

## THE IMPACT OF PARENTAL KNOWLEDGE ON ORAL HEALTH MAINTENANCE AND THE PREVALENCE OF DENTAL CARIES IN TODDLERS AT POSYANDU IN SUNGAI GELAM

Ulviya Tika Rosneli<sup>1</sup>, Rina Kurnianti<sup>1</sup>, Karin Tika Fitria<sup>1\*</sup>

<sup>1</sup>Dental Therapy Study Program, Dental Health Department, Politeknik Kesehatan  
Kementerian Kesehatan Jambi

*Corresponding author: karintika.fitria@poltekkesjambi.ac.id*

### ABSTRACT

**Background:** Maintaining oral health is crucial for young children, but many parents may not have adequate knowledge about proper dental care, leading to higher rates of dental caries. This study explores the impact of parental understanding on the prevalence of dental caries among toddlers attending Posyandu in Sungai Gelam.

**Method:** The research design used was a cross-sectional study. The study population consisted of parents and toddlers at Posyandu Sambung Rasa Tujuh, Rt 34, Kec. Sungai Gelam, with up to 30 participants. Sampling was done using total sampling. Examination sheets and questionnaires were used as research instruments. Data collection involved individual examinations of teeth and mouth to determine the prevalence of dental caries in children under 5 years old, as well as completing a questionnaire about parents' knowledge on oral health maintenance.

**Result:** Based on the research results, the prevalence of dental caries among toddlers at Posyandu was 19 individuals (63.3%), and there were 11 parents (36.7%) with high knowledge. This indicated a relationship between parental knowledge about oral health maintenance and the prevalence of dental caries in toddlers at Posyandu Sambung Rasa Tujuh, Rt 34, Kec. Sungai Gelam ( $p$ -value = 0.047).

**Conclusion:** there was a significant relationship between parental knowledge of oral health and the prevalence of dental caries in toddlers.

**Keywords:** parental knowledge; oral health care; toddler's caries prevalence

### INTRODUCTION

Oral health in toddlers is significantly influenced by their parents' knowledge and attitudes toward dental care. Parents play a crucial role in shaping their children's habits and behaviors, including those related to oral hygiene and health. The early years of a child's life are critical for establishing good oral health practices, which can prevent dental caries and other oral health issues later in life (Sandy, 2018).

Dental caries is a prevalent chronic infectious disease that results from the metabolism of sugars by cariogenic bacteria, leading to the demineralization of tooth structure. It is a preventable disease, and parents can significantly impact its prevention by implementing good oral hygiene practices and dietary habits in their children from an early age (World Health Organization, 2019).

According to the 2018 Basic Health Research, the prevalence of dental and oral issues in Indonesia reached 57.6% (Kementrian Kesehatan RI, 2018). The

highest proportion of dental problems in Indonesia is decayed, and painful teeth.

Healthy teeth not only affect their function but also the shape of the face. Misplaced teeth, damaged, or missing teeth can impact the overall facial appearance (Oeschger et al., 2022). Dental care performed at home is crucial. Children learn good habits from their parents' example. Even infants will notice when their mother lovingly cleans their teeth (Dieng et al., 2020; Köse et al., 2023).

The stage of preschool children's health development heavily depends on the care and attention of adults or parents, especially the mother. The mother's role is essential in determining the child's growth and development. Therefore, the health status of children, including dental and oral health in children under 5 years old, is largely influenced by parental behavior, particularly the knowledge, attitudes, and actions of mothers (Dieng et al., 2020).

Parents' perceptions, knowledge, and behavior can affect the children's access to preventive dental care and professional oral care (Duijster et al., 2015). Children need dental health education as early as possible to learn how to maintain good and proper oral health. The active role of parents in the growth and development of the child is very important, especially when the child is still in preschool age (Wowor et al., 2023). The active role of parents involves guiding, understanding, reminding, and encouraging their child (Alamoudi et al., 2023).

Therefore, the researchers are eager to understand the extent of the relationship between parents' knowledge about dental and oral health care and the prevalence of dental caries in toddlers at Posyandu Sambung Rasa Tujuh, Sungai Gelam sub-district, in 2024.

## METHODS

This study employed a cross-sectional design, targeting a sample of mothers and

their toddlers at Posyandu Sambung Rasa Tujuh, located in Rt 34, Sungai Gelam sub-district, in 2024. A total of 30 participants were selected for this study.

Data on the mothers' knowledge of dental and oral health care were collected using a structured questionnaire. The prevalence of dental caries in toddlers was determined through an oral cavity examination conducted by trained healthcare professionals.

The collected data were analyzed using statistical methods, specifically the Chi-square test, to determine the relationship between the level of knowledge among mothers and the prevalence of dental caries in their toddlers. This analysis aimed to identify significant correlations and draw conclusions regarding the impact of parental knowledge on the oral health outcomes of their children.

## RESULTS AND DISCUSSION

The results showed that most of the mothers (63,3%) in this research were young housewives between 20 and 29 (Table 1). Housewives have more time for child-rearing than working mothers, which allows them to play a particularly dominant role in shaping their children's behavior. Since they are often the primary caregivers, housewives can invest more time and attention in nurturing their children's physical, emotional, and cognitive development. This increased availability enables them to be more involved in daily routines, discipline, education, and moral guidance (Dhingra & Keswani, 2019).

**Table 1.** Descriptive of respondents

Criteria	N	%
Mothers' Age (years)		
20-29	19	63,3
30-39	11	36,7
Mothers' Occupation		
Housewives	20	66,7
Working Mother	10	33,3
Toddlers' Ages (years)		
1-2	16	53,3
3-4	14	46,7

Based on the results of Table 2, it was found that most parents have low knowledge, which is 63.3%, while high knowledge is 36.7%.

Parental knowledge is very important in shaping dental and oral hygiene behavior because poor dental and oral health behavior can prevent the risk of caries. Parents with low knowledge about dental and oral health tend to have habits that do not support their children's dental and oral health. The process of implementing dental and oral hygiene requires a process that can start from the home environment so that children follow various parental actions related to dental and oral care.

Behavior is the action or activity concerned. The process of forming the expected behavior requires time and the ability of parents to educate their children (Notoatmodjo, 2012). Thus, if the parents' lifestyle is healthy, it will be applied to their children. One of these is maintaining dental and oral health by brushing teeth at least twice a day, namely in the morning after breakfast and at night before going to bed, using toothpaste that contains fluoride and is appropriate for the age, about the size of a pea (Clarke & Stevens, 2019).

**Table 2.** Statistical analysis to asses the relationship between mother knowledge and toddler's caries status

Mother knowledge	Toddler's Caries status				TOTAL		P-Value
	Caries present		Caries absent				
	N	%	N	%	N	%	
High	4	36,4	7	63,6	11	100	0,047
Low	15	78,9	4	21,1	19	100	
Total	19	63,3	11	36,7	30	100	

In this study, it was found that most parents with low knowledge have children with dental caries in their oral cavity. Conversely, most parents with high dental health knowledge do not have children with caries in their oral cavity. Statistical analysis results show a significant relationship between mothers' knowledge about dental health maintenance and the prevalence of caries in young children (p-value 0,047).

Previous research has shown a correlation between parental knowledge and the incidence of dental caries in children. This means that the level of knowledge parents have about oral health can influence the likelihood of their children developing dental caries (Afiati et al., 2017; Afrinis et al., 2021; Fadlilah, 2019; Fitriani, 2018; Jyoti et al., 2019; Larasati et al., 2021; Muhtar et al., 2020).

Parents with better knowledge about dental care are more likely to implement effective oral hygiene practices for their children. They tend to be more consistent in brushing their children's teeth, using fluoride toothpaste, and avoiding sugary foods that contribute to caries (Salama et al., 2020).

Additionally, these parents understand the importance of regular dental check-ups and are more likely to schedule them, which can help in early detection and prevention of dental issues. Their awareness about the impact of diet on oral health leads them to regulate their children's sugar intake and provide healthier food choices. Overall, parental knowledge about dental health plays a crucial role in preventing caries, as informed parents are more likely to adopt practices that support better oral health, reducing the risk of caries in their children (Dali et al., 2019).

To promote good dental health in children, proper nutrition plays a key role. It is important to ensure that children receive a balanced diet rich in nutrients, including fresh fruits and vegetables while limiting the intake of sugary foods (Benahmed et al., 2021). Encouraging healthy eating habits not only supports overall well-being but also helps in preventing tooth decay and other oral health issues. Additionally, parents should set a good example by maintaining their own oral hygiene practices and by making regular visits to the dentist every 3-6 months (Antoniadou & Varzakas, 2021).

Brushing habits are equally crucial in maintaining dental health. Children should use a soft-bristled toothbrush along with

toothpaste that contains fluoride, appropriate for their age, using an amount equivalent to the size of a pea. It is recommended that children brush their teeth at least twice a day, specifically after breakfast and before bed.

For children aged 2-3 years, while they may start brushing on their own, parental guidance is still necessary to ensure proper technique. This includes brushing all surfaces of the upper and lower teeth with a back-and-forth motion, at least eight times on each surface. Avoid sharing toothbrushes among family members and discourage habits such as using a pacifier before bedtime. For children aged 3-5 years, the focus remains on brushing twice daily, reducing sweet and sticky foods, and avoiding habits like thumb-sucking that can lead to misaligned teeth (Kementerian Kesehatan RI, 2012).

In contrast to this study, other research has found no significant relationship between parental knowledge and the incidence of dental caries in children (Rompis et al., 2016; Sukarsih et al., 2018).

This discrepancy could be due to various factors. For instance, some studies may have had different methodologies, such as varying sample sizes, populations, or definitions of "parental knowledge." Additionally, the effectiveness of parental knowledge might be influenced by other factors like socio-economic status, access to dental care, or cultural attitudes towards oral health, which could potentially obscure the direct impact of parental knowledge alone (Ghasemianpour et al., 2019; Safiri et al., 2016).

In some cases, the implementation of dental care practices might not solely depend on parental knowledge but also on other external influences or barriers. Consequently, while knowledge is an important factor, it might not always directly correlate with the prevalence of dental caries due to the complex interplay of multiple variables.

## CONCLUSION

From this study, it can be concluded that there was a significant relationship between mothers' knowledge of their toddlers' caries status.

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