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**CORRELATION BETWEEN THE KNOWLEDGE LEVEL OF MOTHER ON
DENTAL HEALTH AND THE CARIES SEVERITY LEVEL OF CHILDREN IN
BARITO KUALA**

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ABSTRACT

Background: Dental and oral health is inseparable. Dental health problems can affect the growth and the development of children. Dental caries or cavity is one of the dental health problems that often find in children. The knowledge of mother on certain things underlies the formation of behavior that supports oral health in children. A mother is the closest person to child that holds a significant role to guide, educate, remind, and facilities children's need for oral and dental health. **Purpose:** This research aims to analyze the relationship between maternal knowledge about dental health and the severity of caries in children in Barito Kuala Regency. **Methods:** This research is an observational analytic cross-sectional study. The number of samples was 32 respondents with random sampling. Data collection techniques used primary data in mothers and students of Nusa Indah Berangas Kindergarten, Alalak SubDistrict. The measurement of knowledge level used a questionnaire that had been tested for validity and reliability while the measurement of caries severity was based on def-t index. **Result:** Results of Spearman test showed ($p < 0.05$) the direction of positive correlation. The worse the level of knowledge, the higher the severity of caries. The correlation coefficient was 0.599 (medium correlation strength). **Conclusion:** There is a correlation between maternal knowledge about dental health and the severity of caries in children aged 4-5 years at the Nusa Indah Berangas Kindergarten, Alalak SubDistrict, Barito Kuala Regency.

Keywords: Children Aged 4-5 Years, , Dental And Oral Health, Dental Caries, Mother Knowledge

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INTRODUCTION

The role of the mother in a family is not only limited to be a wife, a mother, a leader, a caregiver, a supporter, a supervisor but also an early educator for her children. Dental and oral health is part of the body that can not be separated, so that they hold a significant role in determining the overall health of a person. Dental and oral health can affect the growth and the development of children, resulting in their quality of life.¹

Dental caries is one of the dental and oral health problems. Caries or tooth cavity is a multifactorial disease that happened in tooth enamel hard tissue, dentin and cement. The damaging process started from the email and

continued to the dentin. Factors that cause caries are host, microorganism, substrate, and time.² Dental caries incident is affected by several risk factors that are gender, habit, age, diet pattern, social economy and oral hygiene maintenance behavior. Deciduous tooth caries is faster because the email structure is less dense and thinner than permanent tooth.³

The 2018 RISKESDAS (Basic Health Research) shows that the proportion of dental and oral problems, especially dental caries in South Kalimantan was 46.90%, meanwhile in Barito Kuala was 59.67%. The 3-4 years old group was presented with a prevalence of 39.03% and the 5-9 years old group was 56.17%. This matter shows

that the 5-9 years old group is vulnerable to experience caries.⁴

The development of caries is affected by parental attitude and behavior, especially the mother. The oral health knowledge in a mother is an early form of attitude and behavior to support children in maintaining their oral health. A mother is the closest parent to a child that knows the development of a child in education and health aspects, where the knowledge is important to form the behavior and attitude in maintaining a child's dental and oral health.⁵ James Pontunuwu (2013) states that the lack of knowledge will lead to dental and oral health problems, especially caries.⁶ Based on the result of a research by Afiati (2017) in Banjarmasin, South Kalimantan, there is a correlation between the knowledge of the mother with the caries severity level. This matter happened because there is a lack of dental and oral health knowledge among the mothers, affecting caries severity level in children. One of dental and oral health problems is caries that is the most common disease that found in the society of Barito Kuala Regency.⁷

Barito Kuala Regency has 40.858 hectares of peat land areas, where its geographical condition demonstrated lowland area of 0.2-3 m from sea level. Barito Kuala regency has 90% wide of land area that is tidal swamps that produce water with acidity level between pH 3.5-4.5. Around 51.7% of Barito Kuala Regency residents are still using river water as daily needs.²

Based on preliminary study that had been conducted in Berangas Public Health Center, it is shown that Nusa Indah Berangas Kindergarten Alalak Sub-District Barito Kuala Regency still needs high treatment of dental and oral health. The purpose of this research is to find out the correlation between the knowledge level of mother on dental and oral health with the caries severity level of children's age 4-5 years old in Nusa Indah Berangas Kindergarten Alalak Sub-District Barito Kuala Regency.

MATERIALS AND METHODS

This research had obtained research permit and ethical clearance issued by Health Research Ethic Committee Dentistry Faculty Lambung Mangkurat University No. 016/KEPKG-FKGULM/EC/1/2020.

This research is an observational analytic research using cross sectional approach with 43 populations, the sampling was collected by random sampling using correlation formula that resulted in a total of 32 respondents. This research used aquadest and materials for sterilization including detergent, bleach and water. The tools used in this research were informed consent, questionnaires,

index examination sheet, handscoon, mask, nierbecken, sterilized diagnostic tools, flashlight, tissue, and tools for sterilization (basin and brush).

In this study, respondents were given an explanation of the research that was going to be conducted. Respondents filled the informed consent sheet, then the sample was selected in accordance to inclusion and exclusion criteria. The knowledge level was assessed by a questionnaire which was then continued by examining the caries severity level using def-t index and also recording the result.

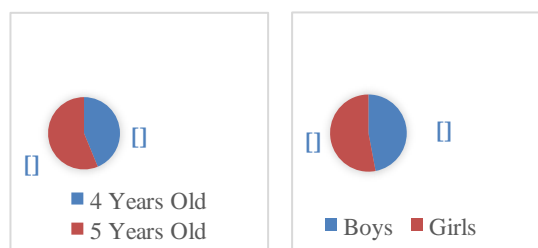
The variables are the knowledge level of the mother on dental health and the dental caries severity level of children. This research used direct data from the respondents who filled the questionnaire and those that was already examined for caries severity level.

The knowledge was measured with the questionnaire that was already tested for its validity and reliability with questions in total of correct (1) and false (0) marking. The category of good knowledge includes 9-12 true answers, moderate category includes 5-8 true answers, and bad category includes 0-4 true answers. The measuring of caries severity was by using def-t index based on WHO in the category of: very low (0.0-1.1), low (1.2-2.6), moderate (2.7-4.4), high (4.5-5.5), and very high (≥ 6.6). The data analysis used correlation Spearman test. The data processing used SPSS software.

RESULTS

This research was conducted in Nusa Indah Berangas Kindergarten Alalak Sub-District Barito Kuala Regency on February 2020. The obtained results are:

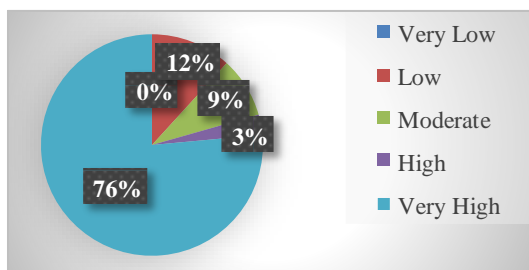
1. Research Data



Picture 1. The Respondents Based on Gender and Age

Picture 1 shows the number of research respondents comprising of 32 people. The female respondents were more than the male respondents with the total of 5-years-old children is more than the 4-years-old children.

2. Analysis and Research Results



Picture 2. The Frequency Distribution of the Caries Severity Level

Picture 2 shows that the research respondent was comprised of 32 people. The number of respondents in the very high of severity level category was higher than other categories. It is showed that 26 children (76%) were assessed into very high category of caries severity, whose mother was observed with good level of knowledge category (4 people), moderate category (17 people), and bad category (5 people). The result of bivariate data analysis using correlation Spearman test obtained a significant value of 0.00 ($p < 0.05$).

The research hypothesis can be proven that there is a correlation between the knowledge level of mother on dental health and the caries severity level of children in Barito Kuala Regency. The correlation coefficient that was obtained from this research was 0.599 which means the correlation between both of the variables is included in the moderate category. The correlation direction between the said variables was positive which means that the worse the knowledge level of a mother, the higher the caries severity level in children.

DISCUSSION

The maintenance of dental and oral health in children's age 4-5 years old still depends on their mother that is the closest person of the children. Referring to Table 1 of respondent distribution based on gender, the number of female respondents are higher than the male respondents, that was 17 children (53%) and 15 children (47%) respectively. A research by Wala (2014) revealed that the period for tooth eruption in children is faster in girls, so that the incident of caries during childhood and adolescence is higher in girls than boys.⁸ Girls tend to like to consume sweets and also more likely to be affected by hormones.⁹

The caries severity characteristics based on age can be seen in picture 1, showing that respondents who had caries severity comprised of 18 children (56%) at the age of 5 and 14 children (44%) at the age of 4. This result shows that 5-years-old

children have higher caries severity than 4-years-old children.

This research corresponds with Kiswaluyo (2010) stating that the children are more vulnerable to experience caries as they age. This happened because the frequency of the interaction between the etiologies of the caries and the pre-existing teeth.¹⁰

The results of this research obtained from the measurement of def-t index disclosed that the number of respondents in very high category was higher than those in other categories with a total of 26 children. Preschool children or 4-5 years old children have a habit to consume sweets and snacks. Consuming sweets 4 times a day will increase caries occurrence faster.¹¹

The frequency distribution for the level of knowledge characteristic among the respondents based on the answer of the questionnaire presented a result of 9 mothers (28%) in good category, 56% in moderate level category, and 5 mothers (16%) in low level of knowledge category. This shows that mother with moderate category is more than those with good and low level category. This research corresponds with Afiati (2017) that shows the moderate category of knowledge had higher distribution than the good and low category. This is resulted from the lack of attendance in most socialization held by local health officer such as education of dental health. The other factor might be caused by the lack of apprehension upon the topic that was socialized by the local health officer resulting in low level of dental health knowledge.⁷

Based on Benyamin Bloom (1906), it is mentioned that someone has different levels of cognition upon particular object that are knowledge, comprehension, application, analysis, synthesis and evaluation. The moderate level of knowledge in mothers also cannot really guarantee the level of caries severity. Knowledge is the foundation for behavioral formation. Someone that is not capable of knowing, explaining, and analyzing thing is considered as uneducated or lack of knowledge.⁷ The level of knowledge in a person greatly affects oral and dental hygiene. The attention and the role of a mother are very important since it will become a good example on how to maintain dental and oral health well. Therefore, the level of knowledge possessed by a mother will crucially influence the provision of guidance for children to maintain the dental and oral health.¹²

The aforementioned result corresponds with the research by Jyoti *et al* (2019) mentioning that there is a correlation between the level knowledge of the mother with the caries occurrence in children of Titi Dharma Kindergarten.¹³ The knowledge of parents, especially mother is

affected by several factors that are education, age, social economic status, environment and mass/information media.¹²

Most of the mothers construct the dietary habit by familiarizing their children with sweet and sticky foods, as well as formula or breast milk before bedtime at night. Such phenomenon will eventually develop children behavior to consume sweets, as the consequence of introducing sweet food since toddler. The parenting of the mother in conducting good dietary habit is arranged from the understanding about the best diet. Good knowledge about dietary habit related to sweets diet is remained low that the high prevalence of dental caries in children is persisted.^{13,14}

The parenting of the parents, especially the mother in preventing caries in children is by teaching the children about the best toothbrush selection, the proper way to brush their teeth, the exact frequency for tooth brushing, the use of toothpaste and mouthwash containing fluoride, the recommendation to reduce the consumption of sweets and replacing them with high-fibre foods, and the direction to routinely visit the dentist.^{15,16} The family, especially mothers, are the initial foundation in building a broad social-economic life. The development of the children verily requires active roles of the family to provide basic knowledge and skill, as well as to imprint habits. Such habits can be in the form of applying healthy lifestyle. Based on this research, caries is prevails as the most common dental and oral health problem that often found. The knowledge of the mother is very needed to know what happened to children because mother is the first person that discerns any abnormality that happened in children.¹¹

Based on this research, it can be concluded that there is a correlation between the knowledge level of mothers with the caries severity level of children's age 4-5 years old in Nusa Indah Berangas Kindergarten Alalak Sub-District Barito Kuala Regency with moderate correlation level.

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