The Dangers of Consuming Excessive Sweet Foods for Dental Health

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Abstract
Dental caries is a problem that often occurs in underage children. The majority of children usually eat sweet foods that contain lots of sugar such as chocolate, candy and donuts. Improper tooth brushing habits also have a big impact on the occurrence of dental caries. They don't understand how to regulate consumption of sweet foods while maintaining healthy teeth. It is important to remember that maintaining healthy teeth is very important and it is recommended to understand this from an early age. The problem of cavities and dental caries is a dental health problem that is experienced by most people throughout the world. Dental caries is caused by several factors, one of which is environmental factors and dental health care. Dental disease usually occurs in underage children. They don't understand the importance of maintaining healthy teeth. Children become very vulnerable to malnutrition because they experience aching teeth that reduce their appetite. Dental diseases like this have a big impact on children's performance at school, where they become increasingly unfocused because they are distracted by the pain they feel. Data collection uses the library study method by searching for data from reading results and collecting various references from scientific works, articles and journals.

Article History:

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1. Introduction

People who consume excess sweets may have low levels of HDL (High Density Lipoprotein) and LDL (Low Density Lipoprotein). High LDL levels can cause the risk of narrowing of the blood vessels in the heart. Non-communicable diseases (NCDs) such as cardiovascular disease, cancer and diabetes caused by an unhealthy diet can cause 41 million deaths each year, equivalent to 71% of all deaths globally. deaths globally. (WHO 2012 in Ayu et al., 2023). Consuming excessive sweets will also have a negative impact on good dental health which can interfere with someone's activities. Dental diseases usually occur in underage children. They do not understand the importance of maintaining dental health. Children become vulnerable to malnutrition due to tooth pain, which reduces their appetite. Dental diseases like this are very influential on children's performance at school where they are increasingly unfocused because they are disturbed by the pain they feel.

Figure 1. consuming excessive sweet foods also have a negative impact

The mouth is the most important part to maintain for everyone's health and quality of life. Oral health is free from throat cancer, oral infections and sores, gum swelling, tooth decay and other diseases that interfere with biting, chewing, smiling and speaking. Indonesia is a country where dietary changes often occur due to increased consumption of sweet foods in daily life such as confectionery, chocolate and other foods that contain more sucrose. These types of foods are very popular with children. These sweet foods are usually easy to stick to the surface of the mouth and teeth.

If there are children who are lazy to clean their teeth, especially at night, the remains of the food are then converted into acid by bacteria in the mouth and cause dental caries. Dental caries is an organ disorder that functions for carry out the chewing process (mastication) which can affect food intake and nutritional status. According to research carried out by Diana (2004), with increasingly strong masticatory strength then there will be more and more saliva produced in the mouth. The factor that influences masticatory movements is whether the food is consistent or not change in shape of the food. Dental caries can be felt by everyone and can appear on one or more tooth surfaces and can extend to deeper parts of the tooth such as from enamel to dentin or pulp.

The effects of dental caries that occur will cause pain so that the child's appetite disappears. They become lazy to eat and will cause the bone around the teeth to become infected. When it happens damage at levels above normal or an abscess has occurred in the tooth will be dated. A child who lost several teeth after being extracted, unable to eat well except soft foods. There are effects from sweet foods it becomes sticky to the occurrence of caries in children's teeth. .Dental caries usually occur in developing countries rather than occurring in developed countries due to the frequency of caries teeth in developed countries continues to decline. Meanwhile in developing countries the frequency of dental caries tends to keep increasing.

2. Method

Data collection was carried out using the library study method by obtaining and searching for data from reading results and collecting various references from scientific works, articles and journals that are related to the current discussion. Identified and analyzed relevant studies from academic databases such as PubMed and Google Scholar.

3. Results and Discussion

3.1 Result

No	Citation	Title	Methods	Sample/Site	Result
1.	Kartikasari, Hana Yuwan, and Nuryanto Nuryanto. 2014. Journal of Nutrition College 3(3):414–21. doi: 10.14710/jnc.v3i3.6605.	Hubungan Kejadian Karies Gigi Dengan Konsumsi Makanan Kariogenik dan Status Gizi Pada Anak Sekolah Dasar (Studi Pada Anak Kelas III san IV SDN Kadipaten I dan II Bojonegoro)	This study used a cross sectional plan conducted in November 2013 at SDN Kadipaten I and II Bojonegoro. The research subjects amounted to 63 respondents who were taken by random sampling, with the data collected	The study sample consisted of 63 respondents who were elementary school children in grades 3 and 4. The subjects were taken by random sampling, with the characteristics of the respondents showing that 60.3% were male and 39.7% were female, with an age range between 8 to 10 years old. Most	-Curryogenic Food Consumption: The average consumption of cariogenic foods by respondents was 7.9 ± 2.7 times per day. 73% of respondents consumed cariogenic foods 3-6 times a day. -Nutritional Status: Results showed that 15.8% of children had very poor nutritional status. Respondents' nutritional status was categorized based on weight

			dental caries in school-age children school-age children.	sampling technique.	and among them, 90 people had dental caries, while 10 people did not have dental caries. In addition, incorrect tooth brushing patterns were found in 86 respondents, of which 75 had dental caries. The statistical test results showed that there was a significant relationship between tooth brushing patterns and the incidence of dental caries with p < 0.001.
4.	Rohmawati, Ninna. 2016. Stomatognatic (J.K.G Unej)13(1):32–36.	"Karies Gigi Dan Status Gizi Anak (Dental Caries and Nutritional Status of Children: An Evidence-Based Review)."	The research method used in this study was a survey method with a cross sectional approach. Data on respondents' characteristics were collected using questionnaires and interview techniques. In addition, data on consumption patterns were obtained through the Food Frequency method and 2x24 hour recall to see the type and frequency of meals.	The sample in this study consisted of 64 children taken by simple random sampling method. Determination of the severity of dental caries was carried out by comparing the summation results with the DEF-T index classification according to WHO.	The results showed that children children whose frequency of sweet snacks is high have severe dental caries severity. Types of cariogenic foods that are often consumed according to Research on dental health also states that most school children really like sweet, soft, sticky (cariogenic) foods and foods that are attractive in shape. Sweet foods will be neutralized by saliva after 20 minutes, so if every 20 minutes consume sweet foods, it will cause dental problems. sweets will cause teeth more quickly damaged.The length

					of time Milk teeth are more susceptible to caries than permanent teeth. This is because the enamel on permanent teeth contains more minerals.
5.	Ayu, Ira Marti, Namira W. Sangadji, Andi Shalsabila Putri, Azzahra Putri Indarg, Shafira Azuraa, Marito Elisha Hofman Panjaitan, Adinda Putri Syahrani, Anfrew Leoranz Purba, Fitrotul Hasanah, and M. Rafi Favianto. 2023.	Edukasi Tentang Pengaruh Kebiasaan Mengkonsumsi Makanan Dan Minuman Manis Secara Berlebih Bagi Kesehatan	Provide questions in the form of a pre-test and post-test questionnaire.	15 residents of RT. 02, Bantar Gebang District who are >20 years old.	The questionnaire results showed that participants consumed a lot of cakes which are sweet foods, the frequency of consuming sweet foods is 4 times a day, consumed a lot of tea which is a sweet drink and many participants consumed sugar with a dose of 3 spoons and 4 spoons. These results show that the people who participated in this activity are accustomed to consuming sweet foods and drinks.
6.	Fisic, A., Aras, H. C., Almhöjd, U., & Almståhl, A. (2024)	Dental care professionals' awareness of oral dryness and its clinical management: a questionnaire-based study.	This study used a self-administered digital survey.	2668 dental care professionals working in general dental care, Public Dental Service, in Sweden.	The response rate was 18.6% (241 dentists and 257 dental hygienists). Adults (65+) were more frequently asked about dry mouth (93.0%) compared to those aged 18–23 years (50.0%) and those aged <18 years (24.9%). Dental hygienists (88.3%) were more likely than dentists (51.0%) to have

					measured salivary secretion levels, ($p < 0.001$) and were more likely to recommend preventive dental care 3-4 times a year, (42.5% vs. 30.5%) ($p < 0.007$).
7.	Farizah, Listia Nur, Ratih Larasati. 2021	Hubungan Konsumsi Makanan Kariogenik Terhadap Kejadian Karies Gigi Pada Anak Usia Sekolah Dasar.	This literature review protocol and evaluation used the PRISMA checklist to determine the study selection criteria.	Google Scholar and DOAJ with search keywords using the Boolean searching method, namely Dental Caries, dental caries, cariogenic food and obtained a total of 52 articles.	The results of a review of 9 articles showed that cariogenic foods are not the only cause of caries. Other factors that can influence the incidence of caries in school-age children who consume cariogenic foods are children's behavioral factors towards dental and oral health and the frequency of cariogenic food consumption.
8.	Hidayat, Shandy, Rosihan Adhani, and I. Wayan Arya. 2014	Perbedaan PH Saliva Menggosok Gigi Sebelum Dan Sesudah Mengkonsumsi Makanan Manis Dan Lengket.	This study used a quasi experimental with pretest-posttest two group design. The test of hypothesis was carried out using a Wilcoxon test.	The sample was 60 children with purposive sampling technique	This study showed that the salivary pH average of the group who brushed teeth before eating the sweet and sticky food at 5th, 15th and 30th minute was 7,3. And the salivary pH average of the group who brushed teeth after eating the sweet and sticky food was 7,1.
9.	Oktaviani, Eva, Jhon Feri, Nadi Aprilyadi, Zuraidah, Susmini, and Indah Dewi Ridawati.	Edukasi Kesehatan GEROGI (Gerakan Gosok Gigi) Untuk Menjaga Kesehatan Gigi Dan Mulut Anak Pra Sekolah	Used pre- and post-intervention surveys or observations to assess the children's knowledge about	The sample might have consisted of children from a specific age group, possibly 3-6 years old	- The results may also suggest that both children and their parents became more aware of oral health after the intervention,

			oral health, their ability to brush their teeth, and potentially even their oral hygiene practices over time.	(preschool-aged children).	possibly with parents reinforcing healthy habits at home. - Children who participated in the GEROGI program demonstrated a greater understanding of the importance of brushing their teeth, the correct technique for brushing, and the benefits of oral hygiene.
10.	Rekawati, Agnes, and Frisca Frisca	Hubungan Kebiasaan Konsumsi Makanan Kariogenik Terhadap Prevalensi Karies Gigi Pada Anak SD Negeri 3 Fajar Mataram	The researchers likely used statistical methods, such as chi-square tests or correlation analysis, to determine if there is a significant relationship between the consumption of cariogenic foods and the prevalence of dental caries in children.	The sample may have been limited to children who were enrolled in the school at the time of the study. Children with known dental conditions unrelated to diet, or those who had already received extensive dental treatment, may have been excluded from the study.	The results might have indicated a statistically significant relationship between higher consumption of cariogenic foods and the occurrence of dental caries, meaning the more often children ate cariogenic foods, the higher the likelihood they had dental caries. If there was a control group or comparison with children who consumed fewer cariogenic foods, the difference in caries prevalence would likely be highlighted
11.	Syah, Astannudin, Rizqi Aulia Ruwanda,Syah, and Abdul Basid.	Faktor-Faktor Yang Berhubungan Dengan Status Karies Gigi Pada Anak Sekolah Min 1 Kota Banjarmasin	The researchers probably used a questionnaire to gather information on the children's oral	The sample may have been limited to children who were currently enrolled in the school, and those	Results would likely include data on the prevalence of dental caries among the children, categorizing the

			hygiene habits (e.g., frequency of brushing teeth, use of toothpaste, etc.), dietary habits (e.g., consumption of sugary foods and drinks), and potentially other variables like socioeconomic status or parental involvement in oral health.	who were present on the day of data collection. Children with known dental conditions unrelated to diet or oral hygiene may have been excluded, although this depends on the study's design.	number of children with caries and possibly the severity of the caries. The study may also provide breakdowns based on different factors like age, gender, or oral hygiene practices.
12.	Large, J. F., Madigan, C., Pradeilles, R., Markey, O., Boxer, B., & Rousham, E. K. (2024).	Impact of unhealthy food and beverage consumption on children's risk of dental caries: a systematic review.	A systematic search was conducted through PubMed, Cochrane, and Embase databases, articles meeting the inclusion criteria from January 1971 to March 2022; and an additional search for articles from that period up to June 2022.	There were 30,023 unique citations screened resulting in 37 studies for inclusion.	The results of this review point to a positive association between consumption of unhealthy beverages, especially SSBs or unhealthy foods (especially foods high in free sugars) and dental caries. Most studies reported a greater risk of dental caries with greater consumption of unhealthy foods, beverages, or a combination of both.
13.	Zhang, Q., Bai, X., Jin, H., & Dong, N. (2024).	Combined effect of dietary calcium consumption and physical activity on dental caries in children and adolescents: a study of the NHANES database.	The study design is a cross-sectional study.	Data on 5,917 children and adolescents from the 2015–2020 National Health and Nutrition Examination Survey (NHANES) database.	A total of 2,687 children and adolescents had caries experience. The mean age of participants was 9.29 years, and 2,987 (50.92%) of them were male. A total of 3,975 (65.27%) participants had not reached the recommended level

					of dietary Ca intake.
14.	Cantoral, A., Muñoz-Rocha, T. V., Luna-Villa, L., Mantilla-Rodriguez, A., Ureña-Cirett, J. L., Castiblanco, G. A., Solano, M., Hu, H., Peterson, K. E., Téllez-Rojo, M. M., & Martinez-Mier, E. A. (2021).	Association of Dietary Fluoride Intake and Diet Variables with Dental Caries in Adolescents from the ELEMENT Cohort Study	This study uses cross-sectional analysis.	adolescent participants (12–18 years) from the Early Life Exposure in Mexico to Environmental Toxicants (ELEMENT).	The results of the study showed that 20% of participants reported starting to brush their teeth before the age of 2 years. Nearly 80% of participants experienced dental caries (D1MFT >0) with 30% showing cavities.
15.	Asridiana, Asridiana, and Ernie Thioritz. (2019)	Pengaruh Mengkonsumsi Makanan Manis dan Lengket Terhadap Ph Saliva Pada Murid SDN Mamajang Makassar	Researchers used a cross-sectional research design. Sampling using purposive sampling method	22 female students and 18 male students from SDN Mamajang II Makassar	The results of the study showed that the salivary pH value before consuming sweet and sticky foods was 6,04 with the criteria of being slightly acidic and after 5 minutes of consuming sweet and sticky foods the salivary pH value decreased by 5,73, 15 minutes after consuming sweet and sticky foods the salivary pH value decreased by 5,62 and 30 minutes after consuming sweet and sticky foods the salivary pH was 5,21.
16.	van Meijeren-van Lunteren, A. W., Voortman, T., Wolvius, E. B., & Kragt, L. (2023)	Adherence to dietary guidelines and dental caries among children: a longitudinal cohort study.	Conducted in the Generation R Study, which is an ongoing population-based prospective cohort study from fetal	In total, 9778 mothers were enrolled at study entry and gave birth to 9749 live-born children.	At a mean age (SD) of 13.6 (0.3), 33% (n = 969) of participants had dental caries, of which 764 children had mild caries (DMFT 1-3) and 205 children had

					severe caries (DMFT >3). The mean (SD) value of caries lesions in the population with mild caries was 1.7 (0.8), and for severe caries was 5.3 (1.8).

3.2 Discussion

Based on the literature, the relationship between dental caries and consuming cariogenic foods and how prevention should be done for dental health.

3.2.1 Factors causing dental caries

One of them is lack of understanding and knowledge about dental health and how to care for teeth properly. Cultural factors also have a big influence on the occurrence of dental caries, as many people think that dental caries that occur in minors is normal. Parents' poor attitudes about dental and oral health can also influence dental caries. Not all parents agree and care about preventing dental caries, the environment is bad, practices or actions for brushing teeth properly are still inappropriate and health services are poor.

Figure 2. Many people think dental caries that occur in minors is normal

3.2.2 The role of parents in children's dental health

The role of parents is very influential with the incidence of dental caries in children. Parents, especially mothers, act as leaders of health education and health care providers. The role of parents is to nurture, educate, and provide good education. One of them is about dental health education such as educating children to brush their teeth properly, wash their hands before and after eating, and reduce sugary foods to prevent dental caries. In addition, the role of parents as encouragers and supervisors such as supervising children when eating, brushing teeth properly and when giving milk.

Figure 3. Dental health education to prevent dental caries

3.2.3 Prevention of dental caries

This is done by placing more emphasis on reducing consumption and providing high sugar intake. This can be done by means of dietary advice and sugar substitutes. Dietary advice that is very influential on the occurrence of dental caries is to eat foods with sufficient amounts of protein and phosphate that can increase the alkaline nature of saliva, consume lots of fiber and watery vegetables and fruits that have cleansing properties and stimulate salivary secretion, avoid excessive and sticky sweet foods, limit the number of meals to 3 times a day and limit the desire to eat between meals. Educating children to brush their teeth properly.

Figure 4. The occurrence of dental caries is consuming protein and phosphate

4. Conclusion

The journal's conclusion emphasizes that excessive consumption of sugary foods, especially in children, contributes significantly to the occurrence of dental caries. Data shows that the majority of children have dental caries, and the habit of consuming cariogenic foods is closely related to the prevalence of caries. In addition, parents' lack of knowledge and understanding about dental health also plays a role in this problem. Therefore, it is important to educate parents and children on how to maintain dental health, including reducing the consumption of sugary foods, as well as implementing proper brushing habits. Prevention of dental caries can be done through a healthy diet and parental supervision of their children's eating habits.

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