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Dear **Prof. Dr. Dian Agustin,**

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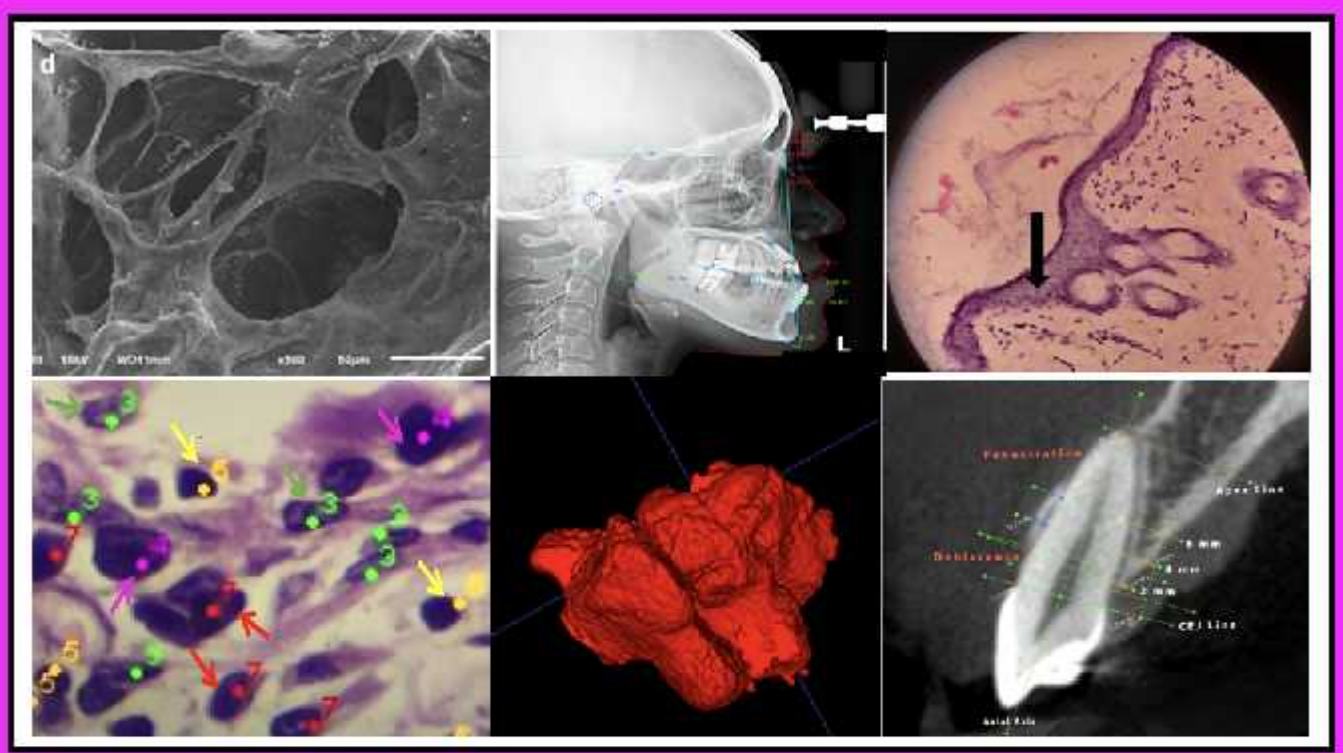

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COVERING LETTER
Sub: Submission of manuscript for publication

Respected Editor,

We would like to publish our manuscript titled "Mothers Parenting Pattern on Tooth Brushing Based on The Theory of Planned Behavior in Banjarbaru City" in your esteemed journal **"**Journal of International Dental and Medical Research**"** as an original article.

On behalf of all the contributors I will act as guarantor and will correspond with the journal from this point onward.

Prior publication- nil

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Yours' sincerely,

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Elements Affecting Toothbrushing Parenting among Mothers in Banjarbaru City

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Abstract

Mothers' brushing teeth habit affects children's dental health. How mother's toothbrushing parenting based on the theory of planned behavior can be used to predict the level of intention to perform health behavior. This study aimed to analyze the influence of attitudes, subjective norms and perceived control on mothers' intentions and behavior towards tooth brushing in children aged 6 years in Banjarbaru city. ***The research was*** observational analytic and used a cross-sectional design. A total of 82 mothers were randomly selected from the first-grade students at three elementary schools in the urban area of Banjarbaru. The average value was 5.8 for attitude, 4.8 for subjective norm, 5 for perceived control, 7 for intention, and 20 for behavior. The first path model on the elements of the theory of planned behavior i.e., intention obtained a p-value of 0.0001. In the second model, intention to behavior had a p-value of 0.0001. There is an influence of elements of the theory of planned behavior on intentions. Intention also influenced behavior. Intention is a mediator that likely causes the elements of the theory of planned behavior to influence toothbrushing parenting.

Clinical article (J Int Dent Med Res 2021; 14(4): 1580-1586)

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Introduction

Mothers' parenting could affect child's dental and oral health. Mothers can be a motivator for their children to perform appropriate health behaviors. They need to provide health education to their families and instill healthy behavior changes. Mothers' parenting may suggest how children solve various problems in dental and oral health. Educating children about early-age tooth brushing with fluoride toothpaste twice a day could be an indicator of dental caries prevention in children. Nayyar highlights a significant relationship between mothers' parenting and caries status in children.[1]

Parents, especially mothers, hold an important role in dental hygiene for children under the age of twelve as children generally have a closer inner relationship with their mothers. With that said, mother's knowledge, attitudes, and actions may determine child's dental and oral health status. Research on parents of children aged 7 years has mentioned that children's tooth brushing habit is influenced by parents' knowledge, perceptions and beliefs, e.g., parents' control, monitoring and supervision.[2]

Various factors may affect dental health parenting. For example, there are mother's knowledge about dental health, sources of information, supporting resources e.g., the community, and family's socioeconomic status. Parents of students (aged 6-7 years) at grade I of elementary school in Banjarbaru city, Indonesia had poor toothbrushing parenting (29.30%). It can be seen from how mothers assessed their children's dental hygiene after toothbrushing, assisted, and supervised the toothbrushing steps. With this said, low toothbrushing parenting likely causes a high caries rate in primary teeth with an average def-t of 9.52.[3]

The theory of planned behavior explains human behavior. This theory consists of three elements, namely attitudes, subjective norms, and perceived behavioral control. These three elements are influenced by to which extent the strength or weakness of attitudes, normative

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beliefs and behavioral control beliefs are in producing strong or weak intentions to performing behavior. Many researchers have proven and applied the theory of planned behavior to predict changes in health behavior after people receive treatment.[4,5] Toothbrushing parenting based on the theory of planned behavior was measured to explain the influence of attitudes, subjective norms, and perception of control on intention and behavior of toothbrushing parenting. The benefits of the research can be used to determine types of treatment that improve mothers' behavior in implementing toothbrushing parenting.

Materials and methods

Research Samples

The research employed a cross-sectional analytic observational method. It included the population of all mothers of first-grade students at three elementary schools located in the urban areas of Banjarbaru, Indonesia. Samples were randomly taken from the population that met the inclusion. There were 82 mothers selected based on the Lemeshow' formula.[6] Questionnaires were distributed to the respondents online via parents' WhatsApp groups.

Research Methods

The study used a closed questionnaire which was compiled based on the guidelines of constructing questionnaires based on the theory of planned behavior.[5] The questionnaire consisted of 24 questions on each element of the theory of planned behavior. The measurement of mother's parenting was fundamentally based on six indicators, namely directing children to brush their teeth after breakfast, directing children to brush their teeth before sleeping at night, assisting children to brush their teeth after breakfast, assisting children to brush their teeth before going to bed at night, supervising children to brush their teeth after breakfast, and supervising children to brush their teeth before going to bed at night.

Attitude was referred to support for parenting. There were 4 pairs of responses that were bipolar on six parenting indicators, namely detrimental-beneficial, good-bad, unpleasant-pleasant, and useful-worthless. While subjective norm was feelings of pressure from important people around them to do parenting. Questions related to subjective norms consisted of 4 pairs of responses that were bipolar on six parenting indicators, namely one response to the feeling of compulsion (I should-I should not) to do what important people around him thought and three approval responses (strongly disagree-strongly agree) to hope, pressure and desire from important people around them to do toothbrushing parenting. Perceived behavioral control measured the ability of mothers to do parenting. This element had 4 pairs of responses that were bipolar on six parenting indicators, namely one response to the level of ease (easy-difficult) and three approval responses (strongly disagree-strongly agree) towards ability, control, and decision making to carry out toothbrushing parenting.[5]

The range of each response was one to seven. The element assessment was done by rearranging the responses from negative end points on the right to the left. Higher points reflected a positive attitude, existence of pressure, and ability to do. In the good-bad response, answer 6 was changed to two, and answer 4 remained to four. The whole value of the elements was from the average of the total value of responses.[5] The value categories were as follows: scores 1.0 to 2.0 (very weak), 2.1 to 3.3 (weak), 3.4 to 4.6 (moderate), 4.7 to 5.9 (strong), and 6.0 to 7.0 (very strong).

Intention was measured through a closed questionnaire that addressed how many times the respondents carried out 6 indicators of parenting within 10 days. Response scores ranged from 0 to 10. The overall score of intention was the average of the total of response scores. The intention was divided into five categories: 0 (no intention), 0.1-2 (very weak), 2.1-4 (weak), 4.1-6 (moderate), 6.1-8 (strong), and 8.1-10 (very strong).[5]

Besides, behavior was measured through a closed questionnaire related to which six indicators of parenting the respondents had done. The assessment of behavior was in a Likert scale consisting of 5 levels: 5 (regularly), 4 (frequently), 3 (occasionally), 2 (rarely), and 1 (never do). The sum of all parenting indicators' values would be the overall score of behavior element. The scores for behavior ranged from 6 to 30 that were divided into 5 categories: 6-10 (very poor), 11-15 (poor), 16-20 (moderate), 21-25 (good), and 26-30 (very good).[5]

The validity and reliability test of the questionnaires was done using the Pearson and

Cronbach's Alpha correlation test at a significance of 5% and r-table value of N 80 (0.220). It showed that all r values were greater than r table with a significance of < 0.05 and Cronbach's Alpha of > 0.70. It can be stated that all question items in the questionnaire were valid and reliable to measure the elements.

Results

The average value of mothers' attitude towards toothbrushing was 5.8, meaning overall, the respondents strongly supported child's toothbrushing. The lowest average score was on assisting children to brush their teeth after breakfast. The lowest response value was unpleasant-pleasant response as shown by Table 1.

Attitude towards Child's Toothbrushing	Mean Response Value				Mean
	Detrimental-Beneficial	Bad-Good	Unpleasant-Pleasant	Worthless-Useful	
Directing children to brush their teeth after breakfast	6.6	5.9	5.3	5.8	5.9
Directing children to brush their teeth before going to bed at night	6.8	5.8	5.2	5.7	5.8
Assisting children to brush their teeth after breakfast	6.1	5.6	5.2	5.6	5.6
Assisting children to brush their teeth before going to bed at night	6.4	6.0	5.3	5.8	5.8
Supervising the way children toothbrush after breakfast	6.0	5.7	5.4	5.7	5.7
Supervising the way children toothbrush before going to bed at night	6.2	5.8	5.2	5.5	5.7
Mean	6.3	5.8	5.3	5.7	5.8

Table 1. Mothers' attitude towards child's toothbrushing.

The measurement on the subjective norm of mothers' toothbrushing parenting resulted in the average value of 4.8, meaning overall, the respondents experienced strong pressure from people around them to implement toothbrushing parenting. The lowest average score was on assisting children to brush their teeth after breakfast. The lowest response value was on getting pressure from important people around them to implement toothbrushing parenting as presented in Table 2.

The perceived behavior control over mothers' toothbrushing parenting averaged five. Overall, the respondents had a strong ability to implement toothbrushing parenting. The lowest average score was on directing children to brush their teeth after breakfast. The lowest response was found in decision making on toothbrushing parenting. The results of perceived behavior are explained in Table 3.

Attitude towards Child's Toothbrushing	Mean Response Value				Mean
	Detrimental-Beneficial	Bad-Good	Unpleasant-Pleasant	Worthless-Useful	
Directing children to brush their teeth after breakfast	6.6	5.9	5.3	5.8	5.9
Directing children to brush their teeth before going to bed at night	6.8	5.8	5.2	5.7	5.8
Assisting children to brush their teeth after breakfast	6.1	5.6	5.2	5.6	5.6
Assisting children to brush their teeth before going to bed at night	6.4	6.0	5.3	5.8	5.8
Supervising the way children toothbrush after breakfast	6.0	5.7	5.4	5.7	5.7
Supervising the way children toothbrush before going to bed at night	6.2	5.8	5.2	5.5	5.7
Mean	6.3	5.8	5.3	5.7	5.8

Table 2. Subjective norm of mothers' toothbrushing parenting

Perceived Behavior Control over Toothbrushing Parenitng	Mean Response Value of Perceived Behavior Control				Mean
	Ability	Difficult-Easy	Control	Making Decision	
Directing children to brush their teeth after breakfast	5.3	5.1	5	4	4.8
Directing children to brush their teeth before going to bed at night	5.8	5.5	5.2	4	5.1
Assisting children to brush their teeth after breakfast	5.0	5	5.0	4.7	4.9
Assisting children to brush their teeth before going to bed at night	5.4	5.2	5.0	4.6	5.0
Supervising the way children toothbrush after breakfast	5.2	5	5.1	4.8	5.0
Supervising the way children toothbrush before going to bed at night	5.4	5.2	5.2	4.9	5.2
Mean	5.3	5.2	5	4.5	5

Table 3. Mothers' perceived behavior control over toothbrushing parenting for children.

The average value of intention was seven, meaning that overall, the respondents had the intention to strongly implement toothbrushing parenting. The lowest average score was on assisting children to brush their teeth after

breakfast. Table 4 presents the results of intention to toothbrushing parenting.

Intention to Toothbrushing Parenting in 10 Days	Mean
Directing children to brush their teeth after breakfast	7.4
Directing children to brush their teeth before going to bed at night	8.0
Assisting children to brush their teeth after breakfast	6.2
Assisting children to brush their teeth before going to bed at night	6.7
Supervising the way children toothbrush after breakfast	6.4
Supervising the way children toothbrush before going to bed at night	7.3
Mean	7

Table 4. Mothers' intention to toothbrushing parenting.

The bahavior towards mothers' toothbrushing parenting obtained 20 points, indicating that on average, the respondents had moderate behavior towards toothbrushing parenting. The lowest average score was on assisting children to brush their teeth after breakfast. There were 62 samples (76%) who obtained less than the average. More details are described in Table 5.

Behavior towards Toothbrushing Parenting	Regularly N	Frequently N	Occasionally N	Rarely N	Never N	Mean
Directing children to brush their teeth after breakfast	16	23	33	9	1	3.5
Directing children to brush their teeth before going to bed at night	28	19	26	9	0	3.8
Assisting children to brush their teeth after breakfast	6	14	42	17	3	3.0
Assisting children to brush their teeth before going to bed at night	14	21	30	14	3	3.4
Supervising the way children toothbrush after breakfast	9	16	32	23	2	3.1
Supervising the way children toothbrush before going to bed at night	17	18	30	16	1	3.3
Total Mean = 20						

Table 5. Mothers' behavior towards toothbrushing parenting.

The One-Sample Kolmogorov-Smirnov test was performed to identify the normality of data. It showed a significance value of > 0.05, meaning all research data were normally distributed. Then, the data were analyzed using parametric analysis tests. The analysis of first path model examined the influence of attitudes, subjective norms and perceived control on intentions to toothbrushing parenting (Table 6).

Independent Variables	Dependent Variable	Sig.	Standardized Coefficients Beta	Model Summary R Square
Attitudes	Intention	0.001	.279	0.800
Subjective Norms	Intention	0.001	.447	
Perceived Control	Intention	0.001	.478	

Table 6. The analysis results of first path model.

There was a significant positive effect (sig. < 0.05) of attitudes, subjective norms and perceived control on intention to toothbrushing parenting. Perceived control held the biggest influence on intention (47.8%). The joint influence of attitude, subjective norm and perceived control on intention was 0.800 or 80%, and the remaining 20% was influenced by other factors.

The second path model examined the influence of attitude, subjective norm, perceived control, and intention on toothbrushing parenting behavior. The results showed intention became a mediator in the theory of planned behavior. Table 7 presents the results in more details.

Independent Variables	Dependent Variable	Sig.	Standardized Coefficients Beta	Model Summary R Square
Attitudes	Behavior	0.420	0.078	0.600
Subjective Norms	Behavior	0.948	0.007	
Perceived Control	Behavior	0.171	0.159	
Intention	Behavior	0.001	0.602	

Table 7. The analysis results of second path model.

The second path model showed attitudes, subjective norms and perceived control had no direct influence on behavior. There was a direct strong influence of intention on behavior (60.2%). Intention mediated attitudes, subjective norms and perceived control to influence behavior.The joint influence of attitude, subjective

norm, perceived control, and intention on behavior towards toothbrushing parenting was 60%, and the remaining 40% was influenced by other factors. The path analysis goes as in Figure 1.

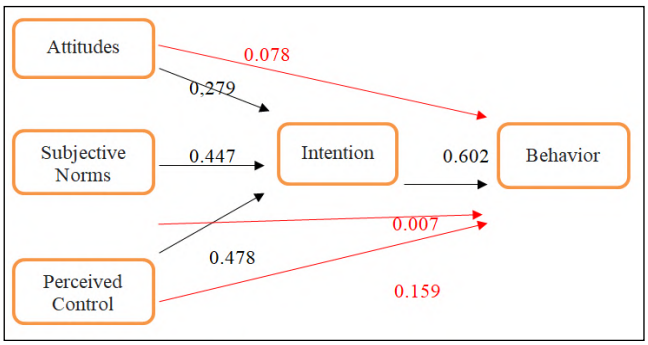

Figure 1. Path analysis diagram.

Discussion

The attitude to perform a behavior depends on the expectation and beliefs in advantages and disadvantages after someone performs certain behaviors[7]. The respondents thought toothbrushing would be beneficial for child's dental health. Beliefs in the benefits will strengthen attitudes and later ignite behavior. Assisting children to brush their teeth contributed the least to attitude. Beliefs in consequences for assisting children to brush their teeth after breakfast will be troublesome to be considered in determining attitudes, this trouble include mother's various household activities and morning work, and more time is needed to help the children to brush their teeth in the morning after breakfast. [8]

Regarding attitude, the unpleasant-pleasant response to toothbrushing parenting was the lowest.[9,10] Lack of knowledge about the importance of primary dental health is likely to neglect toothbrushing parenting for daily basis. The majority of mothers had poor knowledge about caries and its causes although they knew the importance of child toothbrushing.[11,12] Such a situation could lead to the perception of toothbrushing as an unpleasant activity[13]. Mothers' knowledge about health will affect beliefs and attitudes towards dental and oral health and even their parenting model. Parents, especially mothers, are role models on dental health among their children. Mothers should teach their children as early as possible through good parenting model to prevent dental caries. The better mothers' knowledge about dental and oral health, the better children's dental and oral health[14].

Subjective norms are feelings or assumptions about people's behaviors. Belief of surrounding people would affect mothers' subjective norms to perform certain behaviors. Such feelings may give mothers pressure to perform certain behaviors. However, in a good way, a strong subjective norm will motivate mothers to implement toothbrushing parenting[7]. Feelings of others' approval of behavior was the most influential on subjective norms. Mothers' belief in others' support to toothbrushing parenting will increase subjective norms. The lowest response was on the pressure from surrounding people. Generally, mothers feel pressured because of their husbands not involved in toothbrushing parenting.

Subjective norms are the output of controversial decisions (normative beliefs) on toothbrushing among surrounding people.[15] The norms also will determine how to comply with some recommendations (motivation to comply) including from dental health experts about the benefits and consequences of tooth brushing.

The respondents had strong perceived control, the perceived ability to carry out toothbrushing parenting. It was supported by the availability of resources i.e., equipment, competencies, opportunities (control belief), and the large role of resources (power of control factor) in raising parenting, including high education level and income level of respondents. Beliefs in behavioral control will strengthen perceived control[4]. Easy access to dental health information on the Internet, especially social media, will increase mothers' confidence about behavior control. On social media, parents can get additional knowledge, support from others, improve social relations with other parents, and get opinions or advice from experts to improve their parenting[16].

Intention to toothbrushing was strong. According to the first path model analysis, there was a positive influence of attitude, subjective norms, and perceived control on intentions. Similar to the theory of planned behavior, the better attitudes, subjective norms, and perceived control, the stronger the intention to performing a behavior[4]. The most influential element on intention was perceived control value. Besides, old behavior would determine intention to

performing future behavior. It also had a moderating effect on perceived control that may strengthen intention[4].

The respondents had medium parenting behavior towards toothbrushing. The second path model showed no direct influence of attitude, subjective norms, and perceived control on behavior. Intention significantly had a positive effect on behavior. This finding follows the scheme in the theory of planned behavior which states that intention is a mediator for attitudes, subjective norms, and perceived control to influence behavior[7]. The main factor in the theory of planned behavior is intention to performing behavior. The stronger intention is, the greater it contributes to shape behavior[7].

Although the theory of planned behavior and intention was in the strong category, behavior towards toothbrushing parenting was still in the moderate category. Meanwhile, subjective norms had the lowest score among all, especially in the response to feelings of pressure from important people around him. Overall, the lowest indicator was helping children brush their teeth after breakfast. The elements can be used to predict parenting behavior and find strategies to improve toothbrushing parenting[5]. This study recommends mothers improve toothbrushing parenting behavior by educating family members about the importance of parents' assistance.

Conclusions

The elements of the theory of planned behavior i.e., attitudes, subjective norms, and perceived control affect intentions to toothbrushing parenting. Besides, intention also affects behavior and becomes a mediator for the elements to influence mothers' behavior.

Acknowledgements

The authors declare that there is no conflict of interest.

Declaration of Interest

The authors report no conflict of interest.

Ethical Policy and Institutional Review Board Statement

The research has received a certificate of ethics from the Health Research Ethic Clearance Commission, Faculty of Dental Medicine, Universitas Airlangga, Surabaya, Indonesia with the Ethic Code: 561/HRECCFODM/XII/2020.

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Elements Affecting Toothbrushing Parenting among Mothers in Banjarbaru City

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Abstract

Mothers' brushing teeth habit affects children's dental health. How mother's toothbrushing parenting based on the theory of planned behavior can be used to predict the level of intention to perform health behavior. This study aimed to analyze the influence of attitudes, subjective norms and perceived control on mothers' intentions and behavior towards tooth brushing in children aged 6 years in Banjarbaru city. ***The research was*** observational analytic and used a cross-sectional design. A total of 82 mothers were randomly selected from the first-grade students at three elementary schools in the urban area of Banjarbaru. The average value was 5.8 for attitude, 4.8 for subjective norm, 5 for perceived control, 7 for intention, and 20 for behavior. The first path model on the elements of the theory of planned behavior i.e., intention obtained a p-value of 0.0001. In the second model, intention to behavior had a p-value of 0.0001. There is an influence of elements of the theory of planned behavior on intentions. Intention also influenced behavior. Intention is a mediator that likely causes the elements of the theory of planned behavior to influence toothbrushing parenting.

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Introduction

Mothers' parenting could affect child's dental and oral health. Mothers can be a motivator for their children to perform appropriate health behaviors. They need to provide health education to their families and instill healthy behavior changes. Mothers' parenting may suggest how children solve various problems in dental and oral health. Educating children about early-age tooth brushing with fluoride toothpaste twice a day could be an indicator of dental caries prevention in children. Nayyar highlights a significant relationship between mothers' parenting and caries status in children.[1]

Parents, especially mothers, hold an important role in dental hygiene for children under the age of twelve as children generally have a closer inner relationship with their mothers. With that said, mother's knowledge, attitudes, and actions may determine child's dental and oral health status. Research on parents of children aged 7 years has mentioned that children's tooth brushing habit is influenced by parents' knowledge, perceptions and beliefs, e.g., parents' control, monitoring and supervision.[2]

Various factors may affect dental health parenting. For example, there are mother's knowledge about dental health, sources of information, supporting resources e.g., the community, and family's socioeconomic status. Parents of students (aged 6-7 years) at grade I of elementary school in Banjarbaru city, Indonesia had poor toothbrushing parenting (29.30%). It can be seen from how mothers assessed their children's dental hygiene after toothbrushing, assisted, and supervised the toothbrushing steps. With this said, low toothbrushing parenting likely causes a high caries rate in primary teeth with an average def-t of 9.52.[3]

The theory of planned behavior explains human behavior. This theory consists of three elements, namely attitudes, subjective norms, and perceived behavioral control. These three elements are influenced by to which extent the strength or weakness of attitudes, normative

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beliefs and behavioral control beliefs are in producing strong or weak intentions to performing behavior. Many researchers have proven and applied the theory of planned behavior to predict changes in health behavior after people receive treatment.[4,5] Toothbrushing parenting based on the theory of planned behavior was measured to explain the influence of attitudes, subjective norms, and perception of control on intention and behavior of toothbrushing parenting. The benefits of the research can be used to determine types of treatment that improve mothers' behavior in implementing toothbrushing parenting.

Materials and methods

Research Samples

The research employed a cross-sectional analytic observational method. It included the population of all mothers of first-grade students at three elementary schools located in the urban areas of Banjarbaru, Indonesia. Samples were randomly taken from the population that met the inclusion. There were 82 mothers selected based on the Lemeshow' formula.[6] Questionnaires were distributed to the respondents online via parents' WhatsApp groups.

Research Methods

The study used a closed questionnaire which was compiled based on the guidelines of constructing questionnaires based on the theory of planned behavior.[5] The questionnaire consisted of 24 questions on each element of the theory of planned behavior. The measurement of mother's parenting was fundamentally based on six indicators, namely directing children to brush their teeth after breakfast, directing children to brush their teeth before sleeping at night, assisting children to brush their teeth after breakfast, assisting children to brush their teeth before going to bed at night, supervising children to brush their teeth after breakfast, and supervising children to brush their teeth before going to bed at night.

Attitude was referred to support for parenting. There were 4 pairs of responses that were bipolar on six parenting indicators, namely detrimental-beneficial, good-bad, unpleasant-pleasant, and useful-worthless. While subjective norm was feelings of pressure from important people around them to do parenting. Questions related to subjective norms consisted of 4 pairs of responses that were bipolar on six parenting indicators, namely one response to the feeling of compulsion (I should-I should not) to do what important people around him thought and three approval responses (strongly disagree-strongly agree) to hope, pressure and desire from important people around them to do toothbrushing parenting. Perceived behavioral control measured the ability of mothers to do parenting. This element had 4 pairs of responses that were bipolar on six parenting indicators, namely one response to the level of ease (easy-difficult) and three approval responses (strongly disagree-strongly agree) towards ability, control, and decision making to carry out toothbrushing parenting.[5]

The range of each response was one to seven. The element assessment was done by rearranging the responses from negative end points on the right to the left. Higher points reflected a positive attitude, existence of pressure, and ability to do. In the good-bad response, answer 6 was changed to two, and answer 4 remained to four. The whole value of the elements was from the average of the total value of responses.[5] The value categories were as follows: scores 1.0 to 2.0 (very weak), 2.1 to 3.3 (weak), 3.4 to 4.6 (moderate), 4.7 to 5.9 (strong), and 6.0 to 7.0 (very strong).

Intention was measured through a closed questionnaire that addressed how many times the respondents carried out 6 indicators of parenting within 10 days. Response scores ranged from 0 to 10. The overall score of intention was the average of the total of response scores. The intention was divided into five categories: 0 (no intention), 0.1-2 (very weak), 2.1-4 (weak), 4.1-6 (moderate), 6.1-8 (strong), and 8.1-10 (very strong).[5]

Besides, behavior was measured through a closed questionnaire related to which six indicators of parenting the respondents had done. The assessment of behavior was in a Likert scale consisting of 5 levels: 5 (regularly), 4 (frequently), 3 (occasionally), 2 (rarely), and 1 (never do). The sum of all parenting indicators' values would be the overall score of behavior element. The scores for behavior ranged from 6 to 30 that were divided into 5 categories: 6-10 (very poor), 11-15 (poor), 16-20 (moderate), 21-25 (good), and 26-30 (very good).[5]

The validity and reliability test of the questionnaires was done using the Pearson and

Cronbach's Alpha correlation test at a significance of 5% and r-table value of N 80 (0.220). It showed that all r values were greater than r table with a significance of < 0.05 and Cronbach's Alpha of > 0.70. It can be stated that all question items in the questionnaire were valid and reliable to measure the elements.

Results

The average value of mothers' attitude towards toothbrushing was 5.8, meaning overall, the respondents strongly supported child's toothbrushing. The lowest average score was on assisting children to brush their teeth after breakfast. The lowest response value was unpleasant-pleasant response as shown by Table 1.

Attitude towards Child's Toothbrushing	Mean Response Value				Mean
	Detrimental-Beneficial	Bad-Good	Unpleasant-Pleasant	Worthless-Useful	
Directing children to brush their teeth after breakfast	6.6	5.9	5.3	5.8	5.9
Directing children to brush their teeth before going to bed at night	6.8	5.8	5.2	5.7	5.8
Assisting children to brush their teeth after breakfast	6.1	5.6	5.2	5.6	5.6
Assisting children to brush their teeth before going to bed at night	6.4	6.0	5.3	5.8	5.8
Supervising the way children toothbrush after breakfast	6.0	5.7	5.4	5.7	5.7
Supervising the way children toothbrush before going to bed at night	6.2	5.8	5.2	5.5	5.7
Mean	6.3	5.8	5.3	5.7	5.8

Table 1. Mothers' attitude towards child's toothbrushing.

The measurement on the subjective norm of mothers' toothbrushing parenting resulted in the average value of 4.8, meaning overall, the respondents experienced strong pressure from people around them to implement toothbrushing parenting. The lowest average score was on assisting children to brush their teeth after breakfast. The lowest response value was on getting pressure from important people around them to implement toothbrushing parenting as presented in Table 2.

The perceived behavior control over mothers' toothbrushing parenting averaged five. Overall, the respondents had a strong ability to implement toothbrushing parenting. The lowest average score was on directing children to brush their teeth after breakfast. The lowest response was found in decision making on toothbrushing parenting. The results of perceived behavior are explained in Table 3.

Attitude towards Child's Toothbrushing	Mean Response Value				Mean
	Detrimental-Beneficial	Bad-Good	Unpleasant-Pleasant	Worthless-Useful	
Directing children to brush their teeth after breakfast	6.6	5.9	5.3	5.8	5.9
Directing children to brush their teeth before going to bed at night	6.8	5.8	5.2	5.7	5.8
Assisting children to brush their teeth after breakfast	6.1	5.6	5.2	5.6	5.6
Assisting children to brush their teeth before going to bed at night	6.4	6.0	5.3	5.8	5.8
Supervising the way children toothbrush after breakfast	6.0	5.7	5.4	5.7	5.7
Supervising the way children toothbrush before going to bed at night	6.2	5.8	5.2	5.5	5.7
Mean	6.3	5.8	5.3	5.7	5.8

Table 2. Subjective norm of mothers' toothbrushing parenting

Perceived Behavior Control over Toothbrushing Parenitng	Mean Response Value of Perceived Behavior Control				Mean
	Ability	Difficult-Easy	Control	Making Decision	
Directing children to brush their teeth after breakfast	5.3	5.1	5	4	4.8
Directing children to brush their teeth before going to bed at night	5.8	5.5	5.2	4	5.1
Assisting children to brush their teeth after breakfast	5.0	5	5.0	4.7	4.9
Assisting children to brush their teeth before going to bed at night	5.4	5.2	5.0	4.6	5.0
Supervising the way children toothbrush after breakfast	5.2	5	5.1	4.8	5.0
Supervising the way children toothbrush before going to bed at night	5.4	5.2	5.2	4.9	5.2
Mean	5.3	5.2	5	4.5	5

Table 3. Mothers' perceived behavior control over toothbrushing parenting for children.

The average value of intention was seven, meaning that overall, the respondents had the intention to strongly implement toothbrushing parenting. The lowest average score was on assisting children to brush their teeth after

breakfast. Table 4 presents the results of intention to toothbrushing parenting.

Intention to Toothbrushing Parenting in 10 Days	Mean
Directing children to brush their teeth after breakfast	7.4
Directing children to brush their teeth before going to bed at night	8.0
Assisting children to brush their teeth after breakfast	6.2
Assisting children to brush their teeth before going to bed at night	6.7
Supervising the way children toothbrush after breakfast	6.4
Supervising the way children toothbrush before going to bed at night	7.3
Mean	7

Table 4. Mothers' intention to toothbrushing parenting.

The bahavior towards mothers' toothbrushing parenting obtained 20 points, indicating that on average, the respondents had moderate behavior towards toothbrushing parenting. The lowest average score was on assisting children to brush their teeth after breakfast. There were 62 samples (76%) who obtained less than the average. More details are described in Table 5.

Behavior towards Toothbrushing Parenting	Regularly N	Frequently N	Occasionally N	Rarely N	Never N	Mean
Directing children to brush their teeth after breakfast	16	23	33	9	1	3.5
Directing children to brush their teeth before going to bed at night	28	19	26	9	0	3.8
Assisting children to brush their teeth after breakfast	6	14	42	17	3	3.0
Assisting children to brush their teeth before going to bed at night	14	21	30	14	3	3.4
Supervising the way children toothbrush after breakfast	9	16	32	23	2	3.1
Supervising the way children toothbrush before going to bed at night	17	18	30	16	1	3.3
Total Mean = 20						

Table 5. Mothers' behavior towards toothbrushing parenting.

The One-Sample Kolmogorov-Smirnov test was performed to identify the normality of data. It showed a significance value of > 0.05, meaning all research data were normally distributed. Then, the data were analyzed using parametric analysis tests. The analysis of first path model examined the influence of attitudes, subjective norms and perceived control on intentions to toothbrushing parenting (Table 6).

Independent Variables	Dependent Variable	Sig.	Standardized Coefficients Beta	Model Summary R Square
Attitudes	Intention	0.001	.279	0.800
Subjective Norms	Intention	0.001	.447	
Perceived Control	Intention	0.001	.478	

Table 6. The analysis results of first path model.

There was a significant positive effect (sig. < 0.05) of attitudes, subjective norms and perceived control on intention to toothbrushing parenting. Perceived control held the biggest influence on intention (47.8%). The joint influence of attitude, subjective norm and perceived control on intention was 0.800 or 80%, and the remaining 20% was influenced by other factors.

The second path model examined the influence of attitude, subjective norm, perceived control, and intention on toothbrushing parenting behavior. The results showed intention became a mediator in the theory of planned behavior. Table 7 presents the results in more details.

Independent Variables	Dependent Variable	Sig.	Standardized Coefficients Beta	Model Summary R Square
Attitudes	Behavior	0.420	0.078	0.600
Subjective Norms	Behavior	0.948	0.007	
Perceived Control	Behavior	0.171	0.159	
Intention	Behavior	0.001	0.602	

Table 7. The analysis results of second path model.

The second path model showed attitudes, subjective norms and perceived control had no direct influence on behavior. There was a direct strong influence of intention on behavior (60.2%). Intention mediated attitudes, subjective norms and perceived control to influence behavior.The joint influence of attitude, subjective

norm, perceived control, and intention on behavior towards toothbrushing parenting was 60%, and the remaining 40% was influenced by other factors. The path analysis goes as in Figure 1.

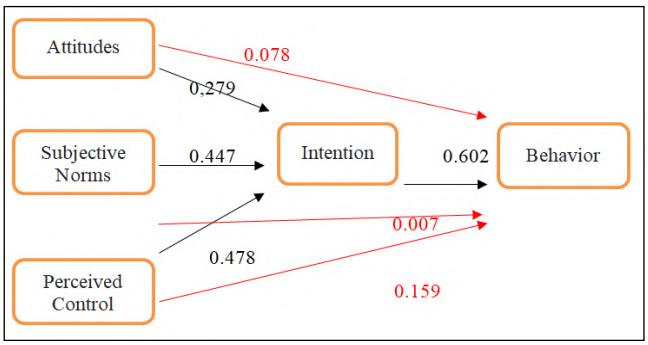

Figure 1. Path analysis diagram.

Discussion

The attitude to perform a behavior depends on the expectation and beliefs in advantages and disadvantages after someone performs certain behaviors[7]. The respondents thought toothbrushing would be beneficial for child's dental health. Beliefs in the benefits will strengthen attitudes and later ignite behavior. Assisting children to brush their teeth contributed the least to attitude. Beliefs in consequences for assisting children to brush their teeth after breakfast will be troublesome to be considered in determining attitudes, this trouble include mother's various household activities and morning work, and more time is needed to help the children to brush their teeth in the morning after breakfast. [8]

Regarding attitude, the unpleasant-pleasant response to toothbrushing parenting was the lowest.[9,10] Lack of knowledge about the importance of primary dental health is likely to neglect toothbrushing parenting for daily basis. The majority of mothers had poor knowledge about caries and its causes although they knew the importance of child toothbrushing.[11,12] Such a situation could lead to the perception of toothbrushing as an unpleasant activity[13]. Mothers' knowledge about health will affect beliefs and attitudes towards dental and oral health and even their parenting model. Parents, especially mothers, are role models on dental health among their children. Mothers should teach their children as early as possible through good parenting model to prevent dental caries. The better mothers' knowledge about dental and oral health, the better children's dental and oral health[14].

Subjective norms are feelings or assumptions about people's behaviors. Belief of surrounding people would affect mothers' subjective norms to perform certain behaviors. Such feelings may give mothers pressure to perform certain behaviors. However, in a good way, a strong subjective norm will motivate mothers to implement toothbrushing parenting[7]. Feelings of others' approval of behavior was the most influential on subjective norms. Mothers' belief in others' support to toothbrushing parenting will increase subjective norms. The lowest response was on the pressure from surrounding people. Generally, mothers feel pressured because of their husbands not involved in toothbrushing parenting.

Subjective norms are the output of controversial decisions (normative beliefs) on toothbrushing among surrounding people.[15] The norms also will determine how to comply with some recommendations (motivation to comply) including from dental health experts about the benefits and consequences of tooth brushing.

The respondents had strong perceived control, the perceived ability to carry out toothbrushing parenting. It was supported by the availability of resources i.e., equipment, competencies, opportunities (control belief), and the large role of resources (power of control factor) in raising parenting, including high education level and income level of respondents. Beliefs in behavioral control will strengthen perceived control[4]. Easy access to dental health information on the Internet, especially social media, will increase mothers' confidence about behavior control. On social media, parents can get additional knowledge, support from others, improve social relations with other parents, and get opinions or advice from experts to improve their parenting[16].

Intention to toothbrushing was strong. According to the first path model analysis, there was a positive influence of attitude, subjective norms, and perceived control on intentions. Similar to the theory of planned behavior, the better attitudes, subjective norms, and perceived control, the stronger the intention to performing a behavior[4]. The most influential element on intention was perceived control value. Besides, old behavior would determine intention to

performing future behavior. It also had a moderating effect on perceived control that may strengthen intention[4].

The respondents had medium parenting behavior towards toothbrushing. The second path model showed no direct influence of attitude, subjective norms, and perceived control on behavior. Intention significantly had a positive effect on behavior. This finding follows the scheme in the theory of planned behavior which states that intention is a mediator for attitudes, subjective norms, and perceived control to influence behavior[7]. The main factor in the theory of planned behavior is intention to performing behavior. The stronger intention is, the greater it contributes to shape behavior[7].

Although the theory of planned behavior and intention was in the strong category, behavior towards toothbrushing parenting was still in the moderate category. Meanwhile, subjective norms had the lowest score among all, especially in the response to feelings of pressure from important people around him. Overall, the lowest indicator was helping children brush their teeth after breakfast. The elements can be used to predict parenting behavior and find strategies to improve toothbrushing parenting[5]. This study recommends mothers improve toothbrushing parenting behavior by educating family members about the importance of parents' assistance.

Conclusions

The elements of the theory of planned behavior i.e., attitudes, subjective norms, and perceived control affect intentions to toothbrushing parenting. Besides, intention also affects behavior and becomes a mediator for the elements to influence mothers' behavior.

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The authors declare that there is no conflict of interest.

Declaration of Interest

The authors report no conflict of interest.

Ethical Policy and Institutional Review Board Statement

The research has received a certificate of ethics from the Health Research Ethic Clearance Commission, Faculty of Dental Medicine, Universitas Airlangga, Surabaya, Indonesia with the Ethic Code: 561/HRECCFODM/XII/2020.

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