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Relationship between Parent's Knowledge, Attitude, and Practice of Oral Health Maintenance with Oral Hygiene of 7 to 9-year-old Students

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Abstract: Childhood is the beginning of behavior formation; therefore, it is expected that parents can educate their children to behave properly to maintain oral health. This study aimed to evaluate the relationship between knowledge. attitude, and parental practice with the oral hygiene of children of 7-8 years. This was an analytical study with a cross-sectional design. Sampling was carried out using simple random sampling technique on parents and students aged 7-8 years at SD Banjarsari Bandung (elementary school). The study was conducted by using OHI-S examinations to students and giving questionnaires to their parents. The relationship between knowledge, attitude, and practice of parent's oral health maintenance with oral hygiene of the students was analyzed using the Spearman rank correlation analysis. The results showed that the correlation value between parental knowledge and student oral hygiene was 0.918 (>0.05), meanwhile the correlation value between parental attitude and student oral hygiene was 0.379 (>0.05), and the correlation value between parental practice and student oral hygiene was 0.419 (>0.05). All of the correlation values showed no significant relationships. In conclusion, there is no relationship between parent's knowledge, attitude, and practice of oral health maintenance with oral hygiene of students aged 7-8 years.
Keywords: parents; oral hygiene; students of elementary school

INTRODUCTION

Individual health behavior is the attitude and habits of individuals that are closely related to the environment, such as the family environment. Behavior that is based on knowledge, awareness, and positive attitude will be long lasting. If the behavior is not based on knowledge and awareness, it will not last long.[1] Parents are considered to have the knowledge to teach their children various basic things about maintaining a healthy body. The cultivation of oral health behavior should start at an early age and start from the family environment. Childhood is the beginning of behavior formation, therefore it is expected that parents can educate their children to behave correctly to maintain their oral health.[2] The 2018 National Basic Health Research showed that the highest proportion of oral and dental problems was in the 5-9 year-age group, which was 54.0% compared to other age groups from 3-65 years of age. This is also supported by the data that 94.7% of Indonesians have brushed their teeth every day, but only 2.8% of them brush their teeth at the right time, namely after breakfast and before bed.[3,4]

Dental health education in children aged 5-16 years is very important for the growth of their teeth and mental development. Therefore, it requires various methods and approaches to produce healthy knowledge, attitude, and practices, especially concerning oral health. World Health Organization (WHO) recommends integrating oral health promotion into school activities and curricula. Effective programs often require reinforcement at home, especially by the mothers.[5,6] In addition, parent's oral health knowledge and behaviors are also very important, as they are directly correlated with the children's oral health status, with active parental involvement in tooth brushing showing the strongest positive effect.[7]

Oral health is characterized by the absence of food debris and germs that can damage the teeth. Various layers that can accumulate on the surface of the teeth include acquired pellicle, alba material, food debris, dental plaque, dental stain, and calculus. Clinical examinations carried out to facilitate the assessment of plaque and calculus can be measured using the Oral Hygiene Index Simplified (OHI-S) developed by Green and Vermillion. The examination is carried out by summing the debris and calculus indices. It is carried out on the tooth surfaces that are clearly visible in the mouth, especially the clinical surfaces.[8,9]

Previous research conducted by Cahyaningrum[10] at PAUD Putra Sentosa Kelurahan Kedurus Kecamatan Karang Pilang Surabaya reported a significant relationship between maternal behavior and the incidence of dental caries in the toddlers. Moreover, research conducted by Worang et al[11] also showed that there was a relationship between the level of parental knowledge with dental and oral hygiene of children in kindergarten Tunas Bhakti Manado. Therefore, this research focuses on evaluating the relationship between parental knowledge, attitude, and practice with the oral hygiene of children of elementary school aged 7-8 years old.

METHODS

This was an analytical study with a cross -sectional design. Sampling was conducted using simple random sampling technique on parents and students aged 7-8 years at SD Banjarsari, Bandung. A sample of 72 students was determined through sample size calculation from the total population of 251 students aged 7–8 years at SD Banjarsari. The study was conducted by conducting OHI-S examinations to the students and giving questionnaires to their parents.

Univariate analysis was conducted to provide a general description of the variables of knowledge, attitude, and practice to maintain dental and oral health of parents and oral hygiene variables of the students presented in the form of frequency distribution tables. Bivariate analysis was carried out to find the relationship between the independent variable and the dependent variable. The Spearman Rank (rho) correlation analysis was used to evaluate the level or closeness of the relationship between the independent and dependent variables on an ordinal scale.

RESULTS

Parents's oral health maintenance knowledge is related to what parents know about how to

maintain their children's oral health. Meanwhile, oral health maintenance actions are the implementation, practice, or real actions taken by parents. Knowledge and practice can be measured with a Guttman scale questionnaire. Oral health maintenance attitude is a parents' closed response to a stimulus in the form of how to maintain their children's oral health which can be measured by a Likert scale questionnaire

Table 1 showed that most of the parents were college graduates (68.05%). Most occupation was housewives (54.17%), while the rest worked either as private employees, BUMN, civil servants, professions, or entrepreneurships.

Table 1. Characteristics of respondents (parents)

Characteristics	Frequency n=72	Percentage
Education		
SMA	23	31,94
Diploma	14	19,44
Bachelor	34	47,22
Master	1	1,39
Occupation		
Not work	39	54,17
Work	33	45,83

Data were obtained regarding the description of knowledge, attitude, and practice to maintain dental and oral hygiene of parents. Table 2 showed that half of the respondents (50%) had good level of knowledge, followed by moderate level of knowledge (27.78%), and lack of knowledge (22.22%). Most respondents had good oral health maintenance attitude (68.06%), followed by moderate attitude (31.94%). Almost all respondents had good practice in maintaining oral health (80.56%), followed by moderate practice (12.50%), and low practice (6.94%).

Table 2. Parent's oral health maintenance knowledge, attitude, and practice (n=72)

Parents' variables	**Frequency**	**Percentage**
Knowledge		
High	36	50.00
Moderate	20	27.78
Low	16	22.22
Attitude		
High	49	68.06
Moderate	23	31.94
Low	0	0
Practice		
High	58	80.56
Moderate	9	12.50
Low	5	6.94

Table 3 showed that most students aged 7-8 years had moderate oral hygiene (66.67%), followed by good oral hygiene (33.33%).

Table 4 showed that the relationship between parent's knowledge of oral health maintenance and oral hygiene of the students was not significant (p=0.918).

Table 5 showed that from 23 parents with moderate attitude, 73.9% of them had children with moderate oral hygiene, while the remaining 26.1% had children with good oral hygiene. Parents who had high attitude as many as 49 respondents, 63.3% of them had children with

moderate oral hygiene and the other 36.7% had children with good oral hygiene. The correlation value between parents' attitude of maintaining oral health and oral hygiene of the students aged 7-8 years was 0.105 with a p-value of 0.379, indicating that there was no relationship between the parents' attitude of maintaining oral health with oral hygiene of the students.

Table 3. Oral hygiene of students of 7-8 years old

OHI Index	Frequency	Percentage
0–1,2 (good)	24	33.33
1,3–3,0 (moderate)	48	66.67
3,1–6,0 (poor)	0	0
Total	72	100

Table 4. Relationship between parents' knowledge of oral health maintenance and students' oral hygiene

Knowledge	Oral Hygiene						Total		r_s	p-value	Result
	Poor		Moderate		Good						
	Freq	%	Freq	%	Freq	%	Freq	%			
Low	0	0	8	50.0	8	50.0	16	100	0.012	0.918	No corelation
Moderate	0	0	18	90.0	2	10.0	20	100			
High	0	0	22	61.1	14	38.9	36	100			

Table 5. Relationship between parents' attitude of oral health maintenance and students' oral hygiene

Attitude	Oral Hygiene						Total		r_s	p-value	Result
	Poor		Moderate		Good						
	Freq	%	Freq	%	Freq	%	Freq	%			
Low	0	0	0	0	0	0	0	100	0.105	0.379	No corelation
Moderate	0	0	17	73.9	26.1	26.1	23	100			
High	0	0	31	63.3	36.7	36.7	49	100			

Table 6 showed that of the parents who had poor actions in maintaining oral health (five respondents), 60% of them had children with moderate oral hygiene, and the other 40% had children with good oral hygiene. From parents who had moderate actions in maintaining oral hygiene (nine respondents), 55.6% of them had children with moderate oral hygiene and the remaining 44.4% had children with good oral hygiene. Moreover, from parents who had good actions (58 respondents), 69% of them had children with moderate oral hygiene and the other 31% had children with good oral hygiene. The correlation value between parents' practice of oral health maintenance and the students' oral hygiene was 0.097 with a p-value of 0.419, indicating that there was no relationship between parents' practice of oral health maintenance and the students' oral hygiene.

Table 6. Relationship between parents' practice of oral health maintenance and oral hygiene of the students

Practice	Oral Hygiene						Total		r_s	p-value	Result
	Poor		Moderate		Good						
	Freq	%	Freq	%	Freq	%	Freq	%			
Low	0	0	3	60.0	2	40.0	5	100	-0.097	0.419	No Corelation
Moderate	0	0	5	55.6	4	44.4	9	100			
High	0	0	40	69.0	18	31.0	58	100			

DISCUSSION

The results showed that the oral hygiene (OHI-S) of 7-8-year-old students was mostly

categorized as moderate (66.67%). The knowledge of parents towards maintaining oral health was mostly in the good category. This can be motivated by the last education of the parents since 47.22% of them graduated from university. Darsini[12] stated that the level of knowledge was strongly influenced by the level of the parents' formal education. Knowledge can be obtained naturally or in a planned manner, namely through the education process.

Based on the results of the correlation test, there was no significant relationship between parents' knowledge of oral health maintenance and oral hygiene of the students. Good parental knowledge is expected to affect their children's oral hygiene to be good too, however, in this study, the children's oral hygiene was found to be categorized as moderate. More than 50% of parents answered incorrectly on knowledge questions, the right time to brush their teeth and the correct way to brush their teeth. Besides that, in the action statement, parents taught what they knew about the time and method which was basically wrong. Based on the results of the 2018 Indonesian Basic Health Research, the average percentage of parents aged 25-44 years who brushed their teeth at the right time is only 3.2%, while children aged 5-9 years brushed their teeth at the right time was lower at 1.4%.[3] The facilities provided to clean the oral cavity are good such as using a small head toothbrush and soft bristles, eating healthy food, and regularly going to the dentist at least once every 6 months, however, if the time and method of brushing teeth is still not correct, then this supports the formation of plaque and calculus on the teeth.[4] Previous studies that support the results of this study are research conducted by Rompis et al[13] who reported no significant relationship between the mothers' level of knowledge about children's dental health with the severity of children's caries. Likewise, Edie's research[14] stated no significant relationship between parental knowledge about dental health and the occurrence of caries in children.

Parents' attitude of maintaining oral health has a percentage of 68.06% categorized as high. However, the correlation test results showed that there was no relationship between parents' attitude of oral health maintenance and their children's oral hygiene. Children aged 6-12 years enter a period of transition from depending on parents to trying to break away from parental authority. The child's social world expands with interactions between peers, teachers and other adults. At this age, children have begun to take responsibility for their own body and even oral hygiene. Therefore, parent's high attitude good of oral health maintenance do not automatically affect children's attitudes towards maintaining their oral health to be good too.[15] Knowledge and attitudes of maintaining oral health of parents are manifested in concrete practice to maintain oral health. From the results of the study, it was found that oral health maintenance actions were categorized as good at 80.56%. However, this parental oral health maintenance practice also does not have a significant relationship with the oral hygiene of the students.

As previously described, many parent's knowledges about how and when to brush their teeth is still wrong, while parents apply this wrong knowledge in the form of practice to their children. So that children who apply what their parents teach them, which is basically wrong. have moderate oral hygiene. According to Hermawan and Warastuti,[16] mothers had a very influential result to the children concerning the factor of how to brush teeth correctly. Meanwhile, the results of the mother's efforts in maintaining the health of her child's teeth and mouth were only found to be quite influential.

According to Blum's theory (1974), a person's health status is influenced by several factors, namely environmental factors (40%), behavior (30%), health services (20%), and heredity (10%).[1] One of the environmental factors referred to this study is the school environment, both from oral health education at school and food or snacks that children can reach around them. Yusmanijar and Abdulhaq[17] reported that there was a relationship between oral health knowledge and oral care behavior in school-age children at SD Islam Al Amal Jaticempaka, Bekasi. School age is an important period of child growth and development where in this period children begin to develop habits that usually tend to remain until adulthood; one of these habits is maintaining oral health.[1,17]

It is important for parents to have the knowledge and awareness to maintain oral hygiene from a young age. However, based on the knowledge of the incorrect time and method of brushing teeth, the children's oral hygiene is still in the moderate category. Moreover, students are still in a transitional period to become independent in maintaining their own oral hygiene, starting from brushing their own teeth and controlling foods that can damage their teeth which can be easily reached at school. As stated by Ramadhanintyas,[18] there was a significant relationship between consuming cariogenic foods and the incidence of caries in school-age children.[15,18]

Children's oral hygiene is generally worse than adults because they consume more foods and drinks that can lead to poor oral hygiene. Children often choose sweet snacks outside of main meals, such as during breaks, after school, or when playing in the afternoon. If the children consume too many sweets and rarely clean their teeth, the risk of poor oral hygiene will increase. The main factors affecting the poor oral hygiene of school-age children are the level of knowledge, awareness, and habits in maintaining their own dental health. At this age children learn by paying attention to the behavior of the surrounding environment such as interacting with many friends, getting to know, and imitating what they see. This impact can have good or bad effects on children.[19] According to Yuniarly et al,[20] oral health knowledge of school children was very important because it would affect the condition of oral hygiene. The higher level of children's knowledge about oral health, the better level of oral hygiene of the children.

Health education is essential in improving the oral health of school children. An effective method to promote oral health in schools is through the development of oral health models in a school-based setting or through the school curriculum by incorporating the latest interventions and oral health education (OHE). The results of a systematic review and meta-analysis showed that new OHE methods can teach children to take better care of their oral health, improve oral hygiene, and reduce dental debris and caries. The short-term benefits of the program are increased awareness of oral health, and better engagement of dentists, teachers, parents, and students. An effective school-based health program should involve all these parties with regular reinforcement.[6]

CONCLUSION

There is no relationship between parent's oral health knowledge, attitudes, and practice of oral health maintenance with oral hygiene of 7-9 years old students. In addition, there is a need for oral health counseling or education to parents and students aged 7-8 years old frequently, organized routine dental check-ups and tooth brushing activities for the students. Ministry of Health Indonesia need to improve cooperation between parents, educators, and dentists in maintaining student's dental health both in the school environment and family environment.

Conflicts of Interest

The authors declare no conflict of interest in this study.

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