

INTENTION TO REDUCE SUGAR CONSUMPTION OF SUGAR-SWEETENED BEVERAGES (SSB)

Wan Rusni binti Wan Ismail ¹
Wan Hayati binti Wan Bujang ²
Norliana binti Hashim ^{3**}
Firdaus Ahmad Fauzi ⁴
Nashwa binti Abdul Ghani ⁵

¹ Faculty of Hotel and Tourism Management, Universiti Teknologi MARA (UiTM) Cawangan Pulau Pinang, Pulau Pinang, Malaysia.

Email: rusni.wi@uitm.edu.my

² Faculty of Hotel and Tourism Management Universiti Teknologi MARA (UiTM), Cawangan Selangor, Puncak Alam, Malaysia

Email: firdausfauzi@uitm.edu.my

³ Faculty of Hotel and Tourism Management, Universiti Teknologi MARA (UiTM) Cawangan Pulau Pinang, Pulau Pinang, Malaysia.

Email: norli1974@uitm.edu.my

⁴ Faculty of Hotel and Tourism Management, Universiti Teknologi MARA (UiTM), Cawangan Selangor, Puncak Alam, Malaysia

Email: wanatiey25@uitm.edu.my

⁵ Faculty of Hotel and Tourism Management, Universiti Teknologi MARA (UiTM) Cawangan Pulau Pinang Pulau Pinang, Malaysia.

Email: nashwaghani97@gmail.com

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Abstract: *Sugar is an important source of energy. However, sugar consumption among Malaysians has been increasing due to urbanization and marketing strategy. Today, Malaysia holds the the highest record of obesity rates among adults in South Asian Countries. It has raised concern on the side effects that could affect well-being due to consumption of SSB. Therefore, this quantitative study aimed to reveal factors that influences intention to reduce sugar consumption in SSB among Malaysians. Survey questions was distributed to Malaysian above 18 years old through social media platforms. A cumulative number of 268 respondents was successfully collected but only 201 responses were considered as valid. The study has found that age group plays an important role in shifting lifestyle. Younger age group are unlikely intend to reduce sugar consumption as there are barrier that could not be avoided. It can also be said that they do not feel threaten or at risk of the consequences in consuming SSB. Thus, intention to reduce sugar consumption relies entirely on individuals' perception towards the threats, risk and benefits. The study conclude that it is crucial to create awareness on the side effects of consuming SSB towards health especially to younger generations as they perceived the most barriers.*

Keywords: *Sugar, Sugar-sweetened Beverages, Beverages, Health Belief Model*

Introduction

Sugar-sweetened beverages (SSB) are any type of drinks that contain added sugar such as raw sugar, brown sugar, sucrose, fructose, lactose, glucose, dextrose, corn syrup, malt syrup, and molasses (CDC, 2018). Examples of SSB include carbonated drinks, energy drinks, fruit drinks, sweetened coffee, teas, flavored milk, and others drinks that are being sweetened. However, sugar is considered as simple carbohydrate that can provide energy to one's body but it contributes zero nutrients to the human body. Consuming excessive amount of SSB may lead to many health consequences. The consumption of SSB not only affects one's health but one's life expectancy also will be affected in which, consuming SSB may lead to non-communicable diseases (NCD) which are driven by being obese as it acts as a drive to other life-threatening diseases (CDC, 2018). According to (Al-Hassan et al., 2020), NCD has contributed a large number of mortality and morbidity in majority parts of the world. Researcher further added that is caused by urbanization. In addition, the sales of SSB are still booming and continue to attract a younger population even though many are aware of the adverse effects of consuming SSB (Taylor et al., 2011). A study by (Ramezankhani et al., 2016), stated that every glass of SSB may increase the chance of obesity by 60%. For half a century, excessive sugar intake has been rising 3 times more worldwide. In Malaysia as well, consumption of sugary drinks also increased drastically above recommendations (Clark-hattingh, n.d.)

Thus, it is important to create awareness to the society on the adverse effects of consuming SSB. As a result, it portrays importance to encourage behavior change and to identify the modifying variables that gives an impact towards SSB consumption so that interventions can be made (Dono et al., 2021). Hence, this study aims (1) to identify the relationship between perceived susceptibility and intention in reducing consumption of SSB, (2) to investigate the relationship between perceived severity and intention in reducing consumption of SSB, (3) to study the relationship between perceived benefits and intention in reducing the consumption of SSB and (4) to identify the relationship between perceived barriers and intention in reducing consumption of SSB.

Literature review

Health belief model

The HBM consists of perceived susceptibility, perceived severity, perceived benefits, perceived barrier, self-efficacy and cues to action. According to (Boskey, 2020), negative behavior can be modified to health behavior with the individual willingness to make a change due to their perception towards the perceived threat to sickness or disease. This is because, according to (Lee et al., 2020), during 1950s, the HBM were developed due to the apathetic response that were received from the public toward health screening program. Although the service is free and low cost (percieved benefits), the public look lightly on this matter. This is when scientists developed this theoretical framework that helps scientist to predict health behaviours (Boskey, 2020).

Perceived susceptibility

Perceived susceptibility refers to a persons' perception towards their risks on a certain disease. According to (LaMorte, 2019), perceived susceptibility is one of the constructs that can be found in the Health Belief Model (HBM). A study by (Dono et al., 2021) revealed that individual intention to reduce SSB intake are more likely compared to those who have the opposed view towards the costs of consuming high intake of SSB. However, perception is subjective as it varies from one person to another (LaMorte, 2019). This is supported by a study

from (Mehari, 2015), in which the researcher stated that feeling may be vary for every individual regarding to their vulnerability towards threat. Thus, this reflects back to a person's own perception. In other words, the intention to reduce depends entirely on the individuals themselves.

In the context of reducing consumption of SSB, it unveils the risks that an individual could obtain if action to reduce SSB is not being done. Over consumption of SSBs often leads to weight gain, obesity, diabetes, heart disease, kidney diseases, and liver (Harguth, 2020)(CDC, 2018). Recently, another study shows that there is evidence of the relationship between SSB consumption and long-term weight gain and type 2 diabetes mellitus (T2DM) (Mehari, 2015). By excessively consuming high quantities of sugar, the chance of susceptible to T2DM and cardiovascular risk is most likely high as the high intake of glycemic load (GL) causes inflammation, insulin resistance, and impairment of cell functions (Malik et al., 2010).

Perceived severity

Perceive severity or also known as perceived seriousness refers to an individual feeling towards actual consequences of illness or disease that they may be diagnosed with in the future (LaMorte, 2019). In this study context, it is a personal feeling towards a negative outcome that they face if they consume excessive sugar intake in beverages. The most common sugar which is fructose found in sodas is corn syrup. Over consumption of fructose may harm the liver and result in hepatic insulin resistance and metabolic syndrome (Mekonnen et al., 2013).

Besides that, another study reveals that for people who take more than a single drink of SSB for one day, their risk of coronary heart disease will be 23% higher in contrast to people who seldom consume SSB. To make matters worse, according to (Reynen et al., 2011), in California, heart disease is the number one cause of death. The evidence can also be seen in an article by (Wanjek, 2015) stated that every year, consumption of SSB has caused 184,000 deaths while a study in the United States has recorded amounting 25,000 death due to consumption of sugary drinks that has led to many other health complications such as diabetes, heart disease, and cancer.

Perceived benefits

Perceived benefits are a perception towards a positive outcome that may be obtained if one practices a change of behavior (Leung, 2013). In the same study, academicians believe that an individuals' behavior is driven by their cognition in terms of acceptability, motives, and attitudes toward such behavior, especially if positive. Therefore, in the context of reducing the consumption of SSB, the variable of perceived benefits helps to measure an individual's perception towards the benefits that they will attribute if intention to reduce SSB is being practiced.

When sugar is being consumed by an individual, it releases a feel-good hormone but when a person tries to cut down their sugar intake, they are most likely to undergo an unpleasant experience as the body is going through withdrawal (Guerra, 2019). Nevertheless, despite the unwanted feelings of withdrawal, one should always take account of the benefits that they will obtain when reducing sugar consumption. Reducing sugar consumption is not only good for one's health but, in an interview by (Guerra, 2019) interviewee clarifies that reducing the consumption of sugar may make skin complex strengthen due to the elastin and collagen that are obtained. As a result of reducing sugar intake, it will help the skin to not become inflamed or flare up due to being triggered by refined sugar.

In addition, according to the World Health Organization (WHO), eliminating sugar, will lower the risk of weight gain among children, adolescents, and adults (World et al., 2015). Thus, when one reduces the consumption of sugar, directly it will also lower the risk of being susceptible to diabetes and other non-communicable diseases (NCD). (World et al., 2015), further added that lowering sugar intake can also lower dental carries problems among children.

Over the past 15 years, consumption of SSB has increased due to raising of incomes. According to (Clark-hattingh, n.d.), in a day, 36% of students consume SSB and the increasing intake of sugar has raised from 7 tablespoons to 10 tablespoons in 2017 among adolescents. This shows that it has exceeded the recommended amount of sugar intake for adults Thus, according Institute for Public Health (IPH), the prevalence of overweight and obesity was 30.4% in Malaysia and this has affected approximately 1 million Malaysian adolescents (Institute et al., 2019). A study by (Malik et al., 2010), has revealed that SSB intake has associated with weight gain and obesity in children.

Perceived barriers

Perceived barriers refer to obstacles and challenges faced by an individual emotion towards practicing a healthier lifestyle (LaMorte, 2019). To add, individuals who perceive more barriers are most likely unable to practice a healthier diet (Pinho et al., 2017). A study on healthy eating by (Sylvetsky et al., 2020). The European consumer attitudinal study stated that barriers towards healthy eating are busy lifestyle, irregular working hours, unmotivated, family and friend's preferences, and minimal choice of healthy foods which are often less appealing. Furthermore, other barriers that discourage an individual from reducing consumption of SSB also is due to the aggressive advertising by the beverages company (Kleiman et al., 2011). Not only that, many consume SSB as they perceive that SSB contributes energy to their body. Several studies on college students show that students consume caffeinated sugar-sweetened beverages (CSSB) to stay awake, study or socialize (Harguth, 2020). This can also be seen in a study in Mexico, 10% of SSB intake were supplied as energy in all age group in Mexico (Vergara-Castañeda et al., 2010).

Methodology

This research is a quantitative study that utilized the theoretical framework of health belief model (HBM). A purposive sampling technique was utilized to conduct this study to target a specific characteristic that is required for this study. Thus, this study is conducted specifically for Malaysian respondents who is a consumer of SSBs. Survey questions were obtained from adapted questionnaires from (Che et al., 2019). Questionnaire has been modified by the researcher to fit for this study. The instrumentation consists of 8 sections, 23 items within 4 constructs and participants were required to answer all questions before continuing to the next section. A dual-language of 5-point likert scale of strongly agree to strongly disagree questionnaire were distributed to the respondents through social media platforms such as Instagram and Whatsapp. Screening question was also asked at the beginning of the survey to filter unrelated responses. As for the sampling size, researcher uses the G-power calculator to calculate a medium size effect of .3 which represents 138 respondents according to (Cohen, 1992). Therefore, 268 responses were successfully collected with 201 valid responses.

Findings

The finding revealed that 56.2 % of the participants were female holding the highest percentage which represents 113 number of responses. As for the age group, 69.2% of contribution were from the age range of 23-27 years old with 139 responses. Besides that, results also shows that a large number of ideal weight responses is 97 which represents 48.3%, followed by the second highest, overweight at 41.3% (83 responses).

Pearson correlation

Researchers determined the relationship between independent variables and dependent variables using Pearson Correlation Coefficient. From the SPSS result of Pearson Correlation, it has been significantly proven that perceived susceptibility ($r = .406$, $p = .00$). Hence, there is a positive medium relationship with intention to reduce SSB. As for perceived severity, researchers found that there is a significant low positive relationship between perceived severity and intention to reduce SSB consumption ($r = .141$, $p = .04$). In contrast to perceived benefits, it is reported to be negative relationship between perceived benefits and intention to reduce SSB as ($r = -.002$, $p = .979$). Meanwhile, as for the last independent variable to be hypothesize, perceived barrier shows that there is a positive large relationship with intention to reduce SSB with the amount of ($r = .573$, $p = .00$).

Discussion and Conclusion

From the findings it can be concluded that three of the independent variables shows that there is a relationship with the dependent variable. In accordance to the HBM, results found that there is a significant relationship between perceived susceptibility and intention to reduce SSB. In this study, data collected shows that the highest and second highest frequency intake of SSB were “sometimes” and “often”. The frequency intake of respondents SSB has influence their perception toward perceived susceptibility. This finding is consistent with (Dono et al., 2021), researchers provide support towards the hypothesis by clarifying that people who perceived themselves consuming excessive amount of SSB are susceptible to health consequences (Dono et al., 2021). Findings were further support by (Al-Hassan et al., 2020), an individual perception towards the seriousness and susceptibility are influence by their perception towards health condition's threat (Al-Hassan et al., 2020). Hence, this study revealed that there is a significant relationship between perceived susceptibility and intention to reduce SSB due to their frequency of intake that has led them feeling susceptible towards the threats. Hence, the results show there is a significant relationship with perceived susceptibility and intention to reduce SSB.

The research also found there is a significant relationship between perceived severity and intention to reduce SSB. As a result, to the data obtained, low results may or may not be because of consumers are not aware on how much sugar they consume. This is because perceived threats increase due to sufficient knowledge on consequences of consuming SSB. According to a study by (Schafer, 2019), there is a relationship between knowledge and attitudes that can indicate that the participants aware that consuming SSB is not a healthy choice. With that, if a persons' knowledge on perceived severity were known, it is because of the knowledge that they have towards consequences of SSB but some may not aware on how many sugars intake is being consumed. Thus, that explained the low relationship reported. This provide a justification, whereby the hypothesis is accepted and there is a significant relationship between perceived severity and intention to reduce SSB.

It shows the strongest relationship of perceived barriers and intention to reduce SSB compared to other variables in this study. This finding can be supported by a study conducted by (Sylvetsky et al., 2020) on child and adolescents. According to (Sylvetsky et al., 2020), parents find it is hard to control child caffeinated sugar-sweetened beverages (CSSB) intake due to barriers such as availability, external influences, choice of preferences and more. Further evident by (Dono et al., 2021) claimed that widespread choices of SSB and promotions act as a barrier to to an individual to change their behavior. To extend, (Kleiman et al., 2011) also stated that advertisements of beverages appear as a barrier that discourage an individual from reducing consumption of SSB. Therefore, the external potential barriers are needed to be controlled as it plays and important part in reducing consumption of SSB. With that, the hypothesis is accepted and it can be concluded that there is a significant relationship between perceived barrier and intention to reduce SSB.

In the nutshell, it is revealed that perceived susceptibility and intention to reduce SSB has a moderate positive relationship. Though the individuals feel susceptible towards the consequences of consuming SSB, the perceived severity towards the effects on health were quite low although, it shows a positive relationship towards reducing SSB. From the results it is concluded that the effect of demographic variables has given an impact on the individual health behavior. The younger age demographic does not look at SSB as a threat to their health as they are still young. This is supported by a study whereby it was suggested that sugar intake often decrease by age due to sensitivity in physiological mechanisms towards sugar which led to decreasing interest in sweet taste. Hence, researchers aware of the lack in awareness among young generations. Thus, this resulted to a negative and no relationship between perceived benefits and intention to reduce SSB. Furthermore, it is also revealed that there is strong relationship between perceived barriers and intention to reduce SSB. Therefore, researcher can also conclude that the barriers in reducing SSB must be curb in order to lower the obesity rates that is currently increasing due to consumption of sugar in SSB.

Finally, the study importance is to call for interventions of many alliances to create awareness on the consequences of consuming SSB specifically at younger age group to increase their perceived threats. The effort of Ministry of Health (MOH) and Ministry of Education (MOE) to work on hands would create awareness at very young age through an intensive module related to health management program in school. Researchers believed that it is important to start young when teaching them a habit especially consuming a healthy meal. Thus, researcher hopes to provide guidance for future quantitative study that is related to this topic as guidance to create more studies that could help to build a healthier community. The research also focuses on people at the age of 18 and above instead of focusing more on children and adolescents. In addition, researchers suggest for future study to disseminate data according to age range equally so that comparisons can be made to fully understand the effects of each age group on the intention to reduce SSB.

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