The Effect of Oral Health Educational Intervention Program among Mothers of Children aged 1-6: Based on the Theory of Planned Behavior

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KEY WORDS
Oral health; Theory of Planned Behavior; Intervention; Self-Care; Children; Mother; Dental caries;

ABSTRACT
Statement of the Problem: Oral self-care is one of the important accepts of lifestyle and a serious public health issue.

Purpose: This study aimed to evaluate the effect of an educational program based on the theory of planned behavior (TPB) on mothers and children’s oral self-care behaviors.

Materials and Method: This quasi-experimental study was conducted on 148 mothers and their children aged 1–6 years who referred to the health centers of Tabriz, Iran, and divided into two groups: intervention (n=74) and control (n=74). Data were collected through a questionnaire that included demographic characteristics, oral self-care behaviors and structures of TPB. Questionnaires were completed by both groups at before, immediately, 3 and 6 months after the intervention. The experimental group received three educational sessions, each session was held for 120 minutes. The educational methods such as lectures, group discussion, demonstrations were used. Data were analysed using SPSS (ver18) software and Chi-square, Independent samples t-test and repeated measure ANOVA at the significant level of < 0.05.

Results: Before the intervention, there were no statistically significant differences between both groups in oral self-care behaviors and structures of TPB (p> 0.05). Immediately, 3 and 6 months after the intervention the mean scores of oral self-care behavior a significant increase in both mothers and their children in the intervention group (p< 0.001). In the experimental group, brushing children’s teeth twice a day increased significantly from 8.1% (6/74) to 55.4% (41/74) 6 months after the intervention (p< 0.001). Also, at immediately, 3 and 6 months after the intervention, the mean scores of mothers’ attitude, subjective norm, perceived behavioral control, and intention towards her children oral health were significantly increased in the experimental group compared to the control group (p< 0.001).

Conclusion: According to the results of this study, the intervention based on the theory of planned behavior improves both mothers and their children’s oral self-care behavior.

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Introduction
Oral health is "as being free of chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the mouth and oral cavity"[1].

According to the World Health Organization, dental caries is still a major oral health problem, and about 60-
90% of school children and the vast majority of adults are affected by dental caries [2]. According to the national oral health survey, 89% of the 6-year-old children have had dental caries experience [3]. Also, the prevalence of dental caries among preschool children was reported 70% in Shaghaghian et al. [4], study in Shiraz. In a study by Gharilpour et al. [5] decayed, missing, and filled teeth (dmft) scores were 5.49±3.6 in Iranian preschool children.

Oral self-care behaviors are necessary for the oral health promotion[6] and oral self-care habits such as tooth brushing, dental flossing, and regular dental visits are recommended for good oral health and prudential health[7-8]. According to this literature, despite recommendation of children’s oral health behavior, it was undesirable among children. The recent study in Iran showed that 25.0% of children never brushed their teeth that indicate poor oral self-care in children[9].

Studies reported the positive effect of mothers’ oral health behaviors on their children oral health, and while in a study, mothers’ tooth brushing was a significant indicator for the tooth brushing behavior of the children [9-10].

Studies strongly recommended that there is a serious need for planning and performing appropriate programs to improve children’s oral health behavior is highly suggested [5, 11-12]. Health education is a vital component in promotion of oral health [13]. This regarding, theory-based educational interventions to promote oral health habits recommended [14-16] and it is more successful for changing and maintaining healthy behavior [17-18]. The theory of planned behavior (TPB) is a theory that describes the main elements of healthy behavior, and it consists of five constructs; intention, attitude, subjective norm and perceived behavioral control. The intention is formed by an individual’s attitude towards the behavior, subjective norm and perceived behavioral control. Attitude includes beliefs about the positive or negative outcomes of the engaging behavior. Subjective norm can be defined as the beliefs of whether important others (e.g. family, dentist, health nurses) think one should engage in a behavior. Perceived behavioral control refers to the degree to which a person believes the engaging behavior is under his/her control [19].

However, based on our knowledge, there is relative ly little theory-based intervention preventive oral health researches about children's oral health. The aims of this study were to evaluate the effect of an educational program based on the theory of planned behavior on maternal and their children oral self-care behavior.

**Materials and Method**

**Study design and population**

This was a quasi-experimental intervention study that was conducted on 148 mothers and their children aged 1-6 years who referred to the health centers of Tabriz, Iran from December 2015 to January 2016. Tabriz (381040N, 461180E) is the North-west of in Iran and the center of East Azerbaijan province.

**Methods**

Among the urban health centers of Tabriz, four centers from the same socio-economic areas were randomly selected. Next, these four centers were randomly allocated to the experimental and the control group. The random sampling method was done among the mothers who referred to at the health center to take health care based on the numbers of health records. The required sample size was determined 148 participants using this formula and divided into two groups: experimental (n=74) and control (n=74).

\[
 n = \frac{Z_1^2 \cdot \sigma_1^2 + Z_2^2 \cdot \sigma_2^2}{ES^2}
\]

In this formula Z₁ and Z₂ extracted from standard normal distribution based on confidence level and power of 0.95 and 0.84, respectively and ES was the effect size of the test that considered 0.5.

**Measuring tools: validity and reliability**

Data were measured through a self-administered questionnaire which was completed at before and follow-up (immediately after intervention, 3 months and 6 months) by participants in experimental and control group. Data were collected through researcher-made questionnaires, which composed of 3 parts: Socio-demographic data, oral health self-care behaviors and structures of TPB.

Part-1: This part we measured the demographic characteristics of the participants including: age, educational level of the participants (primary school, secondary school, high school, diploma, and academic education), employment and marital status, self-rated economic status (poor, average, good), and number of members in family.
Part 2: This part including oral health self-care behaviors of the mothers and their children were measured with 5 questions (3 items for mothers and 2 items for children) derived from the available literature [12, 20]. The example of the items: frequency of tooth brushing ranging from 0 (Irregularly or never) to 4 (twice daily or more). The possible score range was 0–11 and the higher score indicated the higher oral health self-care behaviors.

Part 3: The TPB constructs related to oral health was assessed through 18 questions [20], and the all items presented in Table 1. The TPB-based questions included Attitude (6 items), Subjective norms (6 items), Perceived behavioral control (3 items) and Intention (3 items). Responses for all the TPB constructs were assessed from 1 (strongly disagree) to 5 (strongly agree). The content validity was confirmed by the expert panel of ten academicians (four dental public health, four health education and health promotion, and two health care providers). The mean Content Validity Ratio (CVR) and Content Validity Index (CVI) were calculated at 0.79 and 0.87 respectively. The total reliability (Cronbach’s alpha) for the scale was 0.89.

Intervention

Mothers in the experimental group participated in 3 educational sessions, each session was held for 120 minutes. The educational methods were used such as interactive lectures, group discussions, demonstrations and question-answers. The intervention was delivered by one dentist, a nutritionist, and the health care provider with a background in health education. The educational media such as video projectors, PowerPoint and poster were used in educational sessions. All participants in the intervention group received a pamphlet containing information on oral health, the importance of oral self-care behaviors, the recommended oral health self-care behavior and the correct technique for toothbrushing and dental flossing. The details of the intervention presented in Table 2.

Ethical consideration

The study protocol was confirmed by Isfahan University of Medical Science, Iran (ID number- 93-393296). The purpose of the study was explained to the participants, and a written consent was also obtained from participating mothers who volunteered to enter this study.

Inclusion and exclusion criteria

The eligibility criteria for inclusion having profile in health centers, willing to participate in the study, not suffering from special mental and emotional diseases (concerning their medical profiles). Exclusion criteria were the failure to complete three educational sessions and the lack of desire for participation.

Data Analyses

SPSS version 16 (SPSS, Inc., Chicago, IL, USA) statistical software was used to analyse the data. Descriptive statistics were performed to explore the means and stan-

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Table 1: Number of items, range and Cronbach’s Alpha based on the TPB constructs

<table>
<thead>
<tr>
<th>TPB constructs</th>
<th>Items example</th>
<th>Options</th>
<th>Number of items</th>
<th>Range score</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
</table>
| Attitude        | In my opinion, oral health problems can lead to general health problems in children | 1 = Completely disagree  
2 = Disagree  
3 = No idea  
4 = Agree  
5 = Completely agree | 6  
6-25  
0.81 |
| Subjective Norms| Most people who are important to me (e.g. family, dentist, health nurses) think that my child must brush his teeth at least a once a day | 1 = Completely disagree  
2 = Disagree  
3 = No idea  
4 = Agree  
5 = Completely agree | 6  
6-25  
0.89 |
| Perceived Behavioural Control | I am confident that I could perform my child oral self-care | 1 = Completely disagree  
2 = Disagree  
3 = No idea  
4 = Agree  
5 = Completely agree | 3  
3-15  
0.88 |
| Intention       | I intend to help my child in teeth brushing | 1 = Completely agree  
2 = Agree  
3 = No idea  
4 = Disagree  
5 = Completely disagree | 3  
3-15  
0.75 |
This in press article needs final revision

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Table 2: Details of the educational intervention program on mothers’ about oral health for children

<table>
<thead>
<tr>
<th>Presentation by</th>
<th>Time</th>
<th>Activity and learning objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health care provider</td>
<td>100-120 min</td>
<td>Session1: Get to know other, purpose of the study was explained to the participants, the mother were asked to share their information related child’s oral health, basic knowledge regarding the etiology of development and prevention of oral diseases deciduous (milk) teeth mothers who were successful in cleaning their child’s teeth share their experience with other in the room. At the end of session: provided feedback, each mother was encouraged to ask questions and recommended them to practice oral health care themselves and their children at home. Received a motivation message: children should clean their teeth and gums every day. Teaching method: interactive lecture, discussion group, questions and answers References: Pamphlets and booklets about oral health approved by the Ministry of Health in Iran</td>
</tr>
<tr>
<td>Dentist and Health care provider</td>
<td>150 min</td>
<td>Session2: Review of main topics from previous session, general information related to role of oral health in child’s health, explain difference between deciduous (milk) teeth, factors influencing on dental cavity, discussion about way of preventing dental cavity for infants and children, Show brushing technique, demonstration of how to use dental floss, demonstrate the mothers the correct way to floss their children’s teeth practice brushing teeth with assistance from mother At the end of session: provided feedback, each mother was encouraged to ask questions and recommended them to practice oral health care themselves and their children at home. Teaching method: interactive lecture, discussion group, demonstration, video, questions and answers References: Pamphlets and booklets about oral health approved by the Ministry of Health in Iran</td>
</tr>
<tr>
<td>Dentist, Nutritionist and Health care provider</td>
<td>120-150 min</td>
<td>Session3: Review of main topics from previous session, explain the importance of nutrition on children oral health, healthy snacks, poor oral health can affect children’s nutritional intake explain the importance of dental visits explain the important role of fluoride and identify way to obtain fluoride encourage regular dental visits the mothers were encouraged to discuss their positive and negative beliefs about the oral health children Shown the correct methods of tooth brushing and flossing were demonstrated to the children Children practice brushing teeth with assistance from mother (brushing practice). Teaching method: interactive lecture, discussion group, demonstration, questions and answers at the end of session: provided feedback, each mother was encouraged to ask questions and recommended them to practice good oral health care themselves and their children at home. References: Pamphlets and booklets about oral health approved by the Ministry of Health in Iran</td>
</tr>
</tbody>
</table>

Results

The mean (SD) age of the participants was 29.4 (7.1) and 28.7 (6.4) years in the experimental and control groups, respectively. According to the independent samples t-test, the mean age of the participants was no significant difference between the two groups (t=0.44, p= 0.65). Socio-demographic characteristics of the participants are presented in Table 3. This finding showed that there was no significant difference between both groups in the terms of marital status (p = 0.49), occupation (p=0.6), education level (p= 0.97), economic status (p= 0.62), number of family (p= 0.56).

As shown in Table 3, At the baseline, there was no significant difference in the mean scores of mothers’ attitude, subjective norm, perceived behavioural control, and intention regarding children oral health between two groups (p> 0.05). However, after intervention there was a significant difference the changes of mean scores of mothers’ attitude, subjective norm, perceived behavioural control, and intention regarding children oral health between two groups (p< 0.001). The mean and standard deviations of TPB constructs (attitude, subjective norm, perceived behavioral control, intention) and oral self- care behaviors(months/children) at the baseline and after intervention (immediately, 3 months and 6 months ) are shown in Table 4. The results of the R.M.ANOVA showed a significant increase in TPB constructs, oral self- care behaviors scores of the participants (both mother and child) in the experimental group after the intervention (p< 0.001). But, the TPB constructs and oral self- care behaviors scores of the participants (both mother and child) in the control group was not a signi-fic-ant difference at the baseline and after intervention (p> 0.05).
Children tooth brushing behavior at the baseline and 6 months after intervention are shown in Table 5. The results of the chi-square test showed a significant increase in children tooth brushing frequency in the experimental group after the intervention ($p < 0.001$). Before the intervention, the children brushing twice-daily in the experimental group was 8.1% (6/74) which increased to 55.4% (41/74) after the intervention ($p < 0.001$).

### Discussion

Based on our knowledge, this study is one of the few theory-based interventions on oral self-care behaviors among both mothers and their children. According to our results, after the intervention, mothers’ attitude, subjective norm, perceived behavioral control, intention regarding oral health, and oral self-care behaviors (mother and child) of the experimental group was found to be significantly increased as compared to those who

### Table 3: Demographic characteristics and mean (standard deviation) of TPB structures of participants in control (n=74) and Experimental (n=74) groups

<table>
<thead>
<tr>
<th>Variables</th>
<th>Category</th>
<th>Group</th>
<th>N (%)</th>
<th>Control</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal age</td>
<td>18-28yrs</td>
<td>Experimental</td>
<td>25 (33.7)</td>
<td>26 (35.1)</td>
<td>0.94*</td>
</tr>
<tr>
<td></td>
<td>29-39yrs</td>
<td></td>
<td>38 (51.4)</td>
<td>36 (48.6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>40-49yrs</td>
<td></td>
<td>11 (14.9)</td>
<td>12 (16.3)</td>
<td></td>
</tr>
<tr>
<td>Maternal education</td>
<td>Primary</td>
<td></td>
<td>4 (5.4)</td>
<td>3 (4.0)</td>
<td>0.97*</td>
</tr>
<tr>
<td></td>
<td>Middle school</td>
<td></td>
<td>10 (13.5)</td>
<td>9 (12.2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High school</td>
<td></td>
<td>10 (13.5)</td>
<td>8 (10.8)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diploma</td>
<td></td>
<td>38 (51.4)</td>
<td>40 (54.1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>College or university</td>
<td></td>
<td>12 (16.2)</td>
<td>14 (18.9)</td>
<td></td>
</tr>
<tr>
<td>Number of children</td>
<td>1</td>
<td></td>
<td>33 (44.5)</td>
<td>40 (54.1)</td>
<td>0.56*</td>
</tr>
<tr>
<td></td>
<td>2to3</td>
<td></td>
<td>35 (47.3)</td>
<td>31 (41.9)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>≤3</td>
<td></td>
<td>6 (8.2)</td>
<td>3 (4.0)</td>
<td></td>
</tr>
<tr>
<td>Mother’s occupation</td>
<td>Employed</td>
<td></td>
<td>73 (98.6)</td>
<td>71 (95.8)</td>
<td>0.34*</td>
</tr>
<tr>
<td></td>
<td>Unemployed</td>
<td></td>
<td>1 (1.4)</td>
<td>3 (4.0)</td>
<td></td>
</tr>
<tr>
<td>Child’s gender</td>
<td>Male</td>
<td></td>
<td>40 (54.1)</td>
<td>42 (52.1)</td>
<td>0.49*</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td></td>
<td>34 (47.3)</td>
<td>32 (48.5)</td>
<td></td>
</tr>
<tr>
<td>Economic Status</td>
<td>Low</td>
<td></td>
<td>17 (23)</td>
<td>18 (21.3)</td>
<td>0.36*</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td></td>
<td>43 (58.1)</td>
<td>40 (50.4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High</td>
<td></td>
<td>14 (18.9)</td>
<td>16 (21.6)</td>
<td></td>
</tr>
<tr>
<td>TPB structure Mean(SD)</td>
<td></td>
<td></td>
<td>22.1 (5.3)</td>
<td>21.8 (5.5)</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>Attitude</td>
<td></td>
<td>24.8 (5)</td>
<td>25.3 (4.5)</td>
<td>0.52</td>
</tr>
<tr>
<td></td>
<td>Subjective norms</td>
<td></td>
<td>9.3 (3)</td>
<td>9.7 (2.8)</td>
<td>0.35</td>
</tr>
<tr>
<td></td>
<td>Perceived behavioural control</td>
<td></td>
<td>8.1 (2)</td>
<td>8.4 (1.8)</td>
<td>0.39</td>
</tr>
</tbody>
</table>

*Statistical test was Chi square test, T Statistical test was independent sample t-test (between groups), SD: Standard deviation

### Table 4: Comparing of mean and standard deviation of TPB structures and the oral self-care in the Experimental and control group before and after intervention

<table>
<thead>
<tr>
<th>TPB constructs</th>
<th>Groups</th>
<th>Baseline Mean(S.D)</th>
<th>Mean(S.D)</th>
<th>Time1 Mean(S.D)</th>
<th>Time2 Mean(S.D)</th>
<th>Time3 Mean(S.D)</th>
<th>p Value</th>
<th>F(df)</th>
<th>$\eta^2$</th>
<th>Group</th>
<th>Time/group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude</td>
<td>Experimental Control</td>
<td>22.1 (5.3)</td>
<td>21.8 (5.5)</td>
<td>25 (4.3)</td>
<td>22 (5.4)</td>
<td>26 (3.8)</td>
<td>0.001</td>
<td>8.0 (18.1)</td>
<td>0.55</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>Experimental Control</td>
<td>24.8 (5)</td>
<td>25.3 (4.5)</td>
<td>25.9 (2.3)</td>
<td>25.6 (4.2)</td>
<td>28 (1.8)</td>
<td>0.001</td>
<td>34 (1.5)</td>
<td>0.32</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Perceived behavioural control</td>
<td>Experimental Control</td>
<td>9.3 (3)</td>
<td>9.7 (2.8)</td>
<td>11.2 (2.8)</td>
<td>10.7 (2.5)</td>
<td>11.7 (2.5)</td>
<td>0.001</td>
<td>111 (19.1)</td>
<td>0.60</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Intention</td>
<td>Experimental Control</td>
<td>8.1 (2)</td>
<td>8.4 (1.8)</td>
<td>10.7 (2.5)</td>
<td>8.5 (1.6)</td>
<td>8.5 (1.8)</td>
<td>0.001</td>
<td>153 (23.1)</td>
<td>0.67</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Maternal oral self-care behaviour</td>
<td>Experimental Control</td>
<td>5.9 (1.7)</td>
<td>6.1 (1.8)</td>
<td>7.8 (1.9)</td>
<td>6.2 (1.7)</td>
<td>8.7 (1.9)</td>
<td>&lt;0.001</td>
<td>107 (2.1)</td>
<td>0.59</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Children’s oral self-care behaviour</td>
<td>Experimental Control</td>
<td>3.7 (1.9)</td>
<td>4.1 (1.8)</td>
<td>6.1 (1.6)</td>
<td>4.4 (2.2)</td>
<td>6.6 (1.5)</td>
<td>&lt;0.001</td>
<td>66 (1.8)</td>
<td>0.47</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Time1: immediately after intervention, Time2: 3 months after intervention, Time3: 6 months after intervention, P: P-value, SD: Standard deviation. * Statistical test was Repeated measure ANOVA.
were in control group. Hence, it can be said that theory-based intervention was effective in improving and maintaining the oral self-care behavior of both mothers and their children.

This study showed, the score of the children’s oral self-care a significantly increased in the experimental group after immediately, 3 and 6 months follow-up. This finding is consistent with some revealed that reported the positive impact of the education intervention for mothers and caregivers in improving the children's oral health behavior [21-22]. A study conducted by Naidu et al. [23] indicated that the children’s oral health behaviour increased after parents and caregivers participating in educational intervention program. The investigation of Soussou et al. [24] showed that children's tooth brushing improved from 54% to 85% after oral health education for their mothers. In other study conducted with the aim of "evaluation of a parent-designed programme to support tooth brushing of infants and young children", they showed that children's brushing twice daily increased from 59% to 89% after intervention [25]. Tooth brushing is an important aspect of child oral self-care and tooth brushing twice daily is recommended children’s oral health self-care [24-25]. On the other hand, parents are responsible for their children’s oral hygiene and the mother’s role is significant [12]. In this regarding of this study oral health programs and education for mothers is a significant element to promote oral health self-care both mother and their children which this interventional activity is better to be trained and follow by dentists and healthcare providers frequently.

The results of this study show that the score of the mothers’ oral self-care behaviors a significantly increased in the experimental group after immediately, 3 and 6 months follow-up. This finding is consistent with several previous studies in this field that found a significant improvement on oral health self-care after intervention [26-27]. In another study, it is found that oral self-care skills scores were increased significantly after intervention in the among adolescents [28].

This study revealed that the experimental group had the higher attitude toward oral self-care behaviors score compared to the control group after the intervention. This finding is consistent with several previous studies [29-30]. Amin et al. [31] reported the positive effect of the intervention on based of TPB on participants’ attitude toward oral health behavior. One of the predisposing factors to achieving health-promoting behaviors is the attitude [8]. Some previous studies emphasized the role of mother’s attitude toward child oral health in their children oral self-care behaviors [32,20].

Similar to the findings of previous studies [27, 30-31] in this study, after intervention the mean score of perceived behavioral control towards children's oral health was increased significantly in the experimental group compared to control group. This finding is consistent with a similar previous study by Hafeinia et al. [33] that found the positive impacts of theory-based interventions on maternal perceived behavioral control toward children's oral self-care.

The results of current study showed that mothers’ intention towards children's oral health increased in experimental group significantly compared to the control group. This finding is consistent with Jafari Baghkhieirati et al. [30], Amin et al. [31], which reported positive effects of educational intervention on intention toward oral self-care. Also, this finding is a line with another study that showed the positive impacts of interventions on maternal intention toward children's oral self-care [33]. There were some limitations to this study. Firstly, the questionnaire was self-reported that can be subject to recall and social desirability biases. Secondly, there was no clinical examination of the

<table>
<thead>
<tr>
<th>Category</th>
<th>Before N (%)</th>
<th>Control</th>
<th>After N (%)</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>23(31.1)</td>
<td>20(27)</td>
<td>13(17.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irregular</td>
<td>8(10.8)</td>
<td>10(13.5)</td>
<td>2(2.7)</td>
<td>15(20.3)</td>
<td></td>
</tr>
<tr>
<td>a few times a week</td>
<td>10(13.5)</td>
<td>12(16.2)</td>
<td>6(8.1)</td>
<td>15 (20.3)</td>
<td></td>
</tr>
<tr>
<td>Once a day</td>
<td>28(36.5)</td>
<td>26(35.1)</td>
<td>25(33.8)</td>
<td>24 (32.4)</td>
<td></td>
</tr>
<tr>
<td>Twice or more a day</td>
<td>6(8.1)</td>
<td>9(12)</td>
<td>41(55.4)</td>
<td>7 (9.1)</td>
<td></td>
</tr>
</tbody>
</table>

*chi-square test was used, N (%)= Number(%)
outcome variable (oral self-care behaviors).

Conclusion
In conclusion, the results of this study showed that TPB-based education intervention program for mothers can increase their attitude, intention, perceived behavioral control towards children oral health and oral self-care of mothers and their children. So, TPB-based intervention need to be considered in the preventive oral health program at health centers.

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Conflict of Interest
Authors declare that there is no conflict of interest.

References


