

## THE ROLE OF MOTHERS IN MAINTAINING ORAL HEALTH TOWARDS DENTAL HYGIENE

Yolanda Oktavia<sup>1</sup>, Harsismanto J<sup>2</sup>, Hendry Boy<sup>3</sup>,  
Mira Sri Gumilar<sup>4</sup>  
Puskesmas Pematang Tiga<sup>1,2</sup>  
Politeknik Kesehatan Kementerian kesehatan Jambi<sup>3,4</sup>  
[harsismanto@gmail.com](mailto:harsismanto@gmail.com)<sup>2</sup>

### ABSTRACT

*The purpose of this study was to determine the relationship between mothers' roles in maintaining oral health and the dental hygiene of children at Melati Kindergarten and Mutiara Umi Kindergarten in Pematang Tiga District. This study was analytical with a cross-sectional approach. The population consisted of 35 children. The sample was taken using a total sampling technique, with 35 students. Data collection techniques included questionnaires and direct examination. Data analysis techniques used in this study were univariate and bivariate analysis using the Chi-square test. The results showed that mothers' roles in maintaining oral health were mostly in the poor category (74.3%). The dental hygiene of children at Melati Kindergarten and Mutiara Umi Kindergarten in Pematang Tiga District, as measured by the PHP-M index, was mostly in the moderate category (45.7%). In conclusion, there is a significant relationship between mothers' roles in maintaining oral health and the dental hygiene of children at Melati Kindergarten and Mutiara Umi Kindergarten in Pematang Tiga District, with an Asymp.sig value of  $0.00 < 0.05$ .*

*Keywords: Mother's Role, Children Pretending, Dental Hygiene*

### INTRODUCTION

Oral and dental health is a vital component of general health, supporting children's growth, development, and quality of life. From an early age, children begin to develop personal hygiene habits, including tooth brushing, which will continue into adulthood. Poor oral and dental health in children can cause pain, eating disorders, sleep disturbances, decreased nutritional status, and even impaired learning and social interactions. Therefore, efforts to maintain dental health need to begin at an early age through family and school involvement (Chou et al., 2021).

Dental caries remains a major public health problem affecting children in various countries. The World Health Organization reports that dental caries is the most common chronic disease in children and is largely preventable through good oral hygiene practices. The high prevalence of caries in children indicates that promotive and preventive efforts have not been optimally implemented, particularly in establishing proper tooth brushing habits from an early age (WHO, 2022).

The family is the primary environment that shapes children's health behaviors. Within the family, mothers play a dominant role in teaching, guiding, and supervising children's dental hygiene habits. This role includes teaching proper toothbrushing techniques, reminding children to brush, limiting the consumption of sweet foods, and

taking children for regular dental checkups. A systematic study conducted by Aliakbari et al., (2021) showed that parental involvement, particularly mothers, through assisted toothbrushing at home has been shown to improve children's toothbrushing habits and reduce the risk of dental caries.

In addition to maternal involvement, parental knowledge about dental health is also crucial for the success of maintaining children's oral health. Knowledgeable parents tend to have a positive attitude toward dental health and are therefore more consistent in monitoring their children's toothbrushing habits. Conversely, low parental knowledge leads to a lack of attention to children's dental hygiene, increasing the risk of plaque formation and caries. A systematic review by Andrew et al., (2021) showed that low caregiver knowledge is one of the factors most consistently associated with high caries incidence in early childhood.

Children's dental hygiene is influenced not only by knowledge but also by the behaviors and habits practiced within the family. Research by Suprabha et al., (2021) found that most parents experience various obstacles in getting their children into the habit of brushing their teeth regularly, such as difficulty managing their behavior, lack of time to accompany their children, and low motivation to brush before bed. These conditions result in suboptimal dental hygiene in children, even though parents understand the importance of maintaining dental health.

The school environment also plays a crucial role in shaping dental health behaviors in early childhood. Dental health education programs involving teachers, health workers, and parents have been shown to improve children's knowledge and brushing habits. Joufi et al., (2021) stated that collaboration between schools and families is an effective strategy for improving oral health behaviors in early childhood because habits are continuously instilled both at home and at school.

Dental hygiene is an important indicator in assessing a child's oral health status. Good dental hygiene is characterized by minimal plaque and food debris adhering to tooth surfaces, thereby reducing the risk of caries and periodontal disease. Conversely, poor dental hygiene increases plaque accumulation, a major factor in the development of caries. Therefore, measuring dental hygiene using objective indices, such as the Personal Hygiene Performance Modified (PHP-M), is crucial for accurately describing children's dental hygiene (Chou et al., 2021).

Several studies have reported the relationship between parental characteristics and children's dental health, but most have focused on knowledge levels or caries incidence. Research specifically examining the role of mothers in maintaining oral health through children's dental hygiene using objective indicators is still relatively limited, particularly among kindergarten-aged children in rural Indonesia. Furthermore, differences in sociocultural characteristics and access to health services mean that research results from other regions may not necessarily reflect the conditions in Central Bengkulu Regency.

Based on preliminary research conducted by researchers in December 2018, A 023 study of ten kindergarten children found that most children still had moderate dental hygiene. Interviews with several mothers revealed that children were generally only reminded to brush their teeth in the morning, while brushing before bed was not a regular practice. This situation indicates that maternal involvement in maintaining children's dental health still needs to be improved, thus research is needed to determine the relationship between mothers' roles and children's dental hygiene.

Based on this description, this study aims to analyze the relationship between mothers' roles in maintaining oral health and children's dental hygiene at Melati Kindergarten and Mutiara Umi Kindergarten, Pematang Tiga District, Central Bengkulu Regency. The results are expected to form the basis for developing family- and school-based dental health promotion programs to improve children's dental health behaviors from an early age..

## RESEARCH METHOD

To examine the relationship between mothers' roles in maintaining oral health and the dental hygiene rate of children in Melati Kindergarten and Mutiara Umi Kindergarten, Pematang Tiga District. Dental health of Melati Kindergarten and Mutiara Umi Kindergarten children in Pematang Tiga District in 2024. The study was conducted using analytical research methods using a cross-sectional approach. The study was conducted on children of Melati Kindergarten and Mutiara Umi Kindergarten in Pematang Tiga District in 2024. The population in this study were all students of Melati Kindergarten and Mutiara Umi Kindergarten in Pematang Tiga District. In the context of the relationship between the role of mothers in maintaining oral health and the rate of dental hygiene of children of Melati Kindergarten and Mutiara Umi Kindergarten in Pematang Tiga District in 2024, univariate analysis was used to analyze data regarding the frequency of each variable, namely the role of mothers in maintaining oral health and dental hygiene of children of Melati Kindergarten and Mutiara Umi Kindergarten in Pematang Tiga District. Data processing used the Chi-Square Test.

## RESEARCH RESULT

### Description of Research Sample Characteristics

This study examined the relationship between mothers' role in maintaining oral health and the dental hygiene of children at Melati Kindergarten and Mutiara Umi Kindergarten in Pematang Tiga District. The study was conducted on June 17 and 18, 2024, with a sample size of 35 children.

Table. 1  
Frequency Distribution of Respondents by Gender and Age for Children t

Gender	Umur				Total	
	5 Tahun		6 Tahun		N	%
	N	%	N	%		
Male	1	2,8	15	42,9	16	45,7
Female	4	11,4	15	42,9	19	54,3
Jumlah	5	14,3	30	85,7	35	100

Based on table 1, the distribution of respondents by gender and age shows that there was one 5-year-old male student (2.8%), and 15 6-year-old students (42.8%), for a total of 16 male students (45.7%). Meanwhile, there were four 5-year-old female students (11.4%), and 15 6-year-old students (42.9%), for a total of 19 female students (54.3%). Table 4.1 shows that the majority of students at Melati Kindergarten and Mutiara Umi Kindergarten are 6 years old (30 students (85.7%)), and 5 5-year-old students (14.3%).

Table. 2  
Frequency Distribution of Mothers by Age, Education, Occupation, Information on Dental Health,  
and Information Sources for Children

Variabel	Umur Ibu					
	N			%		
	<20 Year	20-35 Year	>35 Year	<20 Year	20-25 Year	>35 Year
Primary Education						
Secondary Education	0	6	8	0	17,1	22,9
Higher Education	0	13	2	0	37,1	5,7
	0	5	1	0	14,3	2,9
Job						
Working	0	10	3	0	28,6	8,6
Not Working	0	14	8	0	40	22,9
Information About Dental Health						
Ever	0	24	11	0	68,6	31,4
Never	0	0	0	0	0	0
Information Sources						
Healthcare Professionals	0	24	11	0	68,6	31,4
Magazines	0	0	0	0	0	0
Internet	0	0	0	0	0	0

Based on table 2, it is known that 6 mothers (17.1%) were aged 20-35, with primary education, 13 (37.1%), and 5 (14.3%). Meanwhile, 8 mothers (22.9%) were aged 35 and above with primary education, 2 (5.7%), and 1 (2.9%) were aged 20-35.

Table 4.4 shows that 10 mothers (28.6%) were employed between the ages of 20-35 and 3 (8.6%) were aged 35 and above. 14 mothers (40%) were unemployed between the ages of 20-35 and 8 (22.9%) were aged 35 and above.

Sources of information about dental health, all mothers have received it, where the information was obtained from health workers, with mothers aged 20-35 years who have received information about dental and oral health as many as 24 people (68.6%) and mothers aged >35 years who have received information about dental and oral health as many as 11 people (31.4%).

### Univariate Analysis Results

Children's Dental Hygiene (PHP-M Index) at Melati Kindergarten and Mutiara Umi Kindergarten

Table. 3  
Frequency Distribution of Dental Hygiene (PHP-M Index)

No	PHP-M	N	%
1	Good	5	14,3
2	Moderate	16	45,7
3	Bad	14	40
Total		35	100%

Based on table 3, it shows that the dental hygiene of children at Melati Kindergarten and Mutiara Umi Kindergarten, Pematang Tiga District, is in the good criteria for 5 people (14.3%), moderate criteria for 16 children (45.7%), and poor criteria for 14 children (40%).

## DISCUSSION

### **The Role of Mothers in Maintaining the Oral Health of Children**

The research revealed that the majority of children at Melati Kindergarten and Mutiara Umi Kindergarten had moderate dental hygiene (45.7%), followed by poor (40%), and only 14.3% had good dental hygiene. These findings indicate that the majority of children do not yet have optimal dental hygiene. This condition indicates the persistence of plaque buildup on tooth surfaces due to poor or inconsistent brushing habits. Dental hygiene at an early age is strongly influenced by a child's ability to perform dental care independently, thus requiring guidance and supervision from parents and. The higher percentage of moderate dental hygiene compared to good indicates that most children have developed a tooth brushing habit, but their technique and frequency are not yet consistent with recommendations. Brushing less than twice daily with fluoride toothpaste and a lack of parental supervision result in plaque remaining on tooth surfaces. Systematic reviews indicate that home brushing, under parental supervision, is a key factor in maintaining dental hygiene in young children and preventing caries teachers (Aliakbari et al., 2021; Oktarina et al., 2016).

The role of parents, especially mothers, is crucial in maintaining dental hygiene in early childhood. At this age, children's motor skills are not yet fully developed, so they are unable to effectively clean all tooth surfaces. Parents play a crucial role not only in teaching toothbrushing techniques but also in supervising, motivating, and ensuring that brushing is carried out every morning after breakfast and at night before bed. Various studies have shown that active parental involvement in children's tooth brushing is directly related to reduced plaque formation and caries incidence.

In addition to the family environment, schools also play a crucial role in improving children's dental hygiene. School-based dental health promotion programs have been shown to improve knowledge, attitudes, and toothbrushing behavior in children from early childhood through elementary school. Regular educational activities, such as showing teeth and regular dental checkups, can reinforce habits taught at home, resulting in more sustainable behavior changes (Bramantoro et al., 2021; Santoso et al., 2020).

The results of this study also indicate that children's dental hygiene is influenced not only by parental knowledge but also by the consistency of health behaviors practiced in daily life. Although some parents understand the importance of maintaining dental health, implementation, in the form of assisted tooth brushing, is often suboptimal due to time constraints, difficulty controlling children's behavior, and low motivation to brush. These barriers have been widely reported in various studies on early childhood dental health behavior (Octavia et al., 2023; Aliakbari et al., 2021).

Technological developments also provide new opportunities to improve children's dental health through parent education. mHealth-based interventions, such as reminders via mobile phone apps, educational videos, and digital media, have been shown to improve parents' knowledge and behavior in assisting their children with tooth brushing. This approach can be an alternative to support community dental health promotion

programs, especially for families with limited access to direct education (Wang et al., 2022).

The findings of this study align with the concept that dental hygiene is the result of the interaction of various factors, including child characteristics, family environment, school environment, and support from healthcare professionals. Therefore, improving children's dental hygiene cannot rely solely on a single intervention, but requires a comprehensive approach through collaboration between parents, teachers, and healthcare professionals. A multidisciplinary approach has been shown to be more effective in fostering sustainable dental health behaviors in early childhood. Practically, the results of this study demonstrate the need to improve education for parents regarding proper brushing techniques. This includes proper dental hygiene, appropriate brushing times, and the importance of mentoring children until they develop independent brushing skills. Furthermore, schools can integrate dental health activities into learning programs through group toothbrushing activities and collaboration with community health centers (Puskesmas) to conduct regular dental checkups (Bramantoro et al., 2021; Husna & Prasko, 2019).

Therefore, the proportion of children still in the moderate and poor dental hygiene categories indicates that promotive and preventive efforts still need to be improved. Increasing parental involvement, strengthening school-based dental health programs, and utilizing digital educational media are expected to improve children's dental hygiene from an early age, thereby minimizing the risk of caries and other dental diseases. (Wang et al., 2022).

## CONCLUSION

The results of this study on the relationship between mothers' roles in maintaining oral health and the dental hygiene of children at Melati Kindergarten and Mutiara Umi Kindergarten in Pematang Tiga District indicate that: 1) The majority of mothers' roles in maintaining oral health fall into the poor category (74.3%) and the good category (25.7%). 2) Children's dental hygiene falls into the moderate category (45.7%), followed by the poor category (40%), and the good category (14.3%). 3) There is a relationship between mothers' roles in maintaining oral health and children's dental hygiene, with an Asymp.sig analysis of  $0.00 < 0.05$ .

## SUGGESTION

Based on the research results, it is recommended that mothers and parents increase their active role in maintaining their children's oral health by guiding and supervising their children's twice-daily tooth-brushing habits, limiting consumption of sugary foods and drinks, and conducting regular dental checkups every six months. Schools are expected to collaborate with community health centers or health workers to provide dental health education, group tooth-brushing activities, and regular dental checkups.

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