Sugar Consumption Pattern of Adult Indonesian: A Phenomenological Study

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ABSTRACT

Sugar consumption has been linked to various health issues, including type 2 diabetes mellitus. This study seeks to examine the perspectives and experiences of Indonesian individuals concerning excessive sugar intake. Conducted as a qualitative phenomenological research, participants were selected through purposive sampling. Those who met the inclusion criteria and agreed to participate were provided with informed consent forms to complete prior to their interviews. Data were analyzed using Colaizzi's method of interpretation. The study involved 13 key informants, each with different sources of sugar intake and reasons for their consumption habits. These informants also expressed intentions to modify their sugar consumption patterns. The study reveals a range of views and experiences among Indonesians regarding high sugar consumption. The findings aim to inform nurses and health professionals the importance of continuous promotion of healthier sugar consumption practices within the community.

Keywords: Adult Indonesian, Experience, Knowledge, Sugar Consumption Pattern

INTRODUCTION

Globally, the prevalence of DM (type 2) continues to increase and there is no visible trend of decreasing it in the years to come (Khan et al., 2020). This conclusion is supported by sufficient evidence in which the World Health Organization (WHO, 2020) recorded that the number of people with diabetes rose from 108 million in 1980 to 422 million in 2014. Prevalence has been rising more rapidly in low- and middle-income countries than in high-income countries. Diabetes is a major cause of blindness, kidney failure, heart attacks, stroke and lower limb amputation. Between 2000 and 2019, there was a 3% increase in diabetes mortality rates by age. In 2019, diabetes and kidney disease due to diabetes caused an estimated 2 million deaths.

In many developed countries and developing countries such as Indonesia, there is an increase in Diabetes Mellitus (DM) sufferers in the adult population. This is caused by the current lifestyle of Indonesian people which is disrupted by the availability of various ready-to-eat and ready-to-eat foods. This is exacerbated by snacking habits, unhealthy cooking habits and the public's low understanding of nutrition which causes people to be faced with risky food consumption behavior (Justesen , Freyberg, Schultz, 2020).

On average, almost 80% of diabetes mellitus sufferers have type 2 DM. This means that an unhealthy lifestyle is the main trigger for the increasing prevalence

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of DM. There are also several risks from diabetes mellitus, namely age, gender, obesity, hypertension, genetics, food, smoking, alcohol, and lack of physical activity (Rahmawati, 2021).

People's dietary behavior is largely determined by the community, family and individual cultural factors, food availability and the prices. The taste for sweetness begins early in life and persist throughout childhood (Paglia, 2019). This matter explains why it gives a sweet taste Sugar consumption in society is quite high. However, excessive sugar consumption is known to be a risk factor for obesity and DM (Andrews, & Lanaspa, 2017).

Based on data of National Institute of Health Research and Development of The Indonesia Ministry of Health (2018) shows that the proportion of sweet food consumption in aged over three years was reported at 40.1%. Meanwhile, the physical activity ratio is inadequate in people over ten years old is 33.5%. The Health Survey results are not surprising Indonesia's policy in 2018 shows as much 14.5% of Indonesia's population is over the age of 18 years of obesity.

There are 11.8% of the Indonesian population consumes sugar above the recommended limit. The results of this survey also show that there are variations in the types of food sources of sugar consumed by respondents, including granulated sugar, brown sugar, jam, candy, syrup, chocolate, jelly, gelatin, honey and sweeteners. Based on the results of Riskesdas 2018 in (Infodatin to Remain Productive, Prevent and Overcome Diabetes Mellitus, 2020), 40.1% of participants ate sweet foods >1 time/day and 61.3% of participants drank sweet drinks >1 time/day.

Research (Lennerz et al., 2013) shows that periodically consuming foods with a high glycemic index, such as sugary foods and drinks, increases the activity of brain areas related to food intake, rewards, and cravings. By eating delicious foods such as foods high in sugar, dopamine will be released (a neurotransmitter that plays a role in the reward system), which then provides a feeling of satisfaction after consuming the food (Freeman et al., 2018). Through tests conducted on animals, it was concluded that consuming delicious foods (foods high in fat or sugar) can strongly stimulate the body's reward system, encouraging excessive intake of these delicious foods (Hoch et al., 2014).

Research conducted on animals shows that consuming sugar produces the same effects as those produced when using drugs; changes mood, and causes eaters to continue looking for sugary foods to provide satisfaction (DiNicolantonio et al., 2018). Drug use stimulates the reward system so intensely, causing the number of dopamine D2 receptors to decrease. As a result, it takes more of the drug to achieve the same rewarding effect. If this is not fulfilled, cravings and withdrawal symptoms will appear.

Similar mechanism applies when someone consumes sugar regularly (Benton & Young, 2016), where low dopamine levels due to long-term sugar consumption give rise to the desire to eat larger amounts in the hope of restoring dopamine levels and stabilizing mood (Jacques et al. al., 2019). We can call this condition sugar addiction or addiction. We already know enough about the physiology behind why people consume large amounts of sugar. However, little information is available that provides insight into why people consume more sugar than their bodies subjectively need. For these above-mentioned reasons, researchers

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are interested in conducting research aimed at exploring the views and experiences of Indonesian people regarding excessive sugar consumption behavior. Sugar consumption referred to the consumption of added sugar, namely sugar added to food during processing, preparation and at the dinner table (FDA in Kim et al., 2021).

RESEARCH METHODS

This research uses a qualitative design, namely a narrative data collection method (data in the form of words) systematically and thematically (Berman et al., 2016). The approach used in this research is phenomenology whose main focus is the lived experiences of the research subjects.

The population in this study were adult community members in the Tangerang Regency and West Bandung Regency, Indonesia who stated that they consumed sugar. Participants involved in this research were selected using a purposive sampling method, namely a sampling technique from the population through special considerations or certain characteristics, so that researchers determine whether they are suitable to be used as samples (Jatmiko et al., 2015). The following are the inclusion criteria considered in selecting the sample: 1) adult men and women (aged 18 years or more), 2) Indonesian citizens, 3) consume sugar regularly every day.

The main instrument used in collecting data for this research was the researcher himself. The data collection process was also carried out using tools in the form of cellphones and interview guides. The function of the cellphone is to record conversations between researchers and key informants during the interview process. To record conversations during interviews, researchers used the voice recorder application on the researcher's cellphone. The interview guide contains questions that help guide researchers in asking questions and gathering information from key informants.

After the researcher received a certificate of ethical suitability from KEPK FIK UNAI (No.251/KEPK-FIK.UNAI/EC/VIII/22), the researcher searched for participants in the Kelapa Dua District area. Prospective participants who meet the inclusion criteria and are interested in participating in the research are given an informed consent form to fill out while the researcher provides an explanation of the research being carried out. The interview was conducted immediately afterwards at the place where the interviewer and participant met, while the conversation was recorded.

Analysis of data obtained from the interview process was carried out using Colaizzi's methodological interpretation (Speziale & Carpenter, 2011), which includes the following steps: 1) describing the phenomenon to be researched, 2) collecting participants' descriptions of the phenomenon being researched, 3) reading the description participants regarding the phenomenon under study, 4) selecting significant statements, 5) finding the meaning of significant statements, 6) organizing the found meaning into theme groups, 7) writing in-depth descriptions, and 8) returning the descriptions to participants to obtain validation. The final step is carried out by participants who provide their cellphone numbers.

RESULT

Key Informants

There were 13 people who met the criteria to become key informants of this research. The thirteen key informants had expressed their willingness to voluntarily participate in this qualitative research. The participants had diverse demographic backgrounds as shown by table 1 below.

Table 1. Demography of the Key Informants

Initial	Gender	Age	Education	Profession/Work
KI 1	Male	20	High school	Security
KI 2	Male	61	High school	Contractor dan Consultant
KI 3	Female	37	Diploma 3	Online driver
KI 4	Male	35	Vocational High school	Ground worker
KI 5	Female	38	High school	House wife
KI 6	Male	20	High school	College student
KI 7	Female	43	Junior High school	House wife
KI 8	Male	53	Vocational High school	Businessman
KI 9	Male	41	High school	Security
KI 10	Male	53	Vocational High school	Security
KI 11	Male	50	Vocational High school	Businessman
KI 12	Female	58	Bachelor	Administration
KI 13	Female	38	Vocational High school	House wife

Community members in Indonesia were found to have sufficient knowledge regarding the dangers of excessive sugar consumption (Yunita. U. R, Khusun H, Witjaksono, 2024). Furthermore, Prada, Saraiva, Garrido, Rodrigues, Lopes (2020) found that the Portuguese general community has relevant knowledge about the danger of excessive sugar consumption. The result of their study emphasized the need to implement effective strategies to reduce sugar intake. The sources of information obtained by key informants in this research were from the health service provider team and from the mass media (table 2).

Table 2. Attribute Data of Adult Knowledge on Sugar

Sources of information about sugar	**Health professionals:** Physicians, nurses, health professionals, friends
	Media: books, social media, research engine, health promotion materials

Obtained from the verbatim data, emerged 2 themes , 5 sub-themes, 11 categories, and 17 sub categories (see table 3).

Table 3. The Result of a Qualitative Data Analysis

Sub Category	Category	Sub Theme	Theme

Coffee Tea Milk Soft drinks	Drinks	Forms of sugar intake	Sugar consumption habit filling up experience to form perception on sugar
Biscuit Cakes and sweets	Food		
Snacking In between meals	Sugar cravings Used to it Feeling healthy Low blood sugar	Reasons of sugar consumption	
Response to medical check-up Medical check up results DM prevention For immunity	No money Health awareness	Reasons of sugar consumption avoidance	
	Diabetes prevention	Motivation to reduce sugar consumption	
• Medical check up • Health promotion: the danger and benefits of sugar, how to reduce sugar, natural sweetener alternatives • Health consultation	Information seeking	Action to sugar consumption pattern	Experience and knowledge developed awareness on sugar consumption habit pattern
Reduce sugar consumption Exercise	Life style modification		

DISCUSSION

Coffee, milk and tea; is a sugary sweet drink consumed by the participants. These results are similar to those obtained by the 2007 National Socio-Economic Survey (in Sartika et al., 2022) which showed that of all types of sugar-sweetened drinks, ready-to-drink coffee, coffee milk, tea and chocolate milk; is the variant most purchased and consumed by the Indonesian population. Half of the participants interviewed also liked consuming sources of sugar intake in the form of food.

This study reveals that adults frequently consume foods and beverages containing sugar, whether in the form of pure sugar or sugar-based ingredients. The patterns of sugar consumption varied among individuals, influenced by strong cravings for sugary foods and drinks, their habitual consumption of such items, or simply their overall sugar intake.

Based on the interview, investigators found that participants often consumed sugary foods or drinks both between meals and after meals. Additionally, respondents sometimes struggled to manage their sugar intake due to the wide variety of available sugars. It was observed that adults tended to consume more

sugary items outside of their homes compared to inside, with the average respondent consuming sugar-containing foods or drinks on a daily basis.

Several key informants stated that they had a desire to change their sugar consumption patterns by stopping, reducing, or switching to alternative sweetener products. desire to change their sugar consumption, some of the participants also stated that the motive behind their desire was the results of a health examination which showed a health problem. Indications of health problems they experience become a call to prevent diabetes and maintain their health and immune system.

The desires and motives of the participants above show that these participants have the motivation to make changes in their sugar consumption patterns. Uno (in Ena & Djami, 2020) defines motivation as a drive both internal (or intrinsic) and external (or extrinsic) that exists within a person to make changes in behavior. According to Gunarsa (in Ena & Djami, 2020), intrinsic motivation is a strong impulse or will that originates from within a person. The desires and motives of the participants that were attached previously are intrinsic motivation that originates from within the participants which can encourage them to change their sugar consumption patterns. Although some participants expressed a desire to change their sugar consumption patterns, most participants admitted that they had no experience in changing or improving their sugar consumption patterns.

Several key informants said that he did not know what he needed to do to stop his addiction to consuming sugar. Consuming sugar has become a habit, making key informants found it difficult to reduce his sugar consumption. Habit or habit is a behavior that is carried out with minimal cognitive effort (Jager, 2014). Habits are difficult to change because they can automate certain behaviors, especially if the habit is a bad habit. A bad habit can be defined as a habit that may produce something positive in the short term, but in the long term the habit produces negative results. Bad habits, including habit of consuming sugar, are difficult to change because cognitive information about the negative outcomes of the habit will hardly influence automated behavioral scripts.

Because they feel they are still healthy, there are key informants who do not feel the need to reduce their sugar consumption. There is even a key informant who has tried to change his sugar consumption pattern by replacing the granulated sugar product he usually uses for his drinks with an alternative sugar product. However, the key informant then stated that he had now returned to his previous consumption pattern due to his condition of low blood sugar levels. In an article published on the WebMD website (Goldman, 2021), it is said that consuming large amounts of simple sugar can cause blood sugar levels to increase sharply. The body will also release a lot of insulin to compensate, which in turn will actually cause blood sugar levels to drop drastically.

Kurt Lewin's theory of behavior change (in Adventus et al., 2020), behavior is defined as a state of balance between driving forces and restraining forces. If there is an imbalance between these two forces, a person's behavior can change. The things that prevented participants from changing or improving their sugar consumption patterns that were mentioned previously can be said to be restraining forces that prevent changes in sugar consumption behavior. According to Lewin, in order for behavior change to be successful, negative restraining forces that move

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away from the current state of balance need to be reduced (in Mellita & Elpanso, 2020).

Extrinsic motivation and intrinsic motivation which have been explained previously, when fitted into Kurt Lewin's theory of behavior change, are the driving forces. According to Lewin (Adventus et al., 2020), this driving force needs to be increased to distance individuals or groups. If the driving force increases while the restraining force decreases, a change in behavior can occur. By increasing information and knowledge regarding correct sugar consumption patterns and reducing the reasons or obstacles that cause inappropriate sugar consumption to continue, someone who regularly consumes excessive sugar is expected to be able to change this behavior.

SUMMARY

1. The sources of sugar consumed by the key informants were quite varied. The thirteen informants regularly drank sugary drinks. Some participants also like to eat sugary foods.
2. Although some participants expressed a desire to change their sugar consumption patterns, the majority of participants had no experience in changing or improving their sugar consumption patterns. There was 1 participant who already had experience in changing his sugar consumption pattern, but now he returned to his previous sugar consumption pattern.
3. Each participant had reasons that prevented them from changing or improving their sugar consumption patterns.
4. Participants want to educate themselves about the correct consumption of sugar. The material that participants want to know and the sources of information that participants want to use are quite diverse.

The implications of this research provide suggestions, namely:

1. Indonesian people, especially those who like to consume sugar, should be guided to self-awareness and to modify their sugar consumption patterns so as not to overdo it, and try to enrich themselves with information and knowledge about correct and healthy sugar consumption.
2. For the development of nursing education, nurses, one of whose main roles is as an educator, should be able to foster motivation and educate the public to implement correct and healthy sugar consumption patterns.
3. For other researchers to be able to continue research that tests the role or effectiveness of certain educational materials using certain methods, or certain interventions in changing or improving people's sugar consumption patterns.

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