

Factors Causing Early Childhood Caries In Early Children

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Abstract. Caries is a dental and oral disease problem whose prevalence is still quite high in Indonesia. Dental caries causes pain in the teeth, which interferes with the absorption of food, which can affect children's growth and become a serious disease that often occurs in children. Indonesian Basic Health Research in 2018 showed that 93% of young children experienced dental caries. The aim of this research is to discuss the factors that cause dental caries in early childhood. This research is descriptive research with a systematic review method. The literature search strategy uses a prism flow diagram, as well as inclusion and exclusion criteria. The databases used include Science Direct, Taylor and Francis, and Google Scholar. All 22 articles used cross-sectional research. Overall, the journal articles obtained discuss the factors that cause anal tooth caries at an early age, namely maternal knowledge, consumption of sweet foods, tooth brushing habits, maternal education, maternal behavior and formula milk.

Keywords: Dental Caries, Early Childhood, Causative Factors

INTRODUCTION

Oral health is important for general health and quality of life. Oral health means being free from throat cancer, infections and sores in the mouth, gum disease, tooth decay, tooth loss, and other diseases, resulting in disturbances that limit biting, chewing, smiling, speaking, and psychosocial well-being

The most common dental health problem in children is dental caries. In general, children's oral hygiene conditions are worse and children eat more foods and drinks that cause caries than adults². Dental caries is a dental tissue disease characterized by tissue damage, starting from the surface of the tooth, namely from the enamel, dentin, and extending to the pulp. Dental caries is one of the most common forms of tooth decay experienced by preschoolers, which can interfere with their growth and development.

Based on the results of the 2018 Basic Health Research (Riskesdas), it was found that 57.6% of Indonesians had dental and oral problems and 93% of Indonesian children suffered from dental caries. The prevalence and incidence rates of dental caries are quite high, indicating a lack of motivation and public awareness to prevent dental caries from occurring early on.

The prevalence of dental caries in children varies greatly based on age group, where 1 year old children are 5%, 2 year old children are 10%, 3 year old children are 40%, 4 year old children are 55%, and 4 year old children are 55%. 55%, and children aged 4 years as much as 55%. 5 years by 75%. So the toddler age group is the group most vulnerable to tooth decay.

Dental caries causes children to lose their chewing power and disrupt digestion, which results in less than optimal growth⁵. Based on the problems above, the researcher will conduct a literature study related to the factors that cause dental caries in early childhood

METHODS

The research strategy used is descriptive with a systematic review method, namely a literature review. Literature Review is a comprehensive review of previous research on a particular topic from a written assessment from the researcher as a first step to gather answers to the problem under study, thus establishing the reasons for research based on data.

The population in this study were international and national research articles found in the PubMed, DOAJ, Taylor & Francis, Science Direct and Google Scholar databases related to the research title, Factors Causing Dental Caries in Early Childhood.

The sample in this study was 22 research articles consisting of 18 national research articles and 4 national articles that met the criteria for further review.

FINDING AND DISCUSSION

There were 22 research articles that met the inclusion criteria, based on the topic of systematic review, namely Factors Causing Dental Caries in Early Childhood. Twenty two research articles used a cross sectional research type. Most of the research designs used are quantitative research designs. Factors causing dental caries in children obtained from 22 research articles were mother's knowledge, mother's education, tooth brushing habit, sweet food consumption, mother's behavior, formula milk. Overall, the research articles obtained discuss the factors that cause dental caries in early childhood. These findings are grouped by research area as follows.

Table 1. Article search results by region/country

Region/Country	Article Type	
	National	International
Indonesia	18	0
Australia		1
Canada		1
Bangkok		1
Turkiye		1
Total 22 Articles		

Mother's Knowledge

Based on the results of a systematic review, 18 out of 22 studies that examined the relationship between mother's knowledge and the causes of dental caries in early childhood, all stated that there was a relationship between mother's knowledge and the causes of dental caries in children of this age. Parents who have poor knowledge in maintaining dental health have 65% of their children experiencing dental caries..

This is because parental knowledge is very important in underlying the formation of behaviors that support or do not support children's dental and oral hygiene⁸. This knowledge can be obtained naturally or in a planned manner, namely through the educational process. parents with low knowledge about dental and oral health are predisposing factors and behaviors that do not support dental and oral health in children.

Knowledge is the result of "knowing" and this occurs after people perceive a particular object. Sensing of objects occurs through the five human senses, namely sight, hearing, smell, taste and touch alone.

Mother's knowledge in managing children's diet, which makes mothers know in choosing and preparing good food, paying attention to what they consume, has a big influence in preventing dental caries which easily attacks children¹¹, so it can be said that knowledge is an important factor because good hygiene will minimize or reduce the presence of bacteria¹². In accordance with research conducted by Jyoti, et al in 2019 stated that after the Spearman rho test was carried out the results were in the form of a Level of Significance p value = 0.003, it can be concluded that H0 is rejected, which means that statistically there is a relationship between the level of knowledge of mothers regarding children's dental care to the incidence of caries children at Titi Dharma Denpasar Kindergarten¹³. The higher a person's knowledge, the easier it is for a person to receive information. Someone who has a good level of knowledge can receive information or know how to maintain good dental hygiene so that they can prevent dental caries¹⁴

Consume Sweet Foods

Based on the results of the authors' systematic observations, 8 out of 22 studies that examined the relationship between sweet food consumption and the causative factors of early childhood dental caries all stated that sweet food consumption had a significant relationship to dental caries in early childhood..

The habit of eating candy is higher than children who consume soft drinks and ice cream. A child's habitual factor that has been proven to be related to the occurrence of dental caries is the habit of chewing on food¹⁵. This habit causes the food consumed to remain in the

oral cavity for a longer period of time. If the food consumed contains carbohydrates and sugar, the plaque bacteria will produce acid which causes the demineralization process to occur. In children, this can cause serious problems considering that children's teeth are more susceptible to acid.

Dental caries is also a very widespread disease, and most of the sufferers are children. One of the occurrences of dental caries is due to wrong eating habits, consuming too many foods that contain sucrose⁴. Children who have the habit of eating high cariogenic foods have a 9x risk of experiencing Early Childhood Caries compared to children who have the habit of eating low cariogenic foods

Tooth Brushing Habit

Based on the results of a systematic review conducted by the authors, 6 out of 22 studies that examined the relationship between tooth brushing habits and the causative factors of early childhood dental caries all stated that tooth brushing habits had a significant relationship to dental caries in early childhood.

Brushing your teeth is cleaning your teeth from food debris, bacteria and plaque. The habit of caring for your teeth by brushing your teeth at least twice a day at the right time in the morning after breakfast and in the evening before going to bed as well as the behavior of eating sticky and sweet foods can influence the occurrence of dental caries.

The importance of brushing teeth at night is one of the strategies to protect children from dental caries. Food particles that are still stuck to the teeth will turn into plaque if not cleaned properly, which is the main cause of dental caries¹⁹.

Mother's Education

Based on the results of a systematic review, 4 out of 22 studies that examined the relationship between maternal education and the causative factors of early childhood dental caries, all stated that there was a relationship between maternal education and the causal factors of early childhood dental caries.

Mother's education level is a predisposing factor that is proven to have a strong relationship to the occurrence of dental caries, namely the mother's education level at the academy/high school level and below.

The higher a person's level of formal education, the easier it is for a person to get a job so that the more income they can earn to meet their children's health needs ²⁰.

Behavior Ibu

Based on the results of a systematic review, 4 of the 22 studies that examined the relationship between maternal behavior and factors causing dental caries in early childhood, all stated that there was a relationship between maternal behavior and factors causing dental caries in children at this age.

Parents, especially mothers, have an important role in developing children's positive behavior towards dental and oral health. Parents' participation in maintaining children's dental and oral health can be implemented by paying attention to children's behavior regarding dental and oral health and children's eating patterns. Mother's knowledge, attitudes and behavior significantly influence children's knowledge, attitudes and behavior.

Parents, especially mothers, have an important role in developing children's positive behavior towards dental and oral health. Parents' participation in maintaining children's dental and oral health can be implemented by paying attention to children's behavior regarding dental and oral health and children's eating patterns. Research conducted by Widiyanti, Nur in 2020 found a correlation regarding the relationship between parental behavior in the habit of giving sweet, sticky food and drinking milk with dental caries obtained Coefficient Contingency with a value = 0.504, this shows that there is a strong correlation between parental behavior in the habit of giving sweet, sticky food and drinking milk with dental caries in early childhood is because most of the behavior of parents in examining their children's teeth and mouth is lacking. This can be caused by a lack of information and awareness in carrying out routine dental and oral examinations every 6 months¹. Likewise, research conducted by Selvi, et al in 2019 showed a significant relationship between mothers' behavior in cleaning their children's teeth and mouth and the incidence of dental caries ($p = 0.001$).

Milk Formula

Based on the results of a systematic review, 3 of the 22 studies that examined the relationship between formula milk and factors causing dental caries in early childhood, all stated that there was a relationship between formula milk and factors causing dental caries in children at this age.

One of the causes of dental caries in pre-school children is inappropriate consumption of formula milk. Giving formula milk can sometimes cause problems for children's health, one of which is related to children's oral and dental health. Inappropriate consumption of formula milk, such as the duration of consumption of formula milk, the way it is served using a bottle, the frequency of consumption, the duration of consumption, and the addition of sugar to

formula milk can cause problems for children's health, one of which is related to children's dental and oral health, namely dental caries.

According to Ngatemi, et al in 2020, a history of giving formula milk with a def-t index showed a history of giving formula milk > 2 years had more high caries than a history of giving formula milk < 2 years. So it can be interpreted that a history of giving formula milk > 2 years has a risk of dental caries in early childhood.

The habitual factors of children who are at risk of cavities that are proven to have a significant relationship with the occurrence of dental caries are drinking milk more than 4 times a day and drinking milk using a bottle for more than 4 years. Most children under 5 years old have the habit of drinking milk from a bottle until they fall asleep.

CONCLUSION

Based on a systematic review of 22 research journals, it can be concluded that maternal knowledge, consumption of sweet foods, tooth brushing habits, maternal education, maternal behavior and formula milk are factors known to influence the causes of dental caries in children.

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