

Mother's Behavior In Maintaining Of Child's Oral Health With Their Caries Experience In Preschool Children That Consuming Formula Milk

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Abstract: Maintenance of dental and oral hygiene for preschooler involves direct interaction between children and parents because children's dental health cannot be separated from the attitudes and behavior of parents, especially the mother as the key person to the child. This study aims to determine the behavior of mothers in maintaining dental and oral hygiene of preschool children who consume formula milk with caries experience. This type of research is analytic with a cross-sectional design. The subjects were 100 pairs of mother and preschool children who consumed formula milk in Medan. Data was collected by distributing questionnaires and caries experience was examined directly using a diagnostic tools. Respondents who have correct behavior are given a score of 1, those who have wrong behavior are given a score of 0, then the total score is added up and then categorized into good behavior, sufficient, and poor. Data were analyzed using the chi-square test. The results showed that 58% of mothers had adequate behavior in maintaining the oral and dental health of their children with an average deft of 4.41 ± 2.81 . There was a significant relationship between mother's behavior and the caries experience of her child who consumed formula milk ($p < 0.05$). This shows that the worse the mother's behavior regarding the maintenance of children's dental and oral health, the higher the child's caries experience, especially those who consume formula milk

Keywords : mother's behaviour, oral health, caries experience

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I. Introduction

According to WHO (World Health Organization), in the 2015 Global Burden of Disease Study, dental and oral health problems, especially dental caries, are a disease experienced by almost half of the world's population (3.58 billion people). In fact, the first rank of the most common disease in the world is caries in permanent teeth (around 2.3 billion people) and the 12th rank is caries in children's teeth (around 560 million children) or around 75% -90% of children in the world. attacked by dental caries.¹ Meanwhile, the prevalence of caries in children in Indonesia for the 3 year old category was 60%, 4 year old reached 85% and for 5 year old reached 86.4%. This relatively high prevalence shows that the behavior of the Indonesian people towards oral and dental health is still poor.²

The pre-school period (3-5 years) is a practical period that needs greater attention, especially from their parents. Maintenance of children's oral health involves direct interaction between children and parents because children's dental health cannot be separated from the attitudes and behavior of parents, especially the mother as the key person for their children. If parents' attitudes and behavior are good in maintaining oral health, the dental and oral health of their children can also be well maintained, but if the mother's attitude and behavior are bad, the dental and oral health of their children will also be impaired.³ Preschoolers are very dependent on their mothers, especially to clean their teeth and mouth. According to Mustika's research, 86% of mothers show poor behavior in maintenance their children's dental and oral health. Meanwhile, research conducted by Parama showed that 65.22% of respondents, namely mothers, had good behavior in maintaining children's oral hygiene.⁴

Formula milk is produced by the industry for the purpose of nutritional intake that is appropriate and acceptable to the child's body system. All ingredients contained in formula milk must be free of sugar added, and confirmed to be safe for children consumption. But sometimes giving formula milk can cause problems for children's oral health. Giving formula milk that is not appropriate, such as the method of serving using a bottle which is associated with the length of administration, frequency, and time of administration can cause caries in children.⁵ According to Jingga et al, among children aged 3-5 years who consumed formula milk, 84.8% had caries experienced. This can be caused because milk containing carbohydrates will stagnate for quite a long time on the surface of the teeth, especially if the child is allowed to suck before going to bed, and can be the start of the caries process.⁶ Therefore, mothers play an important role in maintaining children's oral hygiene and teach children to clean their teeth and mouth properly, especially in children who consuming formula milk.⁷

Based on the description above, it is necessary to analyze the behavior of mothers in maintaining children's oral dental health with caries experience in children who consume formula milk. The aim of this study to find out the relationship Mother's behavior in maintaining children's oral dental health with caries experience in children who consume formula milk. The hypothesis of this study is there is no relationship between the caries experience of children who consume formula milk and the mother's behavior regarding maintenance of oral dental health.

II. Method

The implementation of this research was funded by the Research Institute of the University of North Sumatra with a contract number: 129/UN5.2.3.1/PPM/SPP-TALENTAUSU/2021. The research design used is analytic with Cross-Sectional research design to analyze mother's behavior in maintaining children's oral hygiene with caries experience in children who consume formula milk. The data obtained were then analyzed by Chi Square test. The population of this study were mothers and students of Jabal Rahmah Medan Kindergarten. The research sample is the entire research population that consumes formula milk and is willing to be a respondent of 100 respondents. Research is done by instructing parents of kindergarten students to fill out the questionnaire that has been distributed. Then a clinical examination of the oral cavity and data collection on children was carried out. Inspection results are recorded on the form provided. After obtaining the data, then data analysis is carried out. The data normality test in this study used the Shapiro Wilk formula, with hypothesis testing using the Chi Square test to analyze the relationship between the behavior of mothers caring for their children's oral cavity with caries experience in children who consume formula milk,

III. Results

This study showed that children aged 5 years were dominated by 59%. The mother's education is the majority of university graduates, namely 88% and as many as 56% of mothers do not work (Table 1).

Table 1. Characteristics of Respondents (n=100)

Characteristics	n	%
Child's Age (Years)		
4	36	36
4,5	26	26
5	30	30
5	8	8
Mother's Education		
Senior High School	12	12
College	88	88
Mother's job		
Work	44	44
Doesn't work	56	56

The majority of mothers with college education had adequate behavior, namely 53.4% and 12.5% had good behavior, but none of the mothers with high school education had good behavior (Table 2).

Table 2. Categories of Mother's Behavior Concerning the Maintenance of Children's Oral Dental Health Based on Mother's Education (n=100)

Mother's education level	Mother Behavior Category							
	Good		Enough		Not enough		Total	
	n	%	n	%	n	%	n	%
Senior High School	0	0	11	91.7	1	8,3	12	100
College	11	12.5	47	53,4	30	34,1	88	100

The average def-t of children based on age, the highest was at the age of 5 years, namely 5.25 ± 3.41 . The older the child, the caries experience also increases (Table 3).

Table 3. Average def-t based on child's age (n=100)

Age (Years)	Mean def-t			
	d	e	F	def-t
4	3.36±2.16	0.25±0.44	0.77±1.69	4.39±2.31
4,5	3,27±3.07	0.23±0.42	0.69±1.93	4.38±3.41
5	3.10±2.41	0.30±0.46	0.96±1.69	4.53±2.66
5	5.00±3.21	0.12±0.35	0.12±0.35	5.25±3.41

Mothers with poor behavior had a caries experience of 5.26 ± 2.73 for their children, 4.41 ± 2.81 for moderate behavior, and only 2.82 ± 2.14 for good behavior (Table 4). The statistical test results also showed that there was a relationship between the mother's behavior in maintaining children's dental and oral health and her caries experience ($p < 0.05$) (Table 4).

Table 4. Analysis of Mother's Behavior with Children's Caries Experience (n=100)

Mother's Behavior	n	%	def-t	p-values
			X±SD	
Good	1 1	11.0	2.82±2.14	p=0.043
Currently	5 8	58.0	4.41±2.81	
Bad	3 1	31.0	5.26±2.73	

IV. Discussion

Mother's behavior in maintaining children's dental and oral health plays an important role because mother is the main caretaker of the child from childhood. The absence of a good behavior category among mothers with high school education is probably due to their lack of knowledge. Parents who are aware will be motivated and tend to start brushing their teeth from scratch and show proper oral hygiene and dental and oral health education.⁸ The level of education that a person has is closely related to that person's behavior, this is because the higher the level of education a person has, the easier it is to receive information. Someone who takes formal education will be accustomed to thinking logically in dealing with a problem which will then affect that person's behavior.²

Based on the age of the child, it was found that the caries experience of children who consumed formula milk increased at a greater age. This is probably due to the fact that children who consume formula milk are more susceptible to caries because formula milk on the market already contains a total sugar content of around 1.28 - 11.16 grams.⁹ The higher the sugar concentration, the greater the possibility that the sugar can penetrate into the dental plaque quickly and be metabolized by bacteria in the dental plaque to produce acids that can damage teeth.⁴ Even children who consume formula milk with added sugar/sweetener have 12 times the possibility of developing dental caries compared to children who consume formula milk without added sugar. In addition, in this study, most of the mother's behavior was still in the less category. Behavior plays an important role in influencing the health status of teeth and mouth, in this case it is the mother who should help and supervise children brushing their teeth because toddlers have not been able to carry out their activities independently so that the role of the mother is very necessary in maintaining the health of the child's oral cavity. Brushing teeth accompanied by parents or caregivers has the potential to be more effective in getting rid of dental plaque.¹⁰ Mother's behavior regarding dental and oral hygiene and health will influence the good or bad status of dental health so that it will also affect the incidence of caries.

The results showed that there was an influence between the mother's behavior regarding the maintenance of children's oral health and their caries experience, especially in children who consumed formula milk ($p < 0.05$). The role of the mother in maintaining children's oral and dental health has a significant influence on the oral health of children, especially preschool-aged children who really need their mother's help in brushing their teeth. The role of the mother should be increased in getting used to maintaining and maintaining the cleanliness of the child's teeth and mouth to prevent tooth decay.¹¹

V. Conclusion

The mother's behavior is closely related to the caries experience found in the child's oral cavity. The less the mother's behavior in maintaining the health of her child's teeth and mouth, the higher the child's caries experience.

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