



Consumption patterns of Sugar Sweetened Beverages (SSB) and its relationship with the risk of excess sugar intake among adolescents

pola konsumsi Minuman Berpemanis Dalam Kemasan (MBDK) dan kaitannya dengan risiko asupan gula berlebih pada remaja

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Abstract

Adolescents are a vulnerable age group with a tendency to adopt unhealthy dietary patterns, including higher sugar intake compared to other age groups. Sugar-sweetened beverages (SSBs) represent one of the main sources of added sugar and have been reported as a key contributor to the rising prevalence of obesity among Indonesian adolescents. Jember Regency, as a region experiencing modern lifestyle transitions, demonstrated a notable trend in SSB consumption that warranted further investigation. This study aimed to analyze SSB consumption patterns among adolescents in terms of type, amount, and frequency, as well as their association with respondent characteristics. An analytic observational study with a cross-sectional design was conducted from June to September 2024. Independent variables included age, sex, and education level, while the dependent variable was SSB consumption patterns. Data were collected using an online Semi Quantitative Food Frequency Questionnaire (SQ-FFQ) and analyzed using univariate and bivariate methods with the Chi-Square test. Results showed that almost all respondents (97.75%) consumed more than one type of SSB, with packaged tea being the most frequently consumed (37.39%), and 48% reported consuming SSBs 2–3 times per week. In conclusion, no significant differences were found across respondent characteristics, suggesting that SSBs were widely favored by adolescents with relatively high consumption frequencies.

Keywords: Adolescents obesity, consumption frequency, sugar consumption, sugary drinks

Abstrak

Remaja merupakan kelompok usia yang rentan memiliki pola makan kurang sehat, salah satunya ditandai dengan konsumsi gula yang lebih tinggi dibanding kelompok usia lain. Minuman berpemanis dalam kemasan (MBDK) menjadi salah satu sumber utama asupan gula tambahan yang dilaporkan berkontribusi terhadap meningkatnya prevalensi obesitas pada remaja Indonesia. Kabupaten Jember sebagai wilayah dengan perkembangan gaya hidup modern menunjukkan tren konsumsi MBDK yang layak diteliti lebih lanjut. Penelitian bertujuan menganalisis pola konsumsi MBDK pada remaja berdasarkan jenis, jumlah, dan frekuensi konsumsi, serta hubungannya dengan karakteristik responden. Penelitian menggunakan desain observasional analitik dengan pendekatan cross sectional dan dilaksanakan pada bulan Juni hingga September 2024. Variabel independen meliputi usia, jenis kelamin, dan tingkat pendidikan, sedangkan variabel dependen adalah pola konsumsi MBDK. Data dikumpulkan menggunakan kuesioner Semi Quantitative Food Frequency (SQ-FFQ) secara daring, kemudian dianalisis secara univariat dan bivariat dengan uji Chi-Square. Hasil penelitian menunjukkan hampir seluruh responden (97,75%) mengonsumsi lebih dari satu jenis MBDK, dengan teh kemasan sebagai pilihan terbanyak (37,39%) dan frekuensi konsumsi 2–3 kali per minggu (48%). Kesimpulan, tidak ditemukan perbedaan signifikan berdasarkan karakteristik responden, sehingga dapat disimpulkan bahwa MBDK digemari

remaja secara luas dengan frekuensi konsumsi yang relatif tinggi.

Kata Kunci: Frekuensi konsumsi, konsumsi gula, minuman manis, obesitas remaja

Introduction

Nutritional status among adolescents is a strategic issue in health development, as it plays a crucial role in determining the quality of growth and development into adulthood (Aulia, 2021; Al Rahmad et al., 2020). According to the Kemenkes RI (2018), adolescents today face complex nutritional challenges, which include not only single nutritional problems but also double and triple burden malnutrition. These conditions include undernutrition (stunting and wasting), overnutrition (overweight and obesity), and micronutrient deficiencies such as anemia. These issues require comprehensive attention and intervention, considering their impact on the increased risk of non-communicable diseases later in life and the reduction in capacity and productivity of future generations.

Nutritional problems among adolescents are generally triggered by unhealthy eating habits (Nurholilah, 2019). Adolescents tend to have diets high in sugar, salt, and fat. Based on the Individual Food Consumption Survey (FCS), 3 out of 10 Indonesians (29,7%) consume sugar above the recommended limit. Specifically, the adolescent age group has the highest sugar consumption rate, with 53,1% more than other age groups. This means that approximately 77 million Indonesians are consuming excessive amounts of sugar, which poses long-term health risks. One of the causes of high sugar intake among adolescents is the consumption of snacks at school, which typically contain high levels of sugar, salt, and fat. Additionally, adolescents tend to spend more time outside the home, such as at school or playgrounds, making them more exposed to unhealthy foods. One commonly consumed product is sugar-sweetened beverages (SSBs), which are known to contain high amounts of added sugars (Masri, 2022).

Sugar-sweetened beverages (SSBs) are drinks that contain added simple sugars during the production process, making them calorie-dense but low in other essential nutrients (Akhriani 2016). Previous studies reported that packaged beverages widely circulated in Indonesia contain between 37–54 grams of sugar and 310–420 kcal per serving. This calorie

content is considered high compared to the daily sugar intake recommended by the Ministry of Health, which is 10% of total energy intake or equivalent to 4 tablespoons of sugar (50 grams) (Masri, 2022). Moreover, both the World Health Organization (WHO) and the American Heart Association (AHA) recommend limiting added sugar intake to <5% or <25 grams per day for children aged 2–18 years (WHO, 2015 dan AHA, 2021).

The prevalence of SSB consumption in Indonesia has increased significantly over the past two decades, rising 15-fold from approximately 51 million liters in 1996 to 780 million liters in 2014. Furthermore, the 2018 Basic Health Research (Riskesdas) report showed that 56,4% of adolescents aged 15–19 in Indonesia consume sugary beverages at least once a day (Kemenkes RI, 2018). The increasing trend of SSB consumption among adolescents is a contributing risk factor to the rising prevalence of overweight and obesity in Indonesia (CISDI, 2022).

Adolescent obesity can have serious health consequences in the future if not addressed appropriately. It can lead to a decline in quality of life and increase the risk of degenerative diseases such as heart disease, stroke, hypertension, diabetes mellitus, cancer, or even mortality (Susindra, 2023).

According to the East Java Provincial Health Office, the prevalence of obesity increased from 15,48% in 2016 to 16% in 2018, with the number of cases reaching 1,163,118 people. In Jember Regency, the obesity rate was 10,65%, totaling 22,323 individuals with comprising 7,996 males and 14,327 females (Dinkes Jatim, 2018). Summersari Subdistrict ranks second in the highest obesity prevalence. In 2018, there were 163 recorded obesity cases among high school students or equivalent in Jember Regency. Based on these issues, the aim of this study is to analyze the consumption patterns of sugar-sweetened beverages based on type, quantity, and frequency among adolescents in Jember Regency and to examine their differences based on respondent characteristics such as gender, age, and education level.

Methods

This study employed a cross-sectional research design. This design was chosen to capture differences in the consumption patterns of sugar-sweetened beverages (SSBs) based on individual characteristics observed at a single point in time. The study was conducted from June to September 2024. The inclusion criteria for the sample were adolescents aged 12–24 years who reside or are domiciled in Summersari Subdistrict, Jember Regency, and have consumed SSBs within the last month. The sampling technique used was quota sampling, and a total of 222 respondents were obtained.

The independent variables in this study were the characteristics of the respondents, including gender, age (which was categorized into early adolescence [12–16 years] and late adolescence [17–24 years]), and education level (categorized into secondary education [junior and senior high school] and higher education [minimum diploma]). The dependent variable was the pattern of sugar-sweetened beverage (SSB) consumption, which included the type, size or quantity, and frequency of SSB consumption. In this study, SSBs were classified into five types: coffee, tea, chocolate, fruit/fruit-flavored, and soda drinks.

Sugar-Sweetened Beverage (SSB) Consumption Patterns

Data on SSB consumption patterns among adolescents were collected using a Semi-Quantitative Food Frequency Questionnaire (SQ-FFQ) specifically designed for SSBs. The types of beverages covered in this questionnaire included coffee, tea, chocolate, fruit drinks, and soda beverages. The frequency of SSB consumption was divided into two categories: frequent and infrequent.

Consumption was categorized as frequent if the respondent consumed SSBs ≥ 1 time per day or 2–3 times per week, while infrequent consumption was defined as 1–3 times per month or 4–6 times per month. The questionnaire was distributed online via Google Forms, shared through social media channels targeting students at the junior high school (or equivalent), senior high school/vocational school (or equivalent), and university level in the Summersari Subdistrict of Jember Regency. The questionnaire also included respondent characteristics (age, gender, and education

level), the types of SSBs consumed, frequency of consumption, and portion size. The estimated time required to complete the questionnaire was 5–10 minutes.

The questionnaire was disseminated broadly to all junior high school, senior high school/vocational school students, and university students in the Summersari Subdistrict, Jember Regency, through social media. The questionnaire collected various variables such as demographic data (age, gender, education level), types of SSBs, frequency of SSB consumption, and the portion size of SSBs consumed. The time needed for respondents to complete the questionnaire was approximately 5–10 minutes.

Data Analysis

All collected data were statistically analyzed. The data were analyzed using univariate and bivariate analysis with the Chi-Square test to determine the differences between respondent characteristics (gender, age, education) and the frequency of SSB (sugar-sweetened beverage) consumption. A significance level was set at $p < 0,05$. This study received ethical approval from the Ethics Committee of the Faculty of Public Health, University of Jember under approval number 523/KEPK/FKM-UNEJ/V/2024. Informed consent was obtained from all respondents online prior to completing the questionnaire.

Result and Discussion

Characteristics of Respondents

The consumption of SSBs in Indonesia has increased significantly over the past two decades. Currently, Indonesia ranks third highest in Southeast Asia in terms of SSB consumption (Ferretti dan Mariani, 2019). Konsumsi MBDK yang terus meningkat di Indonesia banyak terjadi pada kelompok remaja (CISDI, 2022). The increasing trend of SSB consumption in Indonesia occurs largely among adolescents.

Most respondents were female (80,18%), in the late adolescent age group (82,43%) aged between 17–24 years, and had a higher education level, with 82,43% holding a diploma or bachelor's degree, 22,97% having completed

senior high school or equivalent, and 15,32% junior high school or equivalent.

Table 1. Characteristics of study respondents

Characteristics	n	%
Gender		
Male	44	19,82
Female	178	80,18
Age		
Late Adolescents (17–24 years)	39	17,57
Late Adolescents (17–24 years)	183	82,43
Education		
Junior and Senior High School / Equivalent	85	38,29
Diploma / Bachelor's Degree / Master's Degree	137	61,71
Preferred Types of Sugar-Sweetened Beverages (SSBs)		
Coffe	53	23,87
Tea	83	37,39
Chocolate	47	21,17
Fruit/ Fruit-flavored	30	13,51
Soda	9	4,05
Number of SSB Types Consumed in the Past Month		
1 type	5	2,25
2 type	15	6,76
3 type	38	17,12
4 type	76	34,23
5 type	88	39,64

These findings are consistent with the study by Bakar et al. (2020) which showed that out of 350 respondents, 70,6% were female, aged between 21 and 30 years, and the majority were at the undergraduate education level (84,6%). Adolescence is one of the phases in the life cycle. It is a transitional stage from childhood to adulthood. According to the National Population and Family Planning Agency (NPFPA), adolescents are defined as individuals aged 10–24 years who are unmarried. This stage is a period of human growth and development characterized by many physical and psychological changes (Ayu, 2020).

Most of the respondents in this study were at the higher education level (diploma/bachelor's degree). At this age and educational stage, respondents experience various social and environmental changes. These changes involve increased independence in daily life and

decision-making, including those related to lifestyle and eating habits (Bakar, et al., 2020). Additionally, during this phase, adolescents tend to spend more time outside the home at school or on campus that making them more likely to have unhealthy dietary patterns, one of which is consuming more sugar compared to other age groups (Masri, 2022).

One of the most significant contributors to sugar intake from snacks consumed outside the home is sugar-sweetened beverages (SSBs), as they contain added simple sugars during production (Akhriani, 2016). SSBs can be categorized into several types, including carbonated and non-carbonated drinks, fruit or vegetable juices, liquid or powdered drink concentrates, flavored water, sports and energy drinks, instant tea, instant coffee, as well as trendy coffee beverages such as bottled iced coffee or coffee with added sugar and flavored syrups, and flavored milk (WHO, 2017).

Table 1 also shows that among the five types of SSBs observed in this study, more than 1 in 3 respondents preferred tea-based SSBs (37,39%), followed by coffee (23,87%), chocolate (21,17%), fruit/fruit-flavored drinks (13,51%), and soda (4,05%). In addition, over the past month, the majority of respondents (39,64%) reported having consumed all five types of SSBs, while only 2,25% reported consuming only one type. A study by Sari et al. (2021) on SSB consumption among adolescents showed that tea-based SSBs were the second most consumed (72,2%), after flavored milk (82,2%) among students. Similarly, research by Fahria dan Ruhana (2022) found that the most consumed sweetened packaged drink among respondents was milk-based and dairy beverages, followed by tea-based drinks. This aligns with the findings of Bakar, *et al.* (2022) which showed that both male and female students preferred tea-based sweet drinks over other types, as these beverages were trending in Malaysia, such as bubble tea.

According to the respondents in this study, tea-based SSBs were considered more refreshing and affordable compared to other types. Additionally, tea is seen as more suitable for consumption after meals than other types of SSBs. Tea vendors are also more widespread and easily found in daily surroundings, particularly on roadsides, outside school gates, in canteens, food stalls, cafés, and franchise beverage outlets. This accessibility likely explains why tea-based SSBs are more frequently consumed and favored by respondents.

Sugar-Sweetened Beverage (SSB) Consumption Patterns

The analysis results showed that among all types of SSBs, nearly all respondents consumed tea-based SSBs (96,4%) (Table 2). However, all types of SSBs which is coffee, tea, chocolate, fruit/fruit-flavored, and soda had been consumed by more than 50% of respondents, indicating that each respondent was likely to consume more than one type of SSB.

Table 2. Types of Sugar-Sweetened Beverages (SSBs)

Type of SSB	Consumption in the Past Month	
	No. (%)	Yes (%)
Coffee	47 (21,2)	175 (78,8)
Tea	8 (3,6)	214 (96,4)
Chocolate	34 (15,3)	188 (84,7)
Fruit/Fruit-flavored	25 (11,3)	197 (88,7)
Soda	103 (46,4)	119 (53,6)

Table 3. Frequency of consumption and preferred serving size of Sugar-Sweetened Beverages (SSBs)

Variable	Type of SSB				
	Coffe (%)	Tea (%)	Chocolate (%)	Fruit/Fruit-flavored (%)	Soda (%)
Frequency of Consumption					
≥ 1x/day	25 (14,3)	25 (11,7)	13 (6,9)	11(5,6)	8 (6,7)
2-3x/week	45 (25,7)	84 (39,3)	44 (23,4)	54 (27,4)	14 (11,8)
4-6x/month	19 (10,9)	53 (24,8)	33 (17,6)	47 (23,9)	14 (11,8)
1-3x/month	86 (49,1)	52 (24,2)	98 (52,1)	85 (43,1)	83 (69,7)
Cup Size					
7 oz (± 200 ml)	52 (29,7)	23 (10,7)	29 (15,4)	5 (2,5)	16 (13,4)
8 oz (± 250 ml)	16 (9,1)	24 (11,2)	23 (12,2)	36 (18,4)	16 (13,4)
12 oz (± 350 ml)	36 (20,6)	46 (21,5)	45 (23,9)	42 (21,3)	36 (30,3)
14 oz (± 400 ml)	18 (10,3)	21 (9,8)	24 (12,8)	28 (14,2)	16 (13,4)
16/18 oz (± 500 ml)	50 (28,6)	96 (44,9)	64 (34,1)	83 (42,1)	31 (26,1)
Others	3 (1,7)	4 (1,9)	3 (1,6)	3 (1,5)	4 (3,4)

Sweetened beverage (SSB) among respondents is tea, with a frequency of 2–3 times per week, while other types of SSBs are consumed 1–2 times per month. According to a study by Sari et al. (2021), the consumption of packaged sweetened beverages among most high school adolescents in Jakarta was considered high, at ≥3 times per day. A study by Kuo et al. (2022) also found that in Taiwan, the frequency of sugary beverage consumption was as follows: 16,6% of respondents consumed them 1–2 times per week, 8,3% consumed them 3–4 times per week, and 7,9% consumed them ≥5 times per week. Similarly, Fahria (2022) found that the frequency of sugary drink consumption among most respondents was < 3 times per week (42%) and once every two weeks (39%), with tea-based beverages being one of the most commonly consumed types.

This is also in line with the research by Anwar dan Khalda (2023) which showed that the most frequently consumed type of sweetened drink was sweet tea (62,5%) with a

frequency of 1–3 times per day. Regarding cup sizes (Table 3), the most commonly used cup size by respondents for tea, chocolate, and fruit/fruit-flavored SSBs was 16/18 oz (±500 ml). For coffee, two cup sizes were commonly used: 7 oz (±200 ml), typically used as a cup, and 16/18 oz (±500 ml). For soda, the most commonly used cup sizes were 12 oz (±350 ml) and 16/18 oz (±500 ml). Based on this, it can be concluded that most respondents frequently consumed all types of SSBs using 16/18 oz (±500 ml) cups.

This is also consistent with the findings of Wang dan Vine (2013) which indicated that respondents aged 12–44 years consumed at least 16 oz (473 ml) of sweetened beverages per day purchased from food service establishments. Taksler et al. (2016) also noted in their study that 88% of adolescent respondents ordered sweetened beverages in larger sizes, while young adults and individuals over 50 years old more often consumed sweetened drinks using regular cup sizes. Plastic cups with a capacity of 16 oz or more are equivalent to 473 ml and are

suitable for iced tea or other contemporary drinks (Wiranata, 2024). This may explain why many beverage outlets commonly sell SSBs in 16 oz cup sizes.

Differences in SSB Consumption Frequency Based on Respondent Characteristics

Table 4 presents the results of an analysis of differences in SSB consumption frequency based on beverage type and respondent characteristics. The analysis results showed no significant differences in the frequency of consumption of coffee, tea, chocolate, fruit/fruit-flavored beverages, or soda based on gender, adolescent age group, or education level. All respondents demonstrated similar consumption patterns across all SSB types, regardless of whether they were male or female, early or late adolescents, or had secondary or higher education levels.

Table 4. Differences in the frequency of SSB consumption based on respondent characteristics and type of SSB

Type of SSB and Respondent Characteristics	Frequency of SSB Consumption		p-value
	Often (%)	Rarely (%)	
Coffe (n=175)			
Gender			
Male	9 (27,3)	24 (72,7)	0,098
Female	61(43,0)	81 (57,0)	
Age			
Early Adolescence	11 (37,9)	18 (62,1)	0,803
Late Adolescence	59 (40,4)	87 (59,6)	
Education Level			
Secondary	28 (44,4)	35 (55,6)	0,368
Higher	42 (37,5)	70 (62,5)	
Tea (n = 214)			
Gender			
Male	19 (45,2)	23 (54,8)	0,410
Female	90 (52,3)	82 (47,7)	
Age			
Early Adolescence	23 (63,9)	13 (36,1)	0,088
Late Adolescence	86 (48,3)	92 (51,7)	
Education Level			
Secondary	46 (56,1)	36 (43,9)	0,234
Higher	63 (47,7)	69 (52,3)	

Chocolate (n = 188)				
Gender				
Male	10 (27,8)	26 (72,2)	0,712	
Female	47 (30,9)	105 (69,1)		
Age				
Early Adolescence	10 (29,4)	24 (70,6)	0,899	
Late Adolescence	47 (30,5)	107 (69,5)		
Education Level				
Secondary	22 (29,3)	53 (70,7)	0,811	
Higher	35 (31,0)	78 (69,0)		
Fruit/Fruit-Flavored Drinks (n = 197)				
Gender				
Male	9 (24,3)	28 (75,7)	0,213	
Female	56 (35,0)	104 (65,0)		
Age				
Early Adolescence	10 (28,6)	25 (71,4)	0,539	
Late Adolescence	55 (34,0)	107 (66,0)		
Education Level				
Secondary	24 (31,2)	53 (68,8)	0,662	
Higher	41 (34,2)	79 (65,8)		
Soda (n = 119)				
Gender				
Male	2 (9,5)	19 (90,5)	0,244	
Female	20 (20,4)	78 (79,6)		
Age				
Early Adolescence	5 (23,8)	16 (76,2)	0,489	
Late Adolescence	17 (17,3)	81 (82,7)		
Education Level				
Secondary	10 (21,3)	37 (78,7)	0,527	
Higher	12 (16,7)	60 (83,3)		

Among all types of SSBs (Sugar-Sweetened Beverages), tea had the highest percentage of frequent consumption, especially among female respondents (52,3%). A similar pattern was seen in the early adolescent age group (63,9%) who frequently consumed tea. This finding aligns with the data that those with a middle level of education (56,1%) often consumed tea-based SSBs. It can be concluded that tea is the most commonly consumed SSB among respondents aged 12–16 years with junior to senior high

school education levels. This finding is in line with the research by Tan *et al.* (2020) which showed no significant relationship between the frequency of SSB consumption and gender meaning that both male and female respondents consumed SSBs and sugar equally frequently.

Sugar-sweetened beverages are increasingly favored by various groups, especially younger individuals, including adolescents and young adults, due to several factors. These include economic factors such as affordability and availability, psychological factors such as attitude, mood, and stress, and social (environmental) factors such as culture, family, and peer influence (Ong, 2017). Peers play a very important role for adolescents, as this is the stage where they begin to separate from their parents and integrate more with their peer groups, who significantly influence their behavior (Buwana, 2023). Moreover, the consumption of SSBs is also driven by taste, freshness, and the perception that such drinks are healthy, as well as the habit of consuming them during meals (Avila, 2018). This aligns with the concept of consumer behavior theory in decision-making when purchasing products like SSBs. Respondents in this study reported the main reasons for consuming tea-based SSBs were: taste (68,20%), easy to find/convenient (19,31%), low price (9,09%), and other reasons (3,40%). Additionally, tea was consumed more than other beverage types due to a tendency to consume sweetened drinks during main meals.

A study by Bipasha *et al.* (2017) found that 95,4% of students at Daffodil International University in Bangladesh consumed SSBs, with 53,6% consuming them ≥ 2 times/week. The main reasons were good taste and refreshing quality (80,1%), affordable price (6,6%), and easy availability (2,6%). Today, SSBs are very accessible in places like street stalls and shopping centers, especially with the rise of trendy beverage outlets that offer sweetened drinks, now easily ordered via online food delivery apps. This ease of access contributes to increased public consumption of high-calorie beverages. These trendy drink outlets facilitate access and ultimately influence consumption levels (Veronica, 2020). Regarding access and availability, urban areas have greater potential for increased consumption of sweetened drinks due to their more consumerist lifestyle (Buwana, 2023).

However, excessive consumption of SSBs can contribute to increased daily sugar intake. Excess sugar intake raises the risk of overweight

and obesity in adolescents. In the long term, this contributes to the high prevalence of non-communicable diseases (such as diabetes and cardiovascular disease) in adolescents, increasing the risk of mortality and morbidity (Fanda *et al.* 2020). Other studies have also linked excessive SSB consumption to dental damage in children, kidney disease, micronutrient deficiency, cancer, stroke, psychological disorders such as anxiety, sleep disturbances, and behavioral problems in preschool children. These issues have been associated with the high sugar content and other substances in the drinks, such as carbon dioxide, caffeine, tannins, and artificial sweeteners (Ayu, 2022). Simple sugars added to SSBs can include disaccharides (sucrose and table sugar), monosaccharides (glucose, fructose), and natural sugars in the form of honey, syrups, unsweetened fruit juice, and fruit juice concentrates (WHO, 2017) (WHO, 2017). Study by Ayu (2022) found that from 22 SSB samples with a 317 ml serving size, the sugar content averaged 23 g, or approximately 7.26 g/100 ml.

This highlights the fact that SSB consumption is often unhealthy, as the Food and Drug Supervisory Agency (BPOM) classifies a "healthy choice" of sweetened beverage as one containing < 6 g of sugar per 100 ml. Another study analyzing sugar content in trendy beverages found that the total sugar content ranged from 23–70 grams in large-sized cups (500 ml), equivalent to 16/18 oz cups (Rosita, 2023). This clearly shows that consuming sweetened beverages or SSBs can result in sugar intake that exceeds the recommended limit set by the Indonesian Ministry of Health, which is a maximum of 50 grams/day or 10% of total energy intake.

Conclusion

Thus, this study has shown that there is no significant difference in the consumption patterns of sugar-sweetened beverages (SSBs) when viewed from the frequency of consumption and respondent characteristics. SSBs are favored by adolescents with a relatively high frequency, regardless of individual characteristics such as gender both males and females aged 12–24 years, with education levels ranging from junior/senior high school to higher education. Nearly all respondents (97,75%) consumed more than one type of SSB. Tea-type

SSBs (37,39%) were the most consumed/preferred, with a consumption frequency of 2–3 times per week (48%). Respondents stated they liked tea because it is refreshing, tasty, and affordable.

The findings show that tea is the most popular SSB due to its refreshing taste, pleasant flavor, and low price. However, there is a need for education regarding the health and nutritional risks associated with excessive SSB consumption among adolescents, which can be provided through schools or universities. Additionally, consumers need to limit portion sizes to reduce excess calorie intake from SSBs, particularly among children, adolescents, and young adults who are overweight. For future research, it is recommended to conduct data collection offline to obtain a more representative sample proportion.

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