

Unhealthy School Snacks as a Hidden Threat to Cognitive Development of Elementary School-Aged Children

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ABSTRACT

Unhealthy and low-nutrient school snacks are a serious concern in the world of education and child health, especially regarding their impact on students' cognitive development. This study aims to explore how the consumption of unhealthy snacks disrupts students' concentration and impacts the quality of thinking, especially at the age of elementary school children. This research used a qualitative approach with an intrinsic case study research type, conducted at SD X private school located in Pasuruan Regency. The school has a fairly high activity of snacks in the surrounding environment because the location is on the edge of a large highway. Data were collected through interviews with students, class teachers and parents, as well as direct observation in the school environment and canteen. The results showed that students often routinely consume snacks that are high in sugar, contain vetsin, artificial coloring and low in nutritional content. Teachers and parents observed that students get tired easily, lack focus when learning, and concentration and even lead to health problems. The main factors supporting this habit are lack of nutrition education, limited parental supervision and the presence of unhealthy food vendors outside and around schools. This study recommends the need for collaboration between schools, parents and policy makers to create a healthy eating environment as a preventive effort to maintain health and protect the cognitive development of primary school-aged children.

Keywords: Unhealthy snacks, child nutrition, cognitive development, elementary school

1 Introduction

The consumption of unhealthy snacks among primary school-aged children has become an issue of growing global concern. This study shows that most children tend to choose snacks that contain high levels of sugar, MSG and saturated fat [1]. This habit has the potential to have a negative impact on their health, including increasing the risk of obesity and other diseases [2]. In addition, unhealthy food consumption patterns can also affect children's cognitive development, which plays an important role in their learning and growth [3].

In Indonesia, the Food and Drug Administration (BPOM) identified that many snacks available in school settings do not meet the nutritional standards set by health authorities. This raises concerns regarding the quality of their health food in the long run. Therefore, concrete steps are needed to improve healthier food choices, both through early nutrition education and stricter regulation of food products sold around schools. This study aims to explore the relationship between unhealthy snack consumption and cognitive development of primary school-aged children, and the implications for their academic performance.

2 Research Methods

This research uses a qualitative approach with an intrinsic case study design that aims to explore in depth the phenomenon of unhealthy snack consumption and its impact on the cognitive development

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of elementary school children in a context at SD X. The intrinsic case study approach was chosen because this case has unique and significant characteristics to be analyzed specifically, without intending to generalize the research findings. The research subjects included six students from grades 4 and 5 who were purposively selected due to their habit of consuming unhealthy snacks, 4 class teachers, two parents, and one school canteen worker.

Data were collected through in-depth interviews, participatory observation in the school environment, and documentation related to academic records and a list of types of snacks available in the school canteen. Data analysis was carried out descriptively qualitatively using the Miles and Huberman model through the process of data reduction, data presentation, and conclusion drawing based on patterns (Hardani et al., 2020). Data validity through source triangulation, member checking and direct involvement of researchers in the school environment. This method allows researchers to fully explore the relationship between unhealthy food consumption and decreased learning concentration and student thinking, as well as reveal the role of the environment and family in shaping children's diets.

3 Result and Discussion

This study found that the majority of students at SD X have a habit of buying unhealthy snacks outside after school hours. Although the school has provided a canteen with nutritious food choices, many students still choose snacks from outside that contain high sugar content, MSG, and artificial colors. This finding was corroborated by direct observation and interviews with several students and teachers at the school. In the interviews, the teachers explained that the main factor that encourages this habit is the location of the school, which is close to a major highway, so street vendors can easily reach the area around the school and offer snacks that attract students' attention. In addition, after school is over, supervision from the school no longer applies and switches to the responsibility of parents. However, many parents cannot immediately pick up their children in a timely manner, leaving an opening for children to buy these snacks.

This condition is possible because students buy food without adequate supervision. Snacks sold outside the school environment are also attractive to children because of their attractive packaging, strong flavors, and affordable prices [5]. Children are naturally attracted to foods that look and taste good, even if they are low in nutrients or may even be harmful to their health [6]. Lack of nutrition education from an early age means they don't realize the long-term impact of unhealthy food consumption on children's health and cognitive development [7]. This situation poses a challenge for schools in controlling students' snacking habits outside of school hours before being picked up by parents. Although healthy canteens and socialization have been implemented, their effectiveness still depends on parental support and supervision. Interviews with several class teachers showed that the consumption of unhealthy snacks does have an impact on students' concentration, thinking ability and health. One teacher explained that some students who often buy snacks outside school are less able to focus and are not focused when receiving lessons. It was also explained that students are now susceptible to illness because of their lack of immunity. These findings suggest that collaboration between schools, families, and policy makers is needed to create a healthier consumption environment for children.

This phenomenon can be explained through the theory of behaviorism from B.F Skinner, which states that human behavior is formed through environmental stimuli that are strengthened by reinforcement [8]. In this case, snacks that have strong flavors, flashy colors, and affordable prices are factors that encourage children to continue to be interested in buying snacks outside of school, even though they are not healthy. Consumption of foods high in sugar, MSG and artificial colors has a negative impact on children's health and cognitive abilities. Research by Roberts et al., (2022) revealed that sugary and processed foods can impair brain function, including memory and concentration. According to Fauziah et al., (2023) also found that children who often consume unhealthy snacks are more easily tired and have difficulty focusing while learning.

In addition, Brofenbrenner's ecological systems theory suggests that children's behavior is influenced by various environmental systems, such as family, school, and community [11]. Lack of parental supervision and the location of schools close to hawkers are external factors that reinforce unhealthy food consumption habits. Recent research by Santi dan Candra (2022) confirmed that nutrition education involving parents, teachers and the community is more effective in changing children's diets than simply providing a healthy canteen. Therefore, schools need to not only offer nutritious food, but also educate students continuously and collaborate with parents and related parties to create a healthier

consumption environment [13]. In addition, regulations and supervision from local governments need to be strengthened to control the circulation of unhealthy snacks around schools.

Consumption of excessive amounts of MSG and sugar in elementary school-aged children can adversely affect their brain function and physical health. MSG as a flavor enhancer risks causing central nervous system disorders, such as headaches and dizziness [3]. Meanwhile, high sugar intake from snacks such as candy, sugary drinks and sweet cakes can cause a rapid surge of energy followed by a drastic decline (sugar crash), making children easily drowsy and lose stamina while studying [14]. In addition to distracting focus, this consumption pattern also weakens the immune system, increasing the risk of diseases such as flu, indigestion and mouth ulcers. Therefore, more attention is needed to the nutritional content of children's snacks and preventive measures to reduce the consumption of harmful additives among elementary school students.

4 Conclusion

The results showed that the habit of consuming unhealthy snacks on a regular basis by SD X students has a direct impact on decreased concentration, fatigue, and impaired thinking while learning. Observations and interviews with several class teachers and parents showed that students were more easily distracted, less focused in receiving lessons, and experienced academic decline. In addition, some students who most frequently consume snacks outside school are easily sleepy in class, easily get stomachaches which are strongly suspected to be caused by the high sugar content, MSG, and artificial colors in the snacks they consume. The main factors influencing this habit are the school's proximity to street vendors, limited parental supervision after school hours, and the attractiveness of the snacks' taste and appearance. Although schools have made efforts to provide healthy canteens and conduct socialization on nutritious diets, these interventions are not optimal without active support from parents and stricter supervision from policy makers. This finding is consistent with behaviorism and ecological theories of child development, which emphasize that the environment plays a major role in shaping students' consumption habits. Therefore, a more integrated approach is needed to create a healthier eating environment for primary school students.

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