Therefore, at the end of FGD sessions, researchers explored informants' opinion about how to disseminate the information they gained through two sessions of FGD to their friends, teachers, and school community. The pre- and post-test were implied in this method aiming to see the participant understanding about the topic.

The transcripts from FGDs were analysed using the SHOWeD methodology approach sorted by the perception on SSB consumption and food label (nutritional and halal label). Data from pre- and post-test of nutrition knowledge were also analysed to complement the results from Photovoice study. The final data was presented in descriptive and narrative writing style.

2.1 Ethical Clearance

The ethical clearance was obtained from Ethical Committee for Health Research, University of Muhammadiyah Prof. DR. Hamka. Informed consent was explained to the informants prior to the FGD processes.

3 RESULTS

All participants are 2nd grade students of Muhammadiyah 11 Jakarta High School, Indonesia, three males and two females were participated in this study. The average of age was 17.5 years which define as early adolescent group of age. The results are presented based on the objective per FGD session, the first session aimed to brainstorm photo theme to answer the research question: the perception on sugar-sweetened beverage (SSB), the perception on food label, and the perception on halal label. Second FGD session aimed to explore participants' perception related to those research questions.

3.1 Results of Pre- and Post-test

Pre-test was conducted in the beginning of the study and post-test at the end of the study. The design of questions followed the general information about SSB, food and halal label. It could describe how the young age group understanding about those three discussions. The results reported that there is no increase on the total score from pre-test (mean= 58) and post-test (mean= 58). This research argued that the perception and understanding of young people is average. However, we could notice the increase of score in some item of question as shown in table 1.

Table 1: Breakdown of pre- and post-test results by item of question

Question	Number of true answer in pre - test	Number of true answer in post-test
Limit of daily added sugar consumption is 40 grams/3 tablespoon	1	1
Excess sugar consumption causes obesity	5	5
Halal logo from LPPOM MUI could be freely drawn by the manufacturer	1	3
The first thing that need to be noticed in food label is the serving size	2	3
Carbohydrate content interprets the content of sodium	5	4
Halal logo from LPPOM MUI should be presented in green	3	2
Child obesity cause adult obesity	5	4
Adolescents drink SSB the most among other age groups	4	5
Vitamin A consumption should be limited to prevent obesity	3	3
AKG stands for Asosiasi Keluarga Gizi	1	1

The results demonstrated that number of true answers were increased in about several topics: regulation of halal label claim in Indonesia, important steps on reading the food label, and trend of SSB consumption among adolescents. The decrease of score on questions about the role of nutrient and health issues also could be taken into account. Even though this participatory study is potential to increase the awareness on SSB and food label, the low score on nutrient-related content suggested that nutrition education is still needed in this population.

3.2 Brainstorming of Photo Themes

During the session, researchers asked what photo themes matched with the research questions. Samples of photo were provided to start the discussion during brainstorming.

Participants viewed that to answer research question about the perception on SSB, they should take photos about SSB purchase in shops, role of technology in SSB purchase, role of public figure and SSB consumption, and the role of price, promotion, and discount. Themes to answer perception of nutrition are food label in food and drink, nutrition label, ingredients and other labels. Perception of food

label includes different types of halal label, halal label from imported foods, halal label in restaurant, and halal label in non-food products.

3.3 The Perception on Sugar-Sweetened Beverages (SSB)

Participants defined SSB as coloured drink products with sugar content. Participants viewed that nowadays coffee identic with SSB. It means that they mainstreamed the SSB and coffee due to overexposure with the coffee products in every merchant they visit. The participants state that coffee is always deserved with SSB as revealed in many coffee shops presently. Adding more, these group of young people preserve that drinking coffee must be added with sugar or milk. They enjoy coffee as a lifestyle, not as coffee connoisseurs with all the philosophies behind it. As adolescents, participants expressed that desire to order SSB depends on timing and mood. Furthermore, brand becomes a consideration when choosing SSB product.

Part of them also reported that they frequently order SSB by *ojek* online service. With the current updates in technology, it makes them easier to access SSB product. They can easily order the product by online and the product will reach them shortly. It becomes more convenience and help them with daily business. Online service also helped them to buy the desired product in the restriction period during COVID-19.



Figure 1: An *ojek* driver get online order of SSB

Participants reported that price, location, and taste become consideration in choosing SSB product. Participants think that marketing, particularly advertisement in social media affected their decision to purchase SSB products. Range of price that they consider as affordable to buy SSB product is at IDR 35,000 – 50,000. It reveals that adolescence nowadays will spend their money to purchase SSB products as much as their daily spending. Some of participant mentioned that they need to take extra

money from their parents in fulfilling their willingness to order SSB products.

Participants felt that peer group influence their decision to purchase SSB. In their point of view, SSB consumption is related with current youth lifestyle and it helps to lift up the bad mood. Moreover, the SSB consumption also identical with social construction among youth. In order to have a conducive socialized environment, the participants mentioned that their needs to buy SSB products is a way to show their social class. Café with SSB as the main menu is often chosen as place to gather with friends. Therefore, the store location also being considered. Some of them already have certain favourite café that often being a hangout place with their peers.

Participants viewed that influencer or public figure also play role in shaping decision on buying SSB. For example, a photo that they have been collected also showed a café owned by Indonesian public figure, and participant said that for some groups, it might engage people to buy because of the owner popularity.



Figure 2: Example of café owned by Indonesian public figure

Regarding to the health risk, participants reported that they actually know that excess sugar consumption could be detrimental for health. The risks reported are diabetes mellitus and obesity. They also reported that they did not know what are the government policy to control SSB consumption.

“...saya tahu mengkonsumsi minuman berpemanis berlebihan itu berbahaya terutama untuk kesehatan karena bisa menyebabkan berbagai penyakit, tapi kadang saya masih tetap saja mengkonsumsi...”

(...I know the overconsumption of SSB products is not good for health because it accelerated the health problems, but I still consume it...”

These young people admit they know the negative impact of SSB products on their health, but they still consume SSB products. These different motives and actions can illustrate how young people tend to choose SSB products as a lifestyle over health reason. The decision to purchase SSB products and the external influences are the main factors in the current adolescence lifestyle. Moreover, the perspective from pricing, the healthy food price is assumed by participants as more expensive than SSB at the same merchant because there is a hidden value for healthy foods. In addition, participants are starting to get a freedom in choosing their foods and drinks, especially outside the home, so it is necessary to develop an easier effort for them to make healthier choices.

3.4 The Perception on Food Label

Participants reported that they know what food label is. In their point of view, food label is a group of letter, image, or combination of both of them that give information about percent of nutrients which provided in package of food or beverage products. Although the participants know what food label is, their consideration to read the content of food label is not the priority.

Participants felt that food label become their last priority to read in the food product package when selecting a food and beverage products. Food label is read after considering the brand, the quality of package, price, taste, and expired date. Sometimes they even only grab the product without considering anything because they just want to drink or eat the product without any consideration as presented in following perception quotes. The less preference to read food label happens for both foods and drinks.

"Saya pertama kali lihat merek."
 "I first look at the brand (of product)"

"Males aja. langsung milih produknya aja sih..."
 "I am just lazy to the point I will just take the product that I want..."

Interestingly, female participants tend to be more consider to read food label for certain kind of foods, particularly in sweet products, such as yogurt and bread. They felt that the sugar content in sweet products will be dangerous for health. Contrarily, the male ones thought that food label is not really important to consider and thus not interested to explore it.



Figure 3: Food label in SSB product

Participants also reported huge challenge on reading food label because of the academic terms used in the label. They did not understand some terms in the nutrition facts and ingredients. Some of them try to look in the internet for the terms, but it needs a bigger effort. For example, in figure 4, they did not understand what alpha-tocopherol is.



Figure 4: Ingredients in food label

Regarding to the low preference to read food label among adolescents, participants argued that it could be happen because of the lack of knowledge about food label. On the another side, part of them also argued that even though the knowledge about food label is good, they probably will not read it because of the eagerness to consume that product. Moreover,

they also tend to not read the label because it is a time consuming activity.

“Mungkin karena kurangnya pengetahuan. Tapi bisa juga pengetahuan ada, tapi karena pengen banget mengkonsumsi itu, jadi ga dibaca labelnya.”

“It might be because of the lack in knowledge, but it is also could happen even though we know (that it is important), but did not read it since (we) really want it (the product)”

Participants reflected the low preference on reading the food label among them could be enhanced by increasing the self-motivation. They valued education is important to give better understanding on food label and eventually increase the motivation to read it. Participants expressed that public figure or influencer is not really give a significant motivation to read the food label or influence people to consume certain product. However, part of them thought that actually public figure does have the role to influence people, but specific for certain groups, for example the fans.

Participants reported that education or promotion in social media or national media (in television for example) is effective enough to engage adolescents for doing certain behaviour. They assumed it could also be applied in education of food label.

“Public figure ga terlalu berpengaruh sih utk saya. keinginan utk baca label pangan muncul dari diri sendiri, kalo mau tahu baca aja.”

“Public figure does not really affect me, the willingness to read food label must come from each individual (motivation)”

“Mungkin tulisan label pangan harus dibuat lebih besar. Public figure banyak diikuti juga khususnya oleh penggemar.”

“Maybe the letter in food label should be made bigger, for public figure, they are followed by their fans.”

“Remaja mungkin paling efektif melalui sekolah atau media sosial, misal Instagram.”

“(Education for) adolescents might be effective in social media, such as Instagram.”

This quote implies the preferable media that chosen by participants to empower themselves and their community. Social media is still being a popular media platform among adolescents. Hence this potential could be applied as the opportunity to deliver nutrition and health-related messages (Jones et al., 2014).

3.5 The Perception on Halal Label

Participants defined halal label as the label in the food package stated from MUI (Indonesian Council of Ulama) that declare its halal status according to Islamic law. They viewed that halal label is important, especially in imported products. Halal label also important because it declares that the product is not dangerous.

Participants reported that halal logo is one of the thing that they will consider first when buying an imported product. However, for food products from Indonesia, they rarely check the halal label because of the sense of security. They felt that as a majority Muslim, they should not be much worry about halal label from food. Interestingly, they also rarely check the halal label from a well-known brand product.

Participants viewed that they have a low awareness on checking halal label even though halal is mandatory for Muslim. In their opinion, the thing that could be done to improve the awareness is doing education through popular social media, such as Instagram or TikTok, to community about the importance on checking the halal label, particularly for Muslim.

“... Kalau remaja edukasi di tiktok dan Instagram..., Karena saya sering lihat di tiktok, orang makan produk impor tapi ga ada logo halalnya....”,

“... For teenagers, halal education on Tiktok and Instagram might be a good way, Because I often see on Tiktok, that many people eat imported products but there is no halal label”

From figure 5, they noticed that the colour of halal label could be different among package, therefore, it is also important to check the validity of halal label from MUI.



Figure 5: The difference of halal label among products

“Kalau agama islam wajib baca label halal kalau non islam ga wajib, karena yang islam

wajib makan yang halal. kalau bentuk dan warna label halal pada produk kayaknya ga ada pengaruh”

“Maybe for Muslim read the halal label is the important things to do because Muslim are required to eat halal food, but it's not mandatory for non-Muslim. And for the colour and shape of the halal label, I think it doesn't seem to have any differences”

3.6 Strategy of Dissemination

In this study, we also gained information from the participants on what they could do to improve the knowledge regarding to the current issue in their community. Participants argued that they can disseminate the information they gained from this study to the school community. Participant viewed that actually they could involve all elements in the school in the program, so that the community empowerment could be sustainable.

The knowledge from this study could be merged into current school programs by involving the student body (OSIS), school teachers, school community, staff of canteen, and parents. From the best of their knowledge, the example of available program currently is class meeting and school festival. In the future, they also plan to discuss with teachers about placement of health-promoting media in the strategies places, such as in the canteen.

4 DISCUSSION

SSB consumption is often related to release stress and lift up the mood. The theory that sugar might improve the mood actually was challenged in the recent studies. The role of sugar in mood improvement, or usually known as “sugar rush”, is actually considered as a myth (Mantantzis et al., 2019). An experimental study also confirmed that there is no effect of sugar consumption on mood (Giles et al., 2018). The satisfying and better feeling after consuming sugar perhaps comes from serotonergic effect of sugar that occur in specific conditions, such as, stress (Giles et al., 2018).

Advertisement in social media increase SSB consumption. It has been known that adolescents are primary audience of food advertiser. The role of public figure in the marketing also scaling up the decision made to purchase SSB product. Conventional media, such as television, showed decrease in trend of fast food and beverage advertisement exposure among adolescents, probably

due to the shift of media consumption to social media (Czoli et al., 2020). Food advertisement in YouTube, online purchasing, and online advertisement is strongly related with the consumption of unhealthy diet among adolescents (Baldwin et al., 2018).

According to this study, the power of branding related with the decision to choose certain product. There are several steps on brand building that determine consumer's decision. Among millennial consumers, brand image and brand trust play vital role on consumer's decision. Moreover, consumer's experience on certain brand also increase brand attachment (Kim and Chao, 2019). It explains why in this study some participants have already been attached to certain SSB brands or specific manufacturers.

This study also reported that the availability of SSB in the online delivery service, *ojek* online in Indonesia case, increase the purchasing behaviour. It has been demonstrated that environmental factor that support adolescents to easily access SSB, play key role on the increasing trend of SSB consumption (Hess et al., 2019). Other environmental factors that reported in the present study are also the labelling, price, promotion, and community awareness, including peer groups and social construction.

Several factors are reported on challenging the awareness to read food label according to this study, namely: (1) Low food label awareness (participants know it is important, but majority rarely notice the food labels), (2) Male participants have lower food label awareness compared to females, (3) Low knowledge on the content terms, (4) Most participant thinks that read the food label is a time consuming activity, (5) Participants have a less awareness and less knowledges in reading halal label (they would only interested in halal label if they might be personally bought imported products), and also (6) Participant feels safe and secured about halal label because Indonesia is a Muslim majority country.

These findings are supported by previous study that only a few participants noticed labelling of food products information (Evans et al., 2016). Other studies found that 50% of adolescents in US rarely or never using the nutrition information on food products (Wojcicki and Heyman, 2012). This finding also strengthen the current problem among adolescent that they are rarely care about nutrient intake. However, in certain population with chronic diseases, food label is considered as important thus, the desire to read food label even better that healthy population (Post et al., 2010).

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