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# The Relationship Between Parental Support on Children Oral Health and Children Dental Caries in Agroindustrial Area of Jember

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ABSTRACT

Dental caries is a multifactorial disease that children experience. Parents' behavior to support children is essential in maintaining children's oral health. The social environment, such as the farming community in the agricultural environment, shapes people's behavior. This study aimed to analyze the relationship between parental support on children's oral health and dental caries in the agroindustrial area of Jember. This study is an analytical observational design with cross-sectional approach. This study was held in SDN Candijati 01 and SDN Biting 04, Arjasa Jember, and attended by 36 pairs of parents and students in 5th grade. Children were examined for the presence of dental caries based on Class 1 caries of Black Classification. A set of questionnaires was given to the parents to assess parental support on oral health. Chi-Square test was performed to find the relationship between dental caries and parental support. The study results showed that Class 1 Caries was present in 100% of children who lacked parental support on oral health. There is a significant relationship between dental caries and parental support on children's oral health in children of the agroindustrial area of Jember

## INTRODUCTION

Dental caries is a disease of the hard tissues of the teeth, namely enamel, dentin, and cementum. This multifactorial disease is also affected by the social environment (Ellakany et al., 2021). Dental caries is a problem that often occurs in children and is often experienced by the Indonesian population in both primary and permanent teeth. Based on the results of the Indonesia Basic Health Research (Riskesdas) in 2018, the prevalence of dental caries in Indonesia is relatively high, around 88.8% (Basic Health Research, 2018).

The elementary school age group, which ranges from 7 to 12 years old, is a group that often experiences caries (Ghasemianpour et al., 2019). One of the factors that has the largest impact on children's growth and the establishment of dental and oral health habits is their family (Misrohmasari et al., 2018). Parents, who are a child's first teachers, can influence their children's oral health practices by leading by example (Zhang et al., 2020). Parents must help, direct, and teach their children how to maintain healthy and proper dental health. Parents are crucial in helping kids adopt good habits for maintaining their oral health. Parents can play a part in preserving their children's oral health by observing how kids behave regarding their dental health (Viana & Utami, 2022).

Children's behavior is significantly influenced by the attitudes and actions of their parents. In particular, maintaining dental and oral health requires the involvement of parents (Misrohmasari et al., 2022). To prevent children's caries, parents must engage in recommended parental oral health support, such as brushing their children's with fluoride toothpaste, taking children to the dentist for preventive care, and limiting sugar consumption (Viana & Utami, 2022)

Most oral conditions have a multifactorial etiology, including biological, social, economic, cultural, and environmental factors. More recently, a growing discussion about the relationship between the environment and oral health has been established (de Abreu et al., 2021). Agricultural environments have specific characteristics that influence an individual's behavior (Moore & Rutherfurd, 2020). Arjasa District, Jember, is one of the main centers of tobacco plantations in East Java (Jember Regency Central Bureau of Statistics, 2021).

Therefore, the researcher is interested in analyzing the relationship between parental support on children's oral health and dental caries in the Agroindustrial Area of Arjasa, Jember, East Java, Indonesia.

## METHODS

This study is an analytic study with a cross-sectional approach. Ethical clearance was obtained from the Committee of Medical Ethics, Faculty of Dentistry, Universitas Jember. Data was obtained from the total population of 5th-grade elementary school children and parents at SDN Biting 04 and SDN Candijati 01. Both schools are located in the agroindustrial area of Arjasa District, Jember Regency, East Java, Indonesia. Parents signed informed consent for this study. In total, there were 36 pairs of students and parents.

Dental caries in this study was examined in accordance with Class I, G.V. Black, and this categorization is based on the location of the caries. Class I dental caries are those that develop in the foramen caecum of the anterior teeth, in the pits and fissures of the premolars, and on the occlusal surface of the teeth. The level of parental support on oral health was reviewed by filling out a questionnaire given to the parents, that can be seen in Table 1. For each question, there were four options that are 'Always', 'Often', 'Rarely', and 'Never'. The parental support score is then categorized into three categories.

Data analysis was carried out in a descriptive way from the frequency distribution table to describe Class I caries that occurs in children and parents' behavior. The Chi-Square test was used in bivariate analyses to determine the relationship between parental support on children's oral health and dental caries in the Agroindustrial Area of Jember.

Table 1. Questionnaire of Parental Support on Oral Health

| No | Questions | Always | Often | Rarely | Never |
|---|---|---|---|---|---|
| 1. | I teach the child to brush their teeth at least twice a day (after breakfast and before bedtime) | | | | |
| 2. | I teach the child to brush the front of the tongue with a forward and backward motion of the brush. | | | | |
| 3. | I teach the child to brush their teeth slowly and gently. | | | | |
| 4. | I help the child to clean hard-to-reach food debris using dental floss. | | | | |
| 5. | I teach the child to rinse their mouth with water after eating or drinking sweets. | | | | |
| 6 | I give toothpaste according to their age. | | | | |
| 7. | I visit the dentist to check my child's dental health at least once every 6 months. | | | | |
| 8. | I often give sugary foods or drinks to my child. | | | | |
| 9. | I accustom my children to consume vegetables and fruit to improve their dental health. | | | | |

## RESULTS AND DISCUSSION

The number of students involved in this study was 36. Most of the respondents are male students. The majority of the respondents were at 10 years of age (66.7%), and the others were 11 years of age. Most parents have elementary and junior high education (66.7%).

This study found that the majority of the student experience Class I caries (88.9%). Most of the children in this study lack parental support for their oral health (55.6%), and only 13.9% of them have high support for oral health from their parents

Table 2. Respondent Characteristic

| Variable | Frequency (n) | Percentage (%) |
|---|---|---|
| **Sex** | | |
| Male | 20 | 55,6 |
| Female | 16 | 44,4 |
| **Age** | | |
| 10 years old | 24 | 66,7 |
| 11 years old | 12 | 33,3 |
| **Parents Education** | | |
| Elementary & Junior high school | 24 | 66,7 |
| Senior high | 10 | 27,8 |
| Higher education | 2 | 5,6 |
| **Class 1 Caries** | | |
| Yes | 32 | 88,9 |
| No | 4 | 11,1 |
| **Parental support** | | |
| High | 5 | 13,9 |
| Fair | 11 | 30,6 |
| Low | 20 | 55,6 |

This study found 88,9% of the children in this Agroindustrial area experienced caries. This result is in accordance with the study by Youssefi (2020), in which the prevalence of dental caries in school-age children group was up to 75.2%. A study by Villalobos-Rodelo in Mexico on the prevalence of dental caries in 6 to 12-year-old School Children in an Agricultural Community also concluded a prevalence rate of over 59.1 % in the agricultural migrant worker parents group.

Class I caries were present in 100% of children of parents who lack of parental support, while 40% of children with high parental support had caries. The Chi-Square test revealed a significant association between parental support on oral health and the occurrence of Class 1 caries (p-value = 0.003 < 0.05).

Table 3. Chi-Square Test Results of Parental Support on Oral Health

| Variable | Class 1 caries n (%) | | Total | p-value |
|---|---|---|---|---|
| | Yes | No | | |
| **Parental support** | | | | |
| Good | 2 (40,0) | 3 (60,0) | 5 (100,0) | |
| Fair | 10 (90,9) | 1 (9,1) | 11 (100,0) | 0,003 |
| Low | 20 (100,0) | 0 (0) | 20 (100,0) | |
| Total | 32 (88,9) | 4 (11,1) | 36 (100,0) | |

Parental behavior is known to influence the well-being and disease outcomes in children. A study by Sabbarwal et al. (2020) concluded an association between parental style and oral health status among children. Authoritative parents who obliged their children to brush their teeth had 34.7% of caries-free children, compared to permissive parents with only 3.3% of the caries-free rate.

A study by Duijster et al. (2015) found that the prevention of childhood dental caries relies on adherence to key behaviors, including twice-daily tooth brushing with fluoride toothpaste and reducing the consumption of sugary food and drinks. The role of parents in children's oral health behaviors is increasingly acknowledged in the dental literature. This not only maintains oral health behavior but also in seeking care for caries preventive interventions.

A study by Viana et al. (2022) also showed that tooth brushing behavior, eating sweets, and bringing children to the dentist are predictors of children's oral health status. Parents' behavior will affect their children because indirectly, the parents' habits will be imitated and made as an example for their children.

Poor involvement and lack of supervision of a child's health behaviors were associated with dental caries, according to a study in Japan by Matsuyama et al. (2020). The high occurrence of caries in children results from parents' attitudes disregarding their children's oral health. Because children depend on their parents, parents' support in utilizing children's dental health services has a favorable impact on the risk of dental caries in children. Dental caries in children are influenced by oral hygiene, so parents' support in supervising and educating children to maintain their oral health is essential.

A study by Sree et al. (2022) on the effectiveness of parental participation in dental health programs on the oral health status of school-age children also concluded that children with parental participation had significantly lower caries rates than children without parental participation. Although a school-based dental health program is a good strategy for children's oral health, motivating the children to maintain oral hygiene practices at home is the most challenging part. It depends on the parents to guide the children to apply their new knowledge on oral health in real life at home.

## CONCLUSION

There is a significant relationship between parental support on children's oral health and dental caries in children in the agro-industrial area of Arjasa Jember District, which is indicated by children from less parental support experiencing more dental caries.

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