

## MOTHER'S EDUCATION AND KNOWLEDGE ON CARIES AND PERIODONTAL STATUS FOR CHILDREN OF 3-6 YEARS IN TEMORAN VILLAGE'S UNPROSPEROUS COMMUNITY

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### ABSTRACT

**Background:** Dental caries is a major problem in children's oral cavity. Beside caries, the prevalence of gingival bleeding in children was also by plaque buildup due to poor oral hygiene. Toddlers are one of the groups most vulnerable to dental and oral diseases because they generally still have behaviors or habits that are less supportive of dental health. Primary teeth are indicators of dental health in preschool children needed to assess the dental health of children. Mother's education, socio economic, and knowledge is one of the factors that affect health status. **Objective:** This study aims to determine the relationship of mother's education and knowledge of the status of caries and periodontal in children aged 3-6 years. **Methods:** This study used observational analytic with cross-sectional and total sampling conducted in Paud Temoran Village, Sampang with respondents of 50 mothers and their children. WHO and dmft examination sheet to measured child periodontal and caries status. Questionnaire sheet to measured mother's knowledge. Data analysis used spearman correlation test. **Results:** Statistical results between the level of education and caries status got a significant correlation, besides the results of statistics on education, knowledge and socioeconomic levels with periodontal status show insignificant correlation. **Conclusion:** There was a significant correlation between the level of education and caries status while the level of education, knowledge and socioeconomic with periodontal status there is no significant correlation.

**Key words:** mother's education, toddlers, caries, periodontal.

### INTRODUCTION

The incidence rate of dental and oral health problems in Indonesia is high. Based on Regional Health Research (RISKESDAS) in 2018, the national prevalence of dental and oral problems was 25.9%, with the national prevalence of active caries being 43.4%. (1) Patients with dental caries in Indonesia have a prevalence of 50-70% with the largest sufferers being toddler group. (2-5) Dental caries is a result of poor oral hygiene. Dental caries is formed because there was food waste that sticks to the teeth, which in turn causes calcification of the teeth. As a result, teeth become porous, cavity, and even broken. (6-8) Host, microorganisms, substrate, and time are the main factors that can cause caries. Caries severity can be influenced by a number of risk factors, that is caries experience, socioeconomic status, age, sex, education, geography, and behavior towards dental health. (9) In children up to 5 years of age, dietary choices and oral hygiene behavior are dominated by parents. The attitude of parents is influenced by several factors such as dental and oral health behaviors, as well as various other sociodemographic factors. (10)

Periodontal abnormalities can occur since children. The most common type of periodontal disorder that found in children is gingivitis. Previous research reported that 81% prevalence of gingivitis among school children.(11) Periodontal abnormalities and dental caries are diseases in the oral cavity that can cause pathological tooth loss. There are various measurement index for periodontal health aspects such as Plaque Index (PI) and Gingival Index (GI) by Loe & Silness, WHO Periodontal Index (CPI), Papillary Bleeding Index (PBI), Simple Oral Hygiene Index (OHI-S), Personal Hygiene Performance (PHP), and so on.(12)

It is widely recognized that the behavior of parents, especially mothers, affects the health of their children. Several factors such as mother's education, work, age, knowledge, attitude, and behavior can provide insight to improve their health habits and their children's health indirectly. Therefore, the habit of brushing the mother's teeth, eating habits, and choice of food consumed is directly related to their children.(13) Someone who is highly educated will have better health behaviors than those with low education because the child's health behavior will follow the health behavior of his parents. Parents with low knowledge about dental and oral hygiene are predisposing factors of behavior that does not support oral and dental hygiene.(14) Someone with a low socioeconomic level will experience poor health status including dental and oral health due to lack of knowledge about dental and oral health. Someone who has a socio-economic level in terms of higher education will tend to have better knowledge about dental and oral health.(15)

A significant association was reported between maternal education levels and the oral hygiene status of their children. Research showed that the frequency of brushing teeth in parents is significantly related to the frequency of tooth brushing in their children, besides how to brush the teeth and the properness of oral hygiene in older people can affect the frequency and quality of tooth brushing in children, because the children learning a lot about the behavior of their parents so it becomes predictable that they follow the behavior of their parents to brush their teeth.(16)

Based on data from the Central Statistics Agency (CSA) of Sampang Districts, the number of poor people in Sampang Districts still occupies the highest number in East Java. In 2015 it reached 25.69% or 240,350 people out of a total population of 936,801 people. Furthermore, in 2016 there were 24.11% or 227,800 people out of 947,614 people and in there were 23.49% or 225,130 people out of 958,514 people.(17) Based on these data, there were no studies on maternal education and knowledge of children's caries and periodontal status in unprosperous communities in the village of Temoran, Sampang, Madura. This study aims to determine the relationship of mother's education and knowledge of the status of caries and periodontal in children aged 3-6 years.

## **METHODS**

This study used observational analytic with cross sectional. The population in the study were mothers and their children aged 3-6 years in unprosperous communities in Temoran Village, Sampang, Madura in May-July 2018. The study was conducted in Paud Temoran Village, Sampang, Madura.

The study sample was children aged 3-6 years with their mothers. By not distinguishing gender, which corresponds to the sample criteria, are: mother of toddlers who is willing to be the object of research, mother of toddlers who is willing to sign informed consent, the children who are 3-6 years old are willing to be the object of research, and cooperative. The sampling technique used in this study is the total sampling technique, which is the sampling technique taken totally from the population.

The child caries and periodontal status was measured through direct observation of the subject's oral cavity based on the status of primary teeth according to Riskesdas 2017 and the calculation of caries status will be measured through dmft-t calculations according to WHO 2013 using the dmft index while the calculation of periodontal status will be measured through WHO

index which is divided into two examinations, bleeding on probing and pocket. This research involves participants in the process using a questionnaire that was accordant with the ethical research principle based on the regulation of research ethic regulation. The present study was carried out in accordance with the research principles. This study implemented the basic principle ethics of respect, beneficence, non-maleficence, and justice.

Mother's education level is the last formal education that has been taken by the mother and is divided into 5 groups: kindergarten, primary school, junior high school, senior high school, diploma/bachelor. Mother's knowledge about dental and oral health will be measured through a questionnaires regarding the pattern of tooth brushing and children's diet. The obtained data from questionnaires were analyzed by Spearman test using SPSS.

## RESULTS

The children caries's prevalence aged 3 - 6 years in unprosperous communities in Temoran Village has a high dmft value of 5.82 with a 86% percentage of 50 children who have been examined. Based on the Spearman statistical test, the p-value was 0.017 (p-value < 0.05) which showed that there is relationship between mother's education and children caries's status.

Table 1. Correlation between Mother's Education and Children Caries's Status

Mother's education	Total	dmft	Information	Significance
Kindergarten	3	7,34	Very High	Correlation Coef. (r) = - 0,335 p-value = 0,017
Primary School	29	6,93	Very High	
Junior High School	7	5	High	
Senior High School	10	3,3	Middle	
Diploma/Bachelor	1	0	Very Low	

Table 2. Correlation between Mother's Knowledge and Children Caries's Status

Mother's Knowledge	Total	dmft	Information	Significance
Low	2	4,5	High	Correlation Coef. (r) = - 0,063 p-value = 0,663
Moderate	33	5,97	High	
High	15	5,67	High	

Table 3. Correlation between Economic Status and Children Caries's Status

Economic Status	Total	dmft	Information	Significance
<Rp 100.000	37	6,1	High	Correlation Coef. (r) = 0,027 p-value = 0,853
Rp 100.000 - Rp 1.000.000	12	5,17	High	
>Rp 1.000.000	1	3	Moderate	

Table 4. Correlation between Mother's Education and Children Periodontal's Status

Mother's education	Prevalence	bleeding	pocket	Significance
Kindergarten	0	0	0	Correlation Coef. (r) = 0,195 p-value = 0,174
Primary School	2,6	13	0	
Junior High School	6	12	0	
Senior High School	6	18	0	
Diploma/Bachelor	0	0	0	

Table 5. Correlation between Mother's Knowledge and Children Periodontal's Status

Mother's Knowledge	Prevalence	bleeding	pocket	Significance
Low	2	4	0	Correlation Coef. (r) = 0,051 p-value = 0,723
Moderate	0,73	24	0	
High	1	15	0	

Table 6. Correlation between Economic Status and Children Periodontal's Status

Economic Status	Prevalence	bleeding	pocket	Signifikansi
<Rp 100.000	0,73	17	0	Correlation Coef. (r) = - 0,002 p-value = 0,987
Rp 100.000 - Rp 1.000.000	1,33	16	0	
>Rp 1.000.000	0	0	0	

Based on the Spearman statistical test on Table 2, the p-value is 0.663 (p-value > 0.05) which showed that there is no relationship between mother's knowledge and children caries's status. Based on Table 3, the Spearman statistical test shows the p-value is 0.663 (p-value > 0.05) which showed that there is no relationship between parent's income and children caries's status. The children periodontal's prevalence of bleeding on probing aged 3-6 years in unprosperous communities in Temoran Village is 20% of 50 children and no pocket from 50 children who have been examined.

Based on the Spearman statistical test on Table 4, the p-value was 0.174 (p-value > 0.05) which showed that there is no relationship between mother's education and children periodontal's status. Based on the Spearman statistical test on Table 5, the p-value is 0.723 (p-value > 0.05) which showed that there is no relationship between mother's knowledge and children periodontal's status. Based on the Spearman statistical test on Table 6, the p-value is 0.987 (p-value > 0.05) which showed that there is no relationship between parent's income and children periodontal's status.

## DISCUSSION

The distribution of caries status of children at the age of 3-6 years in Temoran Sampang village showed an average dmft of 5.82 which according to the classification of caries severity

according to WHO<sup>7</sup> showed high caries severity. The high severity of caries in these children can be influenced by diet and hygiene patterns of children. In the study of the relationship between the education level of mothers with caries status of children aged 3-6 years in poorer communities in the village of Temoran Sampang using the Spearman test technique. Based on the data tested and obtained, it can be concluded that there is a significant relationship with the education level of mothers with caries status of children aged 3-6 years in poorer communities in the Samporan Village. The results of this study are in accordance with previous research on the relationship of education level, socioeconomic level and level of knowledge of parents about dental care with the incidence of dental caries in children under five in the village of Mancasan Baki Sukoharjo.(18) This study concluded that maternal education levels were related to the incidence of caries in children under five in Mancasan Village. There are similar results with the results of another study of the relationship of maternal behavior regarding dental and oral health care to the dental caries status of children reviewed based on knowledge, education level, and social status in the ABA 1 TK Banjarmasin.(14)

Based on the Spearman test and obtained data, it can be concluded that there is no significant relationship to the knowledge of mothers with caries status and periodontal status of children aged 3-6 years in poorer communities in the Samporan Village. The results of the study on the relationship of knowledge of mothers with caries status are also in line with the another research which concluded that there was no relationship between the level of knowledge of parents about early dental care and the incidence of dental caries in preschool children in Mentari Indonesia TK Malang.(19)

Based on research on the relationship of the economic status of mothers with caries status of children aged 3-6 years in underprivileged communities in Temoran Sampang Village using the Spearman test technique. Based on the test and obtained data, it can be concluded that there is no significant relationship to the economic status of mothers with caries status and periodontal status of children aged 3-6 years in poorer communities in the Samporan Village. The results of this study are also in line with the another research which concluded there was no correlation between socioeconomic status and the incidence of dental caries in children at Hang Tuah Bitung Kindergarten.(15) Previous research conducted also showed no influence between the level of family income on caries status in kindergarten students in Rappocini District.(20)

The distribution of bleeding on probing for periodontal status of children aged 3-6 years in Temoran Sampang village showed that 20% of children with an average of 0.86 while for pocket it is not found in children aged 3-6 years in Samporan Temoran Village. The study of the relationship between the education level of mothers with periodontal status of children aged 3-6 years in unprosperous communities in the Samporan village of Sampang using the Spearman test technique. The results of this study are in accordance with previous study of the relationship between the level of education and knowledge of mothers with a description of dental hygiene in the village of Ngagel Rejo Surabaya. This study concluded that maternal education levels were not related to dental hygiene of children in the village of Ngagel Rejo Surabaya.(21)

Based on research data about the relationship between knowledge of mothers with periodontal status of children aged 3-6 years in unprosperous communities in Temoran Village, it can be concluded that there is no significant relationship. The results of the study of the relationship between knowledge of mothers with periodontal status in line another study of the relationship between knowledge, attitudes and motivations of pregnant women with the incidence of periodontitis in Manado's Ranotana Weru Health Center stated that there was no relationship between knowledge and the incidence of periodontitis.(22) There is no relationship between knowledge and the incidence of periodontitis, one of which can be influenced from the socio-economic level.

Based on research data on the relationship of economic status of mothers with periodontal status of children aged 3-6 years to unprosperous communities in Temoran Village

it can be concluded that there is no significant relationship. Children have a habit to eat snacks and sweet foods and tend to consume sweet foods that will increase the incidence of caries and reduce the health of the oral cavity. Snacks and sweet foods are packaged in attractive packages, sold at relatively cheap prices and easy to get. The children with high income parents tend to consume sweet foods that cause caries and reduce the cleanliness and health of the oral cavity, especially if after eating sweet foods they don't immediately clean their oral cavity by brushing their teeth.(23)

## CONCLUSSION

There is a correlation between the education level of mothers with caries status of children. There is no correlation between the education level, knowledge, and economic status of mothers with periodontal and caries status of children aged 3-6 years in unprosperous communities in Temoran Sampang Village.

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