

# The Association between Mother's Knowledge Regarding Oral Health and Caries Experience of Pre School Children

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**Abstract:-** Caries prevalence in children below the age of 6 year-old in developed country was 1-12% and in developing country was 70% while in Indonesia was 90%. Mother's knowledge regarding oral health is expected to reduce caries experience of preschool children. The aim of this study is to find out the relationship between Mother's knowledge and the caries experience of children. A cross sectional study was performed at kindergartens in Padang city. The sample was 64 pairs of mother and children (3 - 6 year of age) which was selected by proportionate stratified random sampling. Mother's knowledge level was obtained through a questionnaire of oral health. Caries experience was assessed using the def-t index. The obtained data was analyzed statistically using T-test. On average, def-t index of the 64 children with caries experience was 6.1. More than half of mother (57.8%) was senior high school graduate. Mother who was junior high school graduate had their children experiencing caries with 9.86 of def-t index. Most of the mother had low level of knowledge (73.4%). Mother with low level of knowledge had their children experiencing caries with 6.13 of def-t index while mother with high level of knowledge had their children experiencing caries with 6.24 of def-t index. The t-test result showed  $p=0.93$  and  $p$  value  $> 0.05$ . There was no significant association between caries experience of children and mother with low or high level of knowledge. The mother's level of knowledge regarding children's oral health did not affect the number of children's decayed teeth. There was no significant association between mothers' knowledge and caries experience of preschool children.

**Keywords:-** Caries Experience, Mother's Knowledge, Def-t Index.

## I. INTRODUCTION

World Health Organization stated that dental caries of school children of all over the world in 2012 was 60-90% [1]. It was reported that in United States around 2011-2012, 22.7% of children at the age of 2-5 years had caries experience [2]. The incidence of caries was higher in primary teeth than permanent teeth in some Asian and African countries [3]. The Third National Oral Health Survey in 2007 at China showed caries prevalence of 66% preschool children at the age of 5 year [4].

The study of Disease Control And Prevention of Ministry of Health in Indonesia in 2007 reported caries increasement in children under the age of five and preschool from 24% to 28% [5]. *Riskesdas* in 2013 reported the percentage of people with dental and oral health problem around 1-4 year of age was 10.4% while in group of 5-9 year-old was 28.9% [6]. The prevalence of caries in below 6 year-old children in developed countries was 1-12% whereas in developing countries was 70% and in Indonesia was 90% [7]. The prevalence of caries in kindergarten children in Padang city in 2009 was 52% [8].

Dental caries was caused by several factors such as etiological factors and predisposing factors. The etiological factors are bacterial plaque, host, diet, and time. While predisposing factors are gender, age, geographical location, social culture and behavior. Behavior consists of knowledge, attitude and action [9].

Mother's knowledge about oral health will determine the child's oral health status. Oral health status in children should be an important concern of the mother even though it is still in the primary stage. The condition of primary teeth will affect the development and growth of permanent teeth. The decay of primary tooth may affect in general health of children during their growth and development [3].

Based on the data of Public Health Office of *Padang* from January to October 2015, top ten of frequent dental disease in *Rawang* Health Center was dental caries with the number of visits at 1096 cases [10]. This study aims to find out the relationship between mother's knowledge about oral health with caries experience of children.

## II. METHODS

This study is observational analytic with cross-sectional design. The data was obtained in March 2016. The sample of this study was 64 pairs of mother and kindergarten and preschool children in working area of *Rawang* Health Center in Padang. Sampling was done by proportionate stratified random sampling technique.

The data was collected through questionnaire to obtain the level of mother's knowledge regarding oral health and the caries experience of children was examined by def-t index. The collected data were analyzed by using Social Science Statistics Package (SPSS) with confidence

level of  $p < 0.05$  (with significant level of 95%). The relationship between mother's knowledge about oral health with caries experiences of children was analyzed using T-test.

### III. RESULTS

In this study, the age of the mother was ranged from 24 - 48 year-old with the most frequent age of 31-35 year-old (51.6%).

Mother's Age (Year)	Frequency	Percentage
24-30	18	28.1 %
31-35	33	51.6 %
36-40	8	12.5 %
41-48	5	7.8 %

Table 1:- Distribution of Mother's Age Frequency

Mother's level of education was varied from junior high school to university. More than half of mother had high school / vocational education (57.8%).

Variables	Frequency	Percentage
Junior High School	7	10.9 %
Senior High School	37	57.8 %
University	20	31.2 %

Table 2:- Distribution of Mother's Education Frequency

Level of mother's knowledge regarding oral health was analyzed based on median value because the data was not normally distributed with the median of 86.7. Knowledge was categorized high when the score of respondent is higher than median and low when the score of respondent is lower than median. Most of the mother had low level of knowledge regarding oral hygiene (73.4%).

Variables	Frequency	Percentage
Low	47	73.4 %
High	17	26.6 %

Table 3:- Distribution of Mother's Knowledge Regarding Oral Health Frequency

Most of children were male (59.4%). The average age of children was 4.7 year-old. The caries experience of children was seen with a def-t index based on the WHO criteria. In this study, the index of def-t children was categorized as high (6.1) which means children have caries experience in 6 teeth.

	Median ( Minimum – Maximum )
def-t Index	6.1 ( 0.00 – 18.00 )

Table 4:- Distribution of Def-T Index of Children

Based on mother's education, it can be seen the result of statistical test by using t-test that there is no significant difference between caries experience of children with mother whose level of education is junior high, senior high school / vocational high and university, with  $p = 0.61$ .

Level of education	N	The Average of caries index	P Value
Junior High School	7	9.86	0.61
Senior High School	37	5.70	
University	20	5.70	

Table 5:- Relationship of Mother's Education and Caries Experience of Children

Based on data analysis using T-test, it can be seen that there is no significant association between caries experience of children whose mother with low level of knowledge and children whose mother with high level of knowledge ( $p = 0.93$ ).

Level of mother's knowledge	n	Average of index def-t	Difference of Average of index def-t	P value
Low	47	6.13 ± 4.11	- 0.108 ( - 2.626 – 2.410 )	0.932
High	17	6.24 ± 5.29		

Table 6:- Relationship of Mother's Knowledge and Caries Experience of Children

### IV. DISCUSSION

The results of this study indicates that the average children have caries experience in 6 teeth based on the mean of def-t index which is 6.1 with in average age of 4.7 year-old. The def-t index of 6.1 was categorized as high based on WHO criteria. In line with the study of Sutisna in 2010 at Pantai Cermin, Serdang Badagai, North Sumatra, children at the age of 36-71 months with a def-t index of 6.76 [11]. This is probably due to pre-school children is one of the groups that susceptible to dental and oral disease due to the lack of behavior in maintaining oral health. Risk factors that might affect caries in pre-school children include dietary patterns, regularity in brushing teeth, salivary activity and mother's behavior in maintaining the child's dental health. The primary teeth are also susceptible to caries because they have less dense and thin enamel structures [13].

In this study showed that most of the mother (73.4%) had low level of knowledge. This can be attributed to level of education which was Senior high school (51.6%) and Junior High School (10.9%). The caries experience of children with junior high-educated mother was 9 to 10 teeth (def-t index of 9.86) whereas children with mother with high school/vocational education had 5 to 6 teeth caries experiences (def-t index of 5.70). In line with the study of Ru-Shing Tang's research at Kaoshiung Taiwan in 2011 stated that mother with higher level of education have higher level of knowledge than mother with low level of education. [14]. The same finding was obtained in the study by Hussein in 2013 in Malaysia that only 12.5% of parents have good knowledge but the respondents in this study involved father and mother [7]. Mother is the one who spend the most time with children so that mother can play a role in improving children's dental health [15].

The result of statistical test with T-test showed no significant association between the level of mother's knowledge about oral health with caries experience of children ( $p = 0.93$ ). Mother with a high level of knowledge and a mother with a low level of knowledge both had children with caries experience in 6 teeth. Mother's knowledge is only one of the risk factors that affect the occurrence of caries, so it is necessary to examine other risk factors that affect caries in preschool children.

#### IV. CONCLUSION

There was no significant association between mother's knowledge and caries experience of preschool children. Both children whose mother with low level of knowledge and high level of knowledge had caries experience in 6 teeth. Mother's knowledge about oral health must be followed by positive attitudes and actions towards the child's oral health so that it can reduce the caries index and caries experience in pre-school children.

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