

## PARENTAL BEHAVIORS IN INFLUENCING DENTAL CARIES OCCURRENCE AT THE FIRST AND SECOND GRADERS OF ELEMENTARY SCHOOL

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### ABSTRACT

**Background:** In 2007-2013, the prevalence of dental caries occurrence in Indonesia was reportedly high. No less than 63% of Indonesian people, especially children, had suffered from the mouth and dental diseases; one of which was dental caries. Parental behaviors were suspected as the most influencing factor to affect the level of the mouth and dental cleanliness on children. Those behaviors included cognitive (knowledge), emotion (attitude), and conative (skill) aspects.

**Objective:** This research is intended to investigate parental behaviors that influence dental caries occurrence at elementary school students.

**Methods:** This research constitutes cross-sectional research through purposive-sampling technique, with the use of logistic regression test.

**Results:** The results of two-fold logistic regression test had indicated that skill aspect resulted in 0.003 of p-value and 0.197 of OR, which defined that skill had contributed to dental caries occurrence with 19.7% of the degree of contribution.

**Conclusion:** The components of parental behaviors for dental care comprised some key aspects, such as knowledge, attitude, and skill. Out of the three, poor parental skill was allegedly more influencing upon dental caries occurrence at children.

**Key words:** Parental behaviors, caries knowledge, dental caries, elementary school students.

### INTRODUCTION

In normal, tooth brushing has been a conversant custom to Indonesian people and is a must-do activity in morning and or afternoon bathing, with 90.7% of whom as the doers. This has been phenomenal to the whole Indonesian as proper tooth brushing should be performed as a part of daily life, especially in the morning (normally after breakfast) and in the evening (before going to bed). Tooth brushing that is performed in both times is deemed to provide the doers with optimum result. Counterproductively,

tooth brushing in not-recommended times might cause new dental diseases; one of which is dental caries. This sort of disease is destructive to the dental structure and leads to the cavity (Wisnu, 2017 as cited in Abdullah, 2018).

Almost the entire provinces throughout Indonesia had reportedly undergone prevalence increase of dental caries from 2007 to 2013; only four of which showed the decline, to name North Maluku, West Papua, Jogjakarta, and Riau. In fact, the highest increases were found in

South Sulawesi (29.1%), East Java (28.6%) and Lampung (23.6%). Meanwhile, in respect to age criteria, dental caries occurrence was more common to people aging 5-8 years old (28.9%) than those of age 1-4 years old (10.4%) and 9-14 years old (25.2%) (Riskesdas, 2013).

Moreover, dental caries can be much more intense only if the patients leave it without any serious care within specific periods. The intenseness, further, occurs due to malnutrition and disruption on the chewing ability that is allowed to interfere with food absorption and digestion and, finally, negatively influences children nutritional status (Kusumawati, 2010). In addition, there are some other impacts of dental caries which most of the patients are common to experience, namely crap in teeth, food avoidance, halitosis, toothache, temporomandibular joint disorder, and severe toothache (with continuous and repeated painful sensation) (Ratna, 2011 in Arikhman, 2018).

In general, children are still found to have an improper habit that might ruin their dental health. The habit involves being lazy for tooth brushing, consuming too much sweet food continuously, sleeping after consuming sweet food without any tooth-brushing action afterward, and doing tooth-brushing lately (Fitriani, 2014). Research from Afiati (2017) highlighted the relationship of motherhood behaviors on dental and mouth care upon dental caries occurrence at children based on parental knowledge. Such knowledge can be acquired by nature or either by a plan through education. Parents who are found less informed about dental and mouth care can be addressed as a predisposition factor of certain skill of not promoting children's dental and mouth care (Noreba, 2015).

Further, parental actions to accompany, educate, and give a very modest example in daily experience are

considered precisely practical to improve children's dental and mouth care. By positive parental skill, the risk of dental caries occurrence at children can be lessened (Worang, 2014). Regarding the result of previous research, it was evident that as many as 74 out of 103 first graders of particular elementary school (coded as SD X) in Malang had suffered from dental caries. Moreover, the researcher had skilled a previous study on five parents through direct interview corresponding to children's dental and mouth health. The data acquired from the interview had indicated that parental attention to children's dental and mouth health, specifically on dental caries occurrence, was still very low. Referring to the result, thus, this current research aimed at investigating the dominant factor that contributed much on dental caries occurrence at elementary school students.

## **METHODS**

### *Study Design*

This current research met the design of the analytical observational study, by means of a cross-sectional approach.

### *Setting*

The research was skilled in November 2018 in one of the elementary schools in Malang.

### *Research Subject*

The samples in this study were 47 students from the First and Second Grades were recruited through non-probability sampling technique, which was purposive sampling with such criteria as, those aging 6-8 along with their parents, those suffering from dental caries, and those free from dental caries.

### *Instruments*

Questionnaire about parental behaviors and observational sheet were set

as the instruments to collect the data. The questionnaire comprised positive and negative questions and was designed randomly. In addition, there were four main indicators included in the questionnaire, namely the definition, the causes, the care, and the impacts of dental caries occurrence. Further, there were 15 questions in knowledge point. For an attitude point, three main indicators comprised the desires for dental caries prevention, mouth and dental care, and children's health, with 10 statements provided. Next, referring to the skill point, there were two indicators included regarding preventive and caring actions for dental caries occurrence, with six questions given.

#### Data Analysis

Multivariate analysis is used for the analysis test on two or more variables. It aims at identifying the most influencing independent variable upon the dependent one. The result of this sort of analysis can be detected from the expose value or commonly named as an odds ratio (Notoatmodjo, 2010). The use of the analysis method is defined by dependent variable involved. When the dependent variable is found categorical, thus, logistic regression analysis will be occupied. Conversely, if the dependent is in numeric form, linear regression one will be used (Dahlan, 2016). Assumptions of Logistic regression: (1) logistic regression does not require a linear relationship between the dependent and independent variables, (2) the error terms (residuals) do not need to be normally distributed, (3) homoscedasticity is not required, and (4) the dependent variable in logistic regression is not measured on an interval or ratio scale (Gregory, 2018). Therefore, logistic regression analysis was employed for this current research due to the variable status that met categorical form.

#### Ethical Consideration

This research has gone through an ethical test from Faculty of Health Sciences, University of Muhammadiyah Malang and obtained permission from National Unity and Politics of Malang Regency and Principal of the Elementary School. The authors confirmed that all respondents had obtained appropriate informed consent.

## RESULTS

### Characteristics of Respondents (Students)

**Table 1.** Distribution of Frequency of Respondents (Students) at the One of Elementary School in Malang in November 2018 (n = 47).

Criteria	Number of Respondents		Min	Max	Mean
	n (47)	% (100)			
Age:					
6 years old	3	6.4	6	8	7.2979
7 years old	27	57.4			
8 years old	17	36.2			
Gender:					
Male	26	55.3		-	
Female	21	44.7			

Based on Table 1, it is shown that the majority of the respondents were 7 years old, signifying 27 students or 57.4% out of the entire population of the respondents. Regarding gender, male respondents were superior in number, constituting 26 students or 55.3% out of the whole respondents engaged.

## Characteristics of Respondents (Parents)

**Table 2.** Distribution of Frequency of Respondents (Parents) at the One of Elementary School in Malang in November 2018 (n = 47).

Criteria	n (47)	% (100)	Min	Max	Mean
<b>Age (Years)</b>					
Pre-Adult (26-35)	21	44.7	26	55	37.1702
Post-Adult (36-45)	22	46.8			
Pre-Mature (46-55)	4	8.5			
<b>Educational Background:</b>					
Junior High School	2	4.3			
Senior High School	18	38.3		-	
Diploma-3	2	4.3			
Undergraduate	16	34			
Graduate	8	17			
Postgraduate	1	2.1			
<b>Occupation:</b>					
Private Employee	8	17			
Teacher	5	10.6			
Housewife	15	31.9			
Civil Servant	5	10.6		-	
Private Employer	8	17			
Entrepreneur	3	6.4			
Pension	1	2.1			
Lecturer	2	4.3			
<b>Monthly Income:</b>					
<1 million	8	17			
1-2 million	17	36.2			
2-3 million	6	12.8		-	
3-4 million	12	25.5			
>5 million	4	8.5			

According to Table 2, it is illustrated that most of the parents belong to the category of post-adult age (36-45 years old) (46.8%), senior high school background of study (38%), unoccupied (housewife) (31.9%), and 1-2 million of monthly income (36.2%).

## The Results of Multivariate Analysis on Independent Variables

**Table 3.** The Results of Multivariate Analysis on Independent Variables.

Variables	p-value	OR	CI 95%	
			Lower	Upper
Knowledge	0.998	0.000	0.000	-
Attitude	0.998	0.000	0.000	-
Skill	0.003	0.197	0.068	0.565

Referring to Table 3, it is identifiable that the result of logistic regression analysis is meant to define the dominant factor to influence dental caries occurrence at children, which includes attitude and skill variables. Further, the result of multivariate analysis had been reexamined by using Z score and finally shows, as illustrated in the table, that the latter is the most dominant factor that contributes to dental caries occurrence at children with 0.003 of p-value and 0.197 of OR value. This concludes that poor parental skill on dental health care might cause risk of dental caries occurrence at children up to 19.7% or 0.197-fold.

## DISCUSSION

The result of the research had indicated that parental skill on dental health care was of great contribution to dominantly cause dental caries occurrence at children. Further, it was found that parents had shown very poor performance in promoting dental health care, such as selecting or providing their children with good food, accompanying and monitoring them on dental health care, and routinely controlling their dental health to the dentists per six months. As a matter of fact, the risk of dental caries occurrence at children increased dramatically.

The researcher assumed that the occurrence happened due to poor

knowledge the parents had acquired, which was alleged to significantly affect the parental skill on dental health care in the daily practice. In nature, skill refers to something very urgent for daily practice. If ones show proper skill based on their possessed knowledge, therefore, everything they perform will lead to positive impacts. Contrarily, performing something with insufficient knowledge must lead ones to something rigorous. In addition, there must be ones equipped with excellent knowledge, but never can they apply it into the daily practice; which means that all the theories they have acquired remain useless.

Moreover, this research was found similar to that of Arianto (2014) which defined that good parental knowledge could raise the skill of dental and mouth health control on 6-12-year-old children in Sumberejo district. In addition, a similar finding was also revealed in the research of Atyanta (2015) quoted in Nurjannah (2016) describing that parental knowledge influenced dental caries occurrence at mentally-impaired children. In essence, knowledge is the most fundamental basis of one's behavioral building. Thus, parental knowledge will play a very essential role in promoting dental and mouth care for their children as an effort of dental caries prevention. The knowledge can be acquired by nature or either by the plan (through educational pathway). Parents who are found less informed about dental caries occurrence are deemed as part of the predisposition factor of the skill of not promoting dental and mouth health care on children (Noreba, 2015).

Based on the research of A'yun (2016), parental skill in making use of health facility was shown poor, which was suspected to increase the risk of dental caries occurrence at children. A very good example of proper parental skill on dental caries prevention at elementary school

children is by having a routine control to the dental health care unit. Children in the school-age period are still very dependent on their parents, especially mother. As found by this current research, there were still some parents equipped with poor behaviors; one of which was being ignorant to control their children's dental health to dentists per six months.

## CONCLUSION

Generally, parental behaviors consist of three main points, to name knowledge, attitude, and skill. Out of the three, skill is proved as the most influencing factor since it constitutes the outcome of unifying knowledge and attitude ones have acquired.

## SUGGESTION

Health workers must pay attention to the skill factor in dental care as one of the parental behaviors that might influence the incidence of dental caries.

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