

DENTINO
JURNAL KEDOKTERAN GIGI
Vol X. No 1. MARCH 2025

**CORRELATION BETWEEN PICKY EATER BEHAVIOR AND RAMPANT
 CARIES IN PRESCHOOL CHILDREN IN SURABAYA**

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ABSTRACT

Background: The dental and oral health of the Indonesian people is still something that needs to be seriously viewed by health workers, both doctors and nurses. In Indonesia, the prevalence of caries in children aged 3-4 years reaches 81,1%, root caries reaches 13,3% and caries ages 5-9 reaches 92,6%, root caries reaches 28,5%, indicating that caries in Indonesia has entered the high category. Caries rampant is caused by multifactorial, where one of these factors is children's eating behavior, children's diets have various patterns, one of which can be seen from children who have picky eater behavior. **Purpose:** This research aims to determine the relationship between picky eater behavior and the incidence of caries ramping in preschool children. **Methods:** This research was carried out using an observational analytical method with a cross sectional approach. **Results:** this study show that preschool age children dominated by women 61,1% and boys 38.9%.children have picky eater behavior as much as 75,0% and caries incidence 86,1%. The study results showed a relationship between picky eater behavior and the incidence of caries rampant in preschool-aged children at Kindergarten Surabaya in 2024 with a chi-square statistical chi-square($p=0,002$ value). **Conclusion:** Based on the research conducted, it is hoped that parents and schools will pay attention to children's eating behavior and dental and oral health.

Keywords : Picky Eater, Preschool Age, Rampant Caries

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INTRODUCTION

In Indonesia, the prevalence of caries in children aged 3-4 years is 81.1%, root caries 13.3%, and for ages 5-9, caries prevalence reaches 92.6%, with root caries at 28.5%, indicating that rampant caries in Indonesia has entered a high category. Dental and oral health issues, particularly dental caries, are diseases affecting nearly half of the world's population, approximately 3.58 billion people, according to WHO.¹ Rampant caries is a multifactorial disease, where factors interact with one another. Some factors contribute to the occurrence of dental caries in children, including diet, oral hygiene, and inappropriate habits such as food retention and prolonged bottle-feeding.²

Picky eaters are children with a highly selective eating behavior, lacking a balanced diet that includes vegetables, fruits, and rice, and preferring sweet foods.³ Sweet foods often contain high levels of sugar or sucrose, which efficiently promotes microorganism growth and is quickly metabolized to produce acids. When food adheres to tooth surfaces and is not removed, it generates more acid, increasing the risk of dental caries.

METHODS

This study is a quantitative observational analytic study using a cross-sectional approach, along with a

questionnaire survey to collect data from the samples. The research was conducted at TK Islam Darut Taqwa, Dukuh Kupang, Surabaya, in May 2024, with the research ethics number 89/SLE/FK/UWKS/2024. The identified research population consisted of 80 individuals, and a sample size of 44 students was determined through sample calculation. The questionnaire contained operational definitions regarding picky eater behavior, characterized by children consuming an inadequate variety of foods while rejecting certain foods and showing a preference for sweet foods. The questionnaire comprised 15 questions, filled out by the parents of TK Islam Darut Taqwa students. Based on the questionnaire responses, children were categorized as picky eaters if they answered "YES" to more than 50% of the questions, and non-picky eaters if they answered "NO" to less than 50%. The incidence of rampant caries was directly examined by three dentists and recorded using an odontogram.

RESULTS

Table 1. Gender Frequency

	Frequency	Percent (%)
Male	14	38,9%
Female	22	61,1%
Total	36	100,0%

Based on the frequency test results in the table above, the gender characteristics of the respondents show that the number of female students is higher, at 61.1%, compared to male students, at 38.9%.

Table 2. Age Frequency

	Frequency	Percent (%)
4 years	6	16,7%
5 years	9	25,0%
6 years	21	58,3%
Total	36	100,0%

Based on the frequency test results in the table above, the age characteristics of the respondents show that most students are aged 6 years (58.3%), followed by 5 years (25.0%), and 4 years (16.7%).

Table 3. Relationship Between Gender and Picky Eater

<i>Picky eater</i>	<i>Picky Eater</i>	<i>Non Picky Eater</i>	Total	ρ -value
Gender				
Male	8 (22,2%)	6 (16,7%)	14 (38,9%)	0,048
Female	19 (52,8%)	3 (8,3%)	22 (61,1%)	
Total	27 (75,0%)	9 (25,0%)	36 (100%)	

The table above indicates that the picky eater category includes 22.2% of male respondents and 52.8% of female respondents, totaling 75.0%. Meanwhile, the non-picky eater category includes 16.7% of male respondents and 8.3% of female respondents, totaling 25.0%.

Table 4. Relationship Between Picky Eater and Rampant Caries

<i>Rampant Caries</i>	<i>Rampant Caries</i>	<i>Non Rampant Caries</i>	Total	ρ -value
<i>Picky eater</i>				
<i>Picky eater</i>	26 (72,2%)	4 (2,8%)	27 (75,0%)	0,002
<i>Non Picky eater</i>	5 (13,9%)	4 (11,1%)	9 (25,0%)	
Total	31 (86,1%)	5 (13,9%)	36 (100%)	

The table above shows that among picky eater respondents, 72.2% experienced rampant caries, while 13.9% of non-picky eater respondents experienced the same. A total of 86.1% experienced rampant caries, and 13.9% did not experience rampant caries.

DISCUSSION

In this study, the statistical test used was the chi-square test. Based on the statistical test, the results showed a significant relationship between picky eating behavior and the incidence of rampant caries at TK Islam Darut Taqwa Surabaya, with a p-value of 0.002. From the questionnaire responses, more than 50% of parents answered "YES," indicating a prevalence of picky eating behavior at 75.0%. Meanwhile, the observation results showed a high prevalence of rampant caries at 86.1%. The sample size included 44 students from TK Islam Darut Taqwa Surabaya, with 28 female students and 16 male students. After excluding 8 students based on exclusion criteria, the total sample was 36 students.

The findings on picky eating behavior among TK Islam Darut Taqwa students showed that 26 parents reported their children displayed picky eating behavior, characterized by a preference for sweet foods such as cakes, chocolates, and candies. Additionally, 15 students exhibited food selection tendencies, and 20 students preferred sweet foods over other types, while 6 students had a habit of holding food in their mouths. Sweet foods and drinks containing sugar quickly reduce plaque pH to a level that causes enamel demineralization. Plaque acidity persists for some time, and it takes about 30-60 minutes for the pH to return to normal (approximately 7). Frequent and repeated sugar consumption prolongs plaque acidity and increases the risk of enamel demineralization. This is compounded by the lack of other nutritional intake due to selective eating behavior.⁴

Eating behaviors during childhood vary on a continuum, from food selectivity, irregular eating, overeating, refusal to eat, negative behavior during meals, slow eating, and tantrums during meals. Food selectivity lies at one end of the continuum, often referred to as "fussy eating." Selective eaters assert themselves by only eating specific types of food.⁵ Neophobia is associated with the refusal to try new foods, while overeating involves consuming large amounts of food quickly, eating until uncomfortable, or eating when not physically hungry. The effects of problematic eating behaviors, such as slow eating, prolonged food retention in the mouth, and food selectivity, remain underexplored as potential causes of rampant caries.⁶

The questionnaire responses revealed that many parents noted their children selected foods, resisted eating, and exhibited irregular eating patterns. They also preferred sweet foods such as cakes and chocolates. This aligns with a study by Anandakrishna (2014), which found that children categorized as picky eaters consumed a limited variety of foods, refused to try new foods, and restricted the intake of vegetables and other food groups, showing a preference for sweet foods.

The prevalence of rampant caries among the sample, based on odontogram examinations, was 86.1%, with only 13.9% not experiencing rampant caries. The high prevalence indicates poor dental health among students. Other factors contributing to rampant caries include a lack of knowledge about proper tooth brushing techniques and timing, as observed during the study. Rampant caries is a dental disease caused by the interaction of bacteria, primarily acid-producing *Streptococcus mutans*, with fermentable sugars on tooth enamel surfaces. It is characterized by one or more decayed teeth (non-cavitated or cavitated lesions), missing teeth (due to caries), and untreated cavities. If left untreated, rampant caries can lead to pain, acute infection, malnutrition, and learning and speech difficulties.⁸ Various risk factors that contribute to rampant caries include high intake of fermentable carbohydrates, poor oral hygiene, prolonged breastfeeding, and behavioral factors as additional causes. The risk factors involved in the development of dental caries are not straightforward, and it is therefore undeniable that caries is multifactorial in nature.⁹

The relationship between picky eating behavior and the incidence of rampant caries shows that food greatly impacts dental and oral health. Soft and sticky foods, such as candy, chocolate, biscuits, and similar items, can damage teeth. Dietary habits are closely related to daily eating behavior. Children's eating behavior varies, with some displaying picky eating habits, preferring sweet foods over staple foods, and holding food in their mouths. These behaviors influence the types of food consumed and, consequently, their impact on oral health.¹⁰ When children are selective with their food and tend to prefer sweet foods, the risk of rampant caries becomes high. Additionally, the habit of holding food in the mouth leads to plaque accumulation, which is further exacerbated by infrequent tooth brushing and poor oral hygiene.¹¹

This study found a relationship between picky eating behavior and rampant caries in preschool-aged children at kindergartens in Surabaya.

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