

The Description of Dental Caries in Children Aged 9 – 12-Years-Old at Rambipuji District Elementary School

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ABSTRACT

Background: Caries is the most common disease among various oral diseases and it still a major problem in developing countries impact on 60% -90% of school-age children and adults. The impact of caries that is not treated in children is toothache, and it caused reduction nutrition in children. Nutrition decrease affected in development of children. **Objective:** to describe dental caries in elementary school students in 9-12 years old in Rambipuji. **Method:** The type of research used was descriptive observational study using cross-sectional data through elementary school students at Rambipuji in the period January 14-11 February 2019. Results: Caries is a top priority in school-age children up to adults. **Results:** The results showed that female students used caries more than 55% and based on dental elements using caries, the mandibular first second molars improved caries more. Conclusion: female students have more caries difficulties. Distribution based on teeth published caries, first and second molars first caries more.

KEYWORDS: Caries, school age, Rambipuji District

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INTRODUCTION

Dental and oral health is an integral part of general health and important for well-being. Dental and oral health is a crucial part to determine children's health status, especially in school age children. This is because school age is an age group with high vulnerability for dental and oral diseases.¹ The presence of dental and oral health problems in school-aged children may impact on the health standard decrease of school-aged children. The most common dental and oral health problem reported in school-age children is dental caries.²

Dental caries is the most common oral disease and a major health problem in developing countries, affecting 60%-90% of school-age children and a number of adults^[1]. The 2018 Basic Health Research or Riskesdas stated that 93 percent of young children between 5-6-year-old was reported to have cavities. This result means that only seven percent of children in Indonesia are free from dental caries.³ Based on Centers of Control disease Prevention (CDC, 2013) in Gayatri et al 2016, dental caries is a preventable disease;

however, it remains a chronic disease occurring mainly in children aged 6 – 11-years-old (25%) and adolescents aged 12 – 19-years-old (59%).⁴

Caries is defined as a disease of the hard tissue of the tooth, called enamel, dentin, and cementum, due to microorganism activity in fermentable carbohydrates. This disease is characterized by demineralization of the hard tissue of the tooth, followed by damage to the organic material, resulting in bacterial invasion, death of the pulp, and the spread of infection to the periapical tissue which produces pain.⁴ The impact of untreated dental caries in children is toothache resulting impaired nutritional absorption in children. Decrease nutritional absorption may affect children's development. Moreover, children may skip their classes due to toothache⁵.

Data obtained from the UKGS Elementary School in Rambipuji stated that the majority of cases are root gangrene cases. Radix gangrene is a condition caused by untreated caries. This research aims to provide information regarding

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the description of dental caries in children aged 9 – 12-years-old in elementary schools in Rambipuji sub-district.

MATERIALS AND METHODS

This is a descriptive observational research using a cross-sectional approach because it aims to describe without implementing any intervention on the research variables and is only carried out at one time. This research was performed at four elementary schools in Rambipuji sub-district, including SDN Rambigundam 02, SDN Rambipuji 01, SDN Kaliwining 03, and SDN Kaliwining 05, from January to February 2019.

The research population was children aged 9 – 12-years-old in elementary schools in Rambipuji subdistrict. The sampling technique was total sampling, which involved all

members of the population as samples. There were 21 students at SDN Rambigundam 02, 45 students at SDN Rambipuji 01, 45 students at SDN Kaliwining 03, and 62 students at SDN Kaliwining 05, totaling 173 students as research subjects.

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RESULTS

In this study, dental caries description was observed and classified according to gender and age. The distribution of students with dental caries was depicted in Table 1. The results showed that there were 106 out of 173 students who were diagnosed with dental caries with a percentage of 61%.

Table 1. Distribution of students based on caries detection

Teeth	n	%
Caries	106	61%
No caries	67	39%
Total	173	100%

Students with dental caries were classified according to gender, shown in Table 2. The results displayed that

students diagnosed with dental caries were more likely to be female students (58 students, 55%).

Table 2. Distribution of caries based on gender

Gender	N	%
Female	58	55%
Male	48	45%
Total	106	100%

Students with dental caries were also categorized based on their age, presented in Table 3. The results demonstrated that students with dental caries were mostly aged 10 and 11-years-old, 49 (46%) and 47 (44%) students, respectively.

Dental caries in students is also grouped based on dental elements, which was shown in Table 4. The results displayed that the teeth experiencing caries were mostly the primary second molars, consisting of 65 dental elements with a percentage of 52%.

Table 3. Distributibased on ages

Ages	n	%
9	8	8%
10	49	46%
11	47	44%
12	2	2%
Total	106	100%

Table 4. Distribution of caries based on the teeth

Teeth	n	%
Central incisive	0	0
Lateral incisive	0	0
Caninus	9	7%
First molar	25	20%
Second molar	65	52%

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Pemenently First molar	27	21%
Total	126	100%

Based on the results presented in Table 5, the distribution of caries in students' aged 9-year-old shows that dental caries mostly occurs in the primary first and second molar in both genders, with percentages of 75% and 50%.

Based on gender between students aged 10-years-old with caries, the number of dental elements in female students is more affected by dental caries. Based on dental elements, caries occurred mostly in the second primary molar both in female and male students with a percentage of 51% and 70%, respectively.

DISCUSSION

Distribution of dental caries in students aged 11-years-old based on gender showed that the number of dental elements in female students is more affected by dental caries. Based on dental elements, majority of caries were present in the second primary molar in 42% of female and 43% of male students.

In students aged 12-years-old with dental caries, the number of dental elements in female students is more affected by dental caries. Based on dental elements, caries occurs in both genders mostly in the second primary molar with a percentage of 60%.

Dental caries is the most common disease among all oral diseases and a major health problem in developing countries, affecting 60%-90% of school-age children and a number of adult^[1]. One of the risk factors for dental caries is poor oral hygiene. Poor oral hygiene may be caused by poor dental hygiene behavior. Children aged between 6 – 12-years-old or school age children had little knowledge and poor behavior in maintaining dental and oral hygiene. Moreover, children generally like eating sweet foods and rarely clean their teeth⁶.

The gender variable displayed that dental caries occurred more often in female compared to male students. According to Luckas and Langers in 2006, the prevalence of dental caries in female was higher compared to male because teeth erupted earlier in female, therefore, female teeth had longer exposure to cariogenic substances⁶. The length of time where teeth surfaces were exposed to glucose is the basis for the formation of dental caries⁷. Dental caries was most commonly developed in the second primary molar teeth. In the deciduous tooth phase, the second molars were very susceptible to caries because of their morphology. The second molars had deep pits and fissures and were not fully united (coalesced). Furthermore, the second molars had wider or flatter interproximal contacts, causing an increase of food retention and plaque accumulation⁸.

CONCLUSION

This research concluded that female students experienced caries more often compared to male. Based on the tooth elements affected by caries, the lower primary second molar teeth had more dental caries.

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