

## **THE ROLE OF PARENTS IN MAINTAINING DENTAL HEALTH OF CHILDREN UNDER 5-YEAR-OLD IN PISANGAN DISTRICT, TANGERANG SELATAN**

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### **ABSTRACT**

Public awareness about the importance of understanding dental and oral health in toddlers is one of the factors causing the high dental caries in children under five. Sweet eating and drinking habits, inappropriate methods, lack of parental understanding of toddlers' oral and dental health are problems that exist in the community. The purpose of this study was to determine the role of parental education in maintaining dental and oral health of toddlers. This research method uses a Random Sampling Survey through filling out questionnaires and interviews with parents aged 0-59 months. The results of this study indicate a high level of dental caries in toddlers in Pisangan District Ciputat Timur, Tangerang Selatan, which is caused by a lack of parental awareness in maintaining dental and oral health of toddlers, which is caused by toddlers consuming a lot of consuming and drinking sweet foods, how to eat on the wrong teeth, lack of awareness to control the dentist. The conclusion of this study shows the importance of the role of education for parents of toddlers in maintaining dental and oral health of toddlers so that the level of dental caries in toddlers can be reduced.

**Keywords:** parents, toddler, oral health, dental caries

### **1. INTRODUCTION**

Dental and oral health is often neglected by the public. The low awareness in maintaining dental and oral health is one of the causes of dental and oral diseases in Indonesian society. The results of the 2018 Basic Health Research (Riskesmas) showed that 57.6% of the Indonesian population experienced dental and oral problems and only about 10.2% had received dental treatment. The prevalence of dental cavities in early childhood is very high (93%) and only 7% of children are free from dental cavities. Therefore, it is important to start taking steps to prevent cavities from an early age. <sup>1,2,3</sup>

Most parents still do not realize the importance of dental and oral health, and do not understand the various problems of deciduous teeth in children so they ignore the need for dental and oral care in children because they feel that they will soon be replaced with adult teeth or permanent teeth. The first Deciduous teeth erupt at the age of 6-7 months (incisors). The last baby teeth will grow at the age of 2 years and are replaced with permanent teeth at the age of 6-12 years. Deciduous teeth are useful for guiding the growth of permanent teeth, before the deciduous teeth fall out in time. If the deciduous teeth fall out prematurely, the permanent teeth will grow, but not in place and cause the teeth to be placed irregularly or piled up with other teeth. Therefore, it is important to maintain deciduous teeth.

The growth of primary teeth is an important process in the growth of children. If the child has problems in the oral cavity, then the child will have difficulty digesting food. Therefore, the growth of the child will be disturbed. Apart from being a masticatory function, teeth are also a factor that affects speech function. Phonetics or pronunciation abilities in children are supported from teeth and oral tissue. Deciduous teeth play a major role in aesthetic function. Premature loss or dental caries will affect the child's self-confidence.<sup>3,4</sup> The first permanent teeth to erupt are the molars at the age of 6 years. The last permanent teeth erupt at about 18 years of age. The permanent molars that first erupt do not replace deciduous teeth they grow right behind the milk molars. <sup>4,5</sup>

Several studies had been conducted to evaluate the role of parents in maintaining dental and oral health especially in Indonesia, while Pisangan district of South Tangerang is located near to capital city of Indonesia. Therefore it is important to know and evaluate the role of parents in order to prevent of disease and identify cultural risk factors that emphasizes on behavioural variables, risk assessment and successful prevention.

### **2. RESEARCH METHODS**

This cross-sectional questionnaire research used a Random Sampling Survey, through filling out structured and close-ended questionnaire and interviews conducted on parents of toddlers at the posyandu Pisangan district Ciputat Timur, Tangerang Selatan, with a total sample of 80 mothers with toddlers aged 0-59 months. Informed consent was obtained from the participants after explaining them the objectives of the study and methods involved. It was explicitly stated that their participation would be voluntary. Each questionnaire's validity and reliability were tested on 30 respondents by online administration. After validation test of the questionnaire, a few questions were modified based on

participants' feedback, and afterward, the survey was distributed again. The questionnaire included twelve questions regarding age, gender, level of education of the parents.

### 3. RESULT

The results of this study indicate that based on the results of surveys and interviews, members of the posyandu Pisangan, Ciputat Timur obtained data on toddlers aged 0-59 months there were 80 children, with details of toddlers aged 0-11 months 16 children. Of the 80 registered toddlers, 30-35 children actively participate in posyandu activities each month, with 16 females and 14 males. For toddlers 0-11 months as many as 5-7 children and toddlers 12-59 months as many as 20-25 children. Table 1 shows characteristics of the parents who have children aged 0-59 months.

Table 1. Characteristics of the respondents

Age of Toddlers	Total (n)	Total in study (n)
0-11 months	10	10
12-59 months	25	16
Total 0-59 months	35	26

The results of the questionnaire distributed, namely Annex 8, with total 26 parents filled it out and showed that children aged 0-5 years experienced dental caries. Most parents did not recognize their toddler complain about the teeth as seen in questionnaire number 1. Only 3.8% of respondents do not know about their dental neither gingiva health of their toddlers. Parents of toddlers had never received counseling or education regarding dental and oral health from competent public dental health workers (Questionnaire number 2). The lack of visits to the dentist from the survey results for the last 6 months was 7.7% and children under five who had never received dental treatment were 92.3%. Total of more than 50% of parents know the use of tooth brush (Questionnaire number 3). More than 75% of parents used toothpaste to brush their toddler teeth (Questionnaire number 4). Questionnaire number 5 and 6 showed more than half of parents agree their condition of children's teeth and gum were good.

Questionnaire number 7 showed the result of questionnaire regarding sweet eating and drinking habits in toddlers at the posyandu, data obtained that toddlers have the habit of eating sweet foods and drinking several times a day and a week; several in a month only 3.8%; cariogenic foods such as biscuits/cakes 73.5%, bread and jam or honey 38.2%, candy 23.5%, tea with sugar 32.4%, and milk with sugar 61.8%. Most of parents did not understand the technique of brushing teeth and the right time to brush toddler teeth, thus causing cavities. More than half of the parents knew the appropriate frequency to brush their toddler teeth and only 7.7% of the respondents never brush their toddler teeth (Questionnaire number 8). Only one third of parents knew that toothpaste contains fluoride (Questionnaire number 9).

Questionnaire number 10 showed the consumption of fruits and vegetables; sweet milk; biscuit and cake in toddlers are more than half of the respondents. The education level of father is 42.3% is senior high school and 42.3% is bachelor / university graduates (Questionnaire number 11) and 42.3% of mothers of toddlers is high school graduates; 38.5% is bachelor degree (Questionnaire number 12). Fathers in this study has higher bachelor educational background and same proportion in senior high school educational background.

Table 2. Questionnaires with parents about their toddler

Questions	Criteria		Questions	Criteria	
<b>No. 1</b> Complaints of teeth & mouth during the last 12 months	Yes 3.8%	No 96.2%	<b>No. 2</b> Frequency of visits to the dental health care	< 6 months 7.7%	Never 92.3%
<b>No. 3</b> Tools used to clean teeth	Tooth brush 84.6%	Other 15.4%	<b>No. 4</b> The use of toothpaste in children	Yes 80.2%	No 19.2%
<b>No 5</b> Description of the condition of children's teeth according to their parents	Don't know 3.8%	Medium 11.5%	Good 53.8%	Very Good 26.9%	Excellent 3.8%
<b>No 6</b>	Don't know 3.8%	Medium 7.7%	Good 61.5%	Very Good 3.8%	Excellent 23.1%

Description of the condition of the child's gums according to parents					
<b>No. 7</b> Frequency of children eat and drink sweets	Never 15.4%	1x/day 11.5%	Several/day 34.6%	Several/week 34.6%	Several/month 3.8%
<b>No.8</b> Frequency of brushing teeth in a day	Never 7.7%	Once/day 15.4%	≥ twice/ day 76.9%		
<b>No 9.</b> The use of toothpaste containing fluorid in children	Don't know 15.4%	Yes 42.3%	No 42.3%		
<b>No 10.</b> Types of cariogenic foods that are often consumed by children	Fruits & Vegetables 61.8%	Biscuit & Cake 73.5%	Bread, jam or honey 38.2%	Sweet Milk 61.8%	
<b>No 11.</b> Father's last education level	Elementary school 3.8%	Yunior high school 3.8%	Senior high school 42.3%	Bachelor 42.3%	
<b>No 12.</b> Mother's last education level	Elementary school 7.6%	Yunior high school 11.5%	Senior high school 42.3%	Bachelor 38.5%	

#### 4. DISCUSSION

The prevalence of dental caries in deciduous teeth among children aged 5 years in Indonesia was 90.7%. Dental caries in deciduous teeth were most commonly found to be severe and children aged between 1 and 6 years with a decayed, missing, and filled teeth index of >5 had the highest severity of dental caries.<sup>7</sup> Dental examination was not conducted because of Covid-19 pandemic. Most of the parents showed that the teeth and gum condition of their children are good. Although we did not examine the knowledge of normal anatomy of the teeth and gum, most of the parents in this study have good behavior to brush their teeth twice daily. Primary prevention measures are prevention carried out before illness, include brushing teeth twice a day in the morning after breakfast and at night before going to bed, using dental floss for interdental and regularly visiting the dentist every six months. Behaviour and knowledge are related each other, and dental health education and information can increase their knowledge and followed with increase of awareness and behaviour improvement in concomitant with their knowledge.<sup>8</sup> Other factors which influence this result are lack of communication between parents and toddler considering their ability to communicate has not been as mature as an adolescence and adult.<sup>9</sup>

However, several mothers have lack knowledge (27%) and poor oral health behaviour (31%) so that socialisation activities need to be continuously improved through mother and child health centres or other activities.<sup>8</sup> More than half of parents brush their children's teeth twice a day, while other study only once a day. Oral hygiene as a part of oral health is need to be maintained from the first tooth appeared.<sup>10,11</sup> The parents must understand and implement the importance of tooth brushing and limitation of sweet consumption for oral health. Dental caries can be minimized by eliminating plaque as a significant constituent in caries formation. Removal of plaque can be achieved by brushing teeth, and also the usage of dental floss and mouthwash. Eating high carbohydrates foods frequently may increase the potential of caries formation because dental enamel will not have time to remineralise.<sup>10,11</sup>

In the present study, a three quarter of parents gave their toddler biscuit and cakes which had high sugar composition; prevalence of caries is related and correlated with the form of sugar being ingested with the frequency of intake of type of cariogenic food.<sup>10,11</sup> Other study revealed 76.7% of parents were believed sugary food has a role as the major

factor in caries pathogenesis and fluoride is used in the prevention of dental caries.<sup>10</sup> Similar study also showed the behavior of parents, especially mothers, influences the children's oral health, because mothers aside of being the decision maker for the children, they also have careers and working.<sup>12</sup>

The study in Saudi Arabia also found that there was a statistically significant relationship between parents' classification, educational background, and overall knowledge related to oral health, mothers, and parents who hold bachelor degrees were more aware related to children's oral health. These findings are similar to multiple studies which have proven advanced mothers' awareness and their unambiguous point of view concerning children's oral health through maintaining caries-friendly diet and persistent toothbrushing. The socioeconomic groups, well-educated families, and their appreciation of primary dentition importance were correlated each other. Study conducted by Alshammari et al has revealed negative statistical significance between age group, number of children, monthly income level, and overall knowledge related to oral health, these findings differed from one study conducted by Kim Seow.<sup>13</sup>

In this study, most of the toddlers did not have a dental examination and treatment for more than 12 months; while first their toddler dental visits according to American Academy of Paediatric Dentistry (AAPD) should be at 12 months of age.<sup>10</sup> Other study showed 64% of parents were examined their children's teeth, 44% of them received dental health information from the dentist, while only 38% visited the dentist after 1 year and the average overall knowledge of parents toward dental health was medium 7.97 points out of 16.0 points. Many studies indicated that many parents had positive perceptions toward their children's dental health. nevertheless, it also described a high percentage of mothers ignoring the benefits of preserving primary dentition as permanent teeth will replace deciduous teeth. Thus, early childhood caries did not generate any impedences to those mothers, which is a serious concern because dental caries inflicts a cumulative process and could influence those children later on throughout their lives. Deciduous dental caries which left untreated increases the risk of having permanent dentition caries which is accompanied by altered social self-esteem, and growth deficiencies.<sup>13,14</sup>

In the present study showed less than half of the parents did not know fluoride as an active ingredient of toothpaste, and other study showed several positive feedbacks from the parents about their children's fluoride use in which 51.2% stated that they provide fluoridated toothpastes for their children.<sup>10</sup> Study in India revealed that parents need to brush child teeth after eruption of all deciduous teeth. The first visit of their children to the dentist should be done at age three or four. Oral hygiene of their children is significantly associated with perception of their mother, while in this study showed 42.3% of mothers of toddlers are high school graduates.<sup>10</sup> The results revealed incongruence between answers on the questionnaire. All respondents are in productive age. According to Hamadi, unworking parents have more time and tend to pay more awareness for children's health. The higher education background will have better knowledge. high educated mother with good dental health knowledge has inappropriate health behavior.<sup>15</sup> This finding indicates that a number of participants were not aware about dental and oral problems of their toddler.

Several factors which influence children's behavior which therefore affect their oral health, such as cognitive competence, family, and society. Treatment administration during pediatric dental visits can be terminated or interrupted due to children's negative behaviors, which results in poor oral health outcomes. A cross-sectional study in Saudi Arabia found that anxious children were more likely to have a minimum of one untreated dental caries compared to cooperative children. Children with dental fear had more carious teeth and fewer sound permanent teeth. Children's negative behaviors can lead to treatment termination or incomplete dental therapy, resulting in fewer restorative treatments, and hence a lower association with filled surfaces.<sup>16</sup>

Alternative behavioral management choices using optional services and application, such as computerized local anesthesia, oral sedation, and general anesthesia, although effective in managing patient behavior, tend to be costly and are associated with a possible relapse of oral health problems.<sup>14</sup> Family which is classified in middle and low-income families has several limitations. Thus, even mothers knowing about healthier choices, they could not afford and provide for the member of family, since they are the most expensive. Living under vulnerable states makes it difficult for parents to earn healthier food, to obtain hygiene items, to have a satisfactory house.<sup>16</sup> In Brazil, the Human Development Index, average household income, and the number of public primary healthcare units were not associated with the proportion of preschool children with untreated decayed teeth in the poorer neighborhoods in southern Brazil. However, these indicators have been associated with the proportion of children with filled teeth living in richer areas.<sup>17</sup>

The relationship test results showed that the correlation test showed a significant positive relationship between the role of the father's upbringing on the dimensions of emotional response, negative attachment, moral role of role, provider of androgynous role with the strength of character. This study's results align with Asy'ari and Ariyanto (2019); Basuki and Indrawati (2017) that there is a positive relationship between paternal parenting and intellectual development and character building of adolescents. This is because father is one of the parents who are responsible for carrying out parenting, so the role of the father's upbringing is part of the factors that affect the cognitive development and moral development of the child.<sup>18</sup>

This study could serve as a baseline for future longitudinal prospective studies, with more confounding factors targeting different regions in Indonesia. Our study has some limitations. The cross-sectional design prevents the establishment of causality between variables. The study limitation such as limited sample size, but this was due to the sampling strategy, i.e., participants were sampled in their homes and only in one specified area. Moreover, recall bias may impact results to some extent. Further research is need to be done in order to collect the knowledge, attitude and practice of their parents in another public health services about dental health with other examination such as def-t and nutritional status of the toddler. Government and non-governmental organization (NGO) are expected to establish Oral health promotion in early childhood with appropriate age of joining preventive program and behavioral aspects in urban and sub urban regions.

## 5. CONCLUSION

The high rate of toddlers aged 1-59 months in Posyandu of Pisangan District, Ciputat Timur, Tangerang Selatan consumed sweet diet and drinking habits, incorrect brushing methods, lack of appropriate behavior of their parents about dental and oral health of their children, minimal visits to the dentist or dental health center in order to examine their dental and oral health.

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