THE ROLE OF PERCEIVED BEHAVIORAL CONTROL IN SHAPING MATERNAL INTENTION TOWARD CHILDREN'S DENTAL HEALTH

Cici Idela[1*], Renidayati[2]
[1]*Department of Dental Health, Poltekkes Kemenkes Padang INDONESIA*
[2]*Department of Nursing, Poltekkes Kemenkes Padang INDONESIA*

**Corresponding author: ciciidela@gmail.com*

Abstract

Maternal behavior typically influences early childhood oral health such as caries. This is relied on the mother's confidence and perceived ability to manage her child's dental care. Within the framework of the Theory of Planned Behavior (TPB), *perceived behavioral control (PBC)* serves as a crucial determinant of intention and subsequent preventive actions. However, limited research in Indonesia has examined how maternal PBC influences the intention to maintain children's oral health. This study aimed to analyze the correlation between maternal perceived behavioral control and the intention to maintain oral health among kindergarten children. A cross-sectional, multivariate design was applied involving 305 mothers selected through cluster random sampling from seven kindergartens. Data were collected using structured questionnaires measuring perceived behavioral control with 18 questions and intention toward dental care with 16 questions, each rated on a 4-point ordinal scale. Data analysis was performed using ANOVA regression with a significance level of $p < 0.05$. The mean perceived behavioral control score was 51.23 ± 7.95, while the mean intention score was 46.44 ± 7.44. Regression analysis revealed a strong and significant correlation between PBC and intention ($\beta = 0.635$; $R^2 = 0.713$; $p < 0.001$), indicating that 71.3% of the variance in maternal intention could be explained by perceived behavioral control. In conclusion, maternal PBC has a strong predictive influence on mothers' intention to maintain children's oral health.

Keywords: Perceived Behavioral Control, Intention, Theory of Planned Behavior, Maternal behavior, Children

1. INTRODUCTION

A crucial determinant of children's overall well-being is oral health. Oral health affects nutrition, growth, school attendance, and quality of life. Starting a good behavior of dental health care should start at the family level. Consistent home care behaviors such as supervised toothbrushing, appropriate use of fluoride, and regular dental visits can prevent dental disease, especially caries in children [1], [2], [3].

One of the causes of dental and oral health problems in society is behavioral factors that neglect dental and oral hygiene, due to a lack of knowledge about the importance of dental and oral care [6], [7]. Dental and oral health maintenance behaviors include tooth brushing behavior. Individual or community dental health is one of the factors that influences individual or community health [8], [9]. Positive dental health maintenance behaviors, for example, the habit of brushing teeth, on the other hand, negative dental health behaviors, for example, not brushing teeth regularly, can cause plaque formation on the tooth surface.

Children are dependent on parents, particularly mothers, to practice dental hygiene behavior [4], [5]. Despite children's dependency on mother's role, not all mothers have a strong intention to carry out the behavior of maintaining children's dental health. One important factor influencing intention is

perceived behavioral control (PBC), which is the extent to which mothers feel they have the ability, time, resources, and opportunity to perform dental care for their children. The problem is, many mothers understand the importance of maintaining their children's dental hygiene, but not all mothers feel able to do it consistently, for example, due to time constraints, lack of support, or difficulty getting their children to brush their teeth. As a result, positive behavioral intentions don't always translate into concrete actions, and this contributes to the high prevalence of childhood caries.

Behavior is commenced from Perceived behavioral control (PBC), which becomes a key to construct the capacity to overcome barriers and perform a behavior. Research grounded in the Theory of Planned Behavior (TPB) indicates that perceived behavioral control (PBC) is a central predictor of behavioral intention and, ultimately, actual behavior. Studies applying TPB to oral health contexts have found that higher parental PBC is associated with stronger intentions to perform oral-health behaviors and better preventive practice uptake.

Studies about parental psychosocial factors, such as PBC, can be a prediction of intention, as revealed by Mohammadkhah et al (2023) that TPB-based educational interventions have improved oral-health intentions and certain behaviors, proven by better DMFT and dental plaque indices across diverse populations, with a p-value of 0.001[10]. Broader surveys underscore that maternal oral-health literacy, stress, and self-efficacy mediate the link between knowledge and child outcomes; integrating these constructs yields better explanatory power than knowledge alone. Parents' oral health literacy and behavior are found to significantly affect their children's oral health status ($p<0.01$) [11]. An intervention that integrates TPB in terms of PBC can directly predict the behavior of the parent regarding their child's behavior [12]. This shows that the integration of TBP in the intervention has an effect on a significant effect on behavior. However, while global studies document PBC's importance, few studies in Indonesian preschool settings quantify how much variance in maternal intention is explained specifically by perceived behavioral control regarding dental health.

Children's oral health is dependent on the mothers' health behavior and consistency at home. A study of quantifying how perceived behavioral control specifically informs maternal intention regarding their children's dental health care is very important, as it addresses a notable gap in local literature. This study aims to evaluate the correlation between PBC and the intention of mothers in their children's dental health care. The findings of the study will provide empirical evidence on how the perceived behavioral control correlates with the intention of the mothers to ensure dental health in children, which will also develop an effective health promotion intervention grounded in the Theory of Planned Behavior (TPB).

2. METHODOLOGY

This type of research is to look at the analysis of the mother's behavioral model in caring for the dental health of early childhood children based on the theory of planned behavior, which is a multivariate study with a cross-sectional approach, namely research to study the dynamics of correlation between risk factors and effects, by means of an approach, observation or data collection at the same time. The study population comprised 305 mothers whose children were enrolled in seven kindergartens across Bukittinggi City. A cluster random sampling method was applied to ensure proportional representation from each kindergarten. The respondents' sample size was determined using Equation 1.

$$N = \frac{4.Z_{\alpha}^{2}.\mu.(1-\mu)}{W^{2}} \quad (1)$$

The proportion of the expected response or prevalence rate is denoted by π. If the actual proportion (p) is unknown, it is assumed to be 50% or 0.50. This assumption is used because it provides the most conservative estimate for determining the sample size. The value of W represents the magnitude of deviation, which is related to the bound on the error of estimation. Typically, the acceptable range of deviation is between 10% and 20%, or in decimal form, 0.1 to 0.2. Meanwhile, Zα refers to the adjusted standard deviation corresponding to a specific level of significance (α). For a 95% confidence level (α = 0.05), the Zα value used is 1.96. Therefore, the calculation of the sample size resulted in Equation 2.

$$N = \frac{4\ x\ 1.96\ (0.05)^2\ x\ 93.33\ (1-93.33)}{(0.2)^2}$$

(2)

$$N = \frac{12.201}{0.04}$$

$$N = 305$$

Based on the formula above, the number of samples to be used in the research was 305 respondents. Respondents met the inclusion criteria: mothers of children officially registered in the selected schools, willing to participate voluntarily, and providing informed consent.

The reason behind the location of research is according to the data of Bukittinggi City in 2023, there were 99.78% women have a literacy rate, including mothers. Thus, the mortality rate of children aged 5 years in Bukittinggi was 6.8%, reduced from 7.9% in 2022. However, the stunting rate in 2023 is 20.1%, which is higher than the standardization of WHO, i.e., 20% at the maximum rate [13]. One of the factors that contributes to stunting is dental health. Poor dental health will reduce the nutrient intake due to difficulties and pain of a toothache, and impaired sleep, which hampers the growth hormone [14]. Nevertheless, the stunting status in Bukittinggi in 2024 reduced to 16.8% [15]. However, this situation is still prone to fluctuation, as according to data from health professionals in Bukittinggi City, including dental practitioners, the number amounts to only 65. Thus, there is an imbalance amount of the residents and the health practitioners. Thus, the mother should take a role in the health of the children.

The independent variable was maternal perceived behavioral control, defined as the mother's belief regarding supports and barriers (control beliefs) and her sense of capability to perform a given behavior. The dependent variable was mothers' intention toward dental care for their children, defined as the measure of how hard a person is willing to try and how much effort they are prepared to put into adopting a behavior. The instrument used was a self-administered questionnaire. The perceived behavioral control section comprised 18 items covering mothers' perceptions of their ability to maintain children's oral health (e.g., ensuring dental check-ups every six months, selecting a child-appropriate toothbrush, monitoring frequency of toothbrushing, using fluoride toothpaste). The intention section comprised 16 items addressing the mother's commitment to behaviors (e.g., intention to maintain the child's oral health, ensure brushing at least twice daily, give fluoride toothpaste). Each item used an ordinal scale of 1 (very inappropriate), 2 (inappropriate), 3 (appropriate), and 4 (very appropriate).

The data analysis was conducted by four processes before the correlation test. The data was processed through editing, where the researchers ensured the questionnaires were complete, relevant, and consistent. This check was also carried out previously during data collection in the field, so that it did not cause problems during the editing process of all questionnaires. Next, the data was processed through coding. Coding refers to the process by which the researcher converts data in the form of letters or text into numerical data, according to the operational definitions and the needs of the analysis. Subsequently, a processing stage of the data was performed, entering the data obtained from questionnaires into a computerized program for further analysis. Next, the clearing stage was conducted by researchers to perform data cleaning by rechecking the entered data to identify and correct any possible errors or missing values. Afterwards, a multivariate ANOVA regression test was carried out to assess the correlation between maternal perceived behavioral control and intention toward dental care. Descriptive statistics (mean, standard deviation, median) summarized variable characteristics. Analyses were conducted at a 95 % confidence level (p-value < 0.05). Correlation strength was interpreted following standard thresholds: very weak (<0.20), weak (0.20–0.39), moderate (0.40–0.59), strong (0.60–0.79), very strong (>0.80) [16].

3. RESULTS

The results consist of the frequency distribution, descriptive statistics of the study variables. Normality test was performed as the initial step before conducting ANOVA Regression test.

3.1 Frequency Distribution of Children by Gender

The frequency distribution of the children of the mothers who were observed in the research is shown in Table 1.

***Table 5**. Frequency distribution based on gender*

Gender	Frequency	Percentage (%)
Male	175	57
Female	130	43
Total	**305**	**100**

According to Table 1, out of 305 children, 175 (57 %) were male and 130 (43 %) were female sstudents. This balanced distribution indicates that both genders were adequately represented, ensuring proportionality in data analysis and minimizing sampling bias.

3.2 Correlation in PBC and intention

A descriptive statistic was presented to see the average and standard deviation of the variables PBC and intention. Subsequently, the normality test was conducted to proceed to the ANOVA Regression which describe the correlation between variables.

***Table 6.** Descriptive statistics of the variables*

Variable	Average	Standard Deviation
Perception Behavioral Control	51.233	7.953
Intention	46.444	7.440

Table 2 shows the mean score for perceived behavioral control is 51.23 ± 7.95, indicating a relatively high average level of maternal confidence in managing children's oral hygiene. The mean intention score of 46.44 ± 7.44 reflects mothers' strong motivation to ensure proper oral care practices, such as regular brushing and fluoride use.

***Table 7.** Normality test results between variables*

Variable	p-value	α
Perception Behavioral Control	<0.0001	0.05
Intention	<0.0001	

Table 3 shows that both variables showed $p < 0.05$, indicating that the data were not normally distributed. Hence, the ANOVA regression was performed. The dataset was sufficiently large for ANOVA regression assumptions under robust estimation to hold, allowing reliable correlation analysis.

Table 8. *Correlation between PBC and intention*

Variable	ANOVA Regression	R^2	p-Value	Regression Coefficient (β)
Perceived Behavioral Control	< 0.0001	0.713	< 0.0001	+ 0.635

Table 4 shows the ANOVA regression yielded an R^2 of 0.713, meaning 71.3 % of the variance in mothers' intention toward dental care was explained by perceived behavioral control. The positive regression coefficient (β = + 0.635) with $p < 0.001$ demonstrates a strong and significant correlation, suggesting that the more control mothers perceive over their children's oral health routines, the stronger their behavioral intention to maintain these practices.

4. DISCUSSION

The present study revealed a strong and statistically significant correlation between maternal perceived behavioral control (PBC) and intention to maintain children's oral health, with an R^2 value of 0.713 and a regression coefficient of β = +0.635 ($p < 0.001$). This finding indicates that mothers' confidence in their ability to overcome barriers and regulate their children's oral health routines in their intention to engage in preventive practices. These results are consistent with findings from other recent research showing that parental control beliefs significantly affect children's dental hygiene adherence and reinforce the role of self-efficacy in predicting preventive dental behavior [17]. This is in line with the Theory of Planned Behavior that at times when individual beliefs that sufficient control can motivate the behavior [10].

The results of the study are aligned with the TPB-based studies that PBC emerges as a key determinant of behavioral intention. As presented by Liu et al (2024) the parental health beliefs model (HBM) constructs the oral health behavior. The perceived susceptibility and perceived severity were significantly associated with children's caries. Besides, the poorer oral health (p-value 0.09) and greater perceived barrier (p-value 0.30) were also associated with lower oral health-related quality of life [18]. Therefore, it highlights the point of importance of the health belief model to be integrated into the education program to promote positive behavior. Besides, this also suggests that mothers' perception of control is not just a psychological variable, but a behavioral enabler that can transform knowledge into a concrete preventive action. In the context of this study, this correlation (β = +0.635) highlights the relevance of psychosocial factors beyond mere awareness or knowledge. Although many health-promotion programs in Indonesia emphasize informational campaigns, these findings indicate that enhancing behavioral self-regulation and perceived capability may yield greater behavioral outcomes. So, the health practitioners are challenged to encourage mothers' confidence to believe in their ability to maintain their children's dental care through training, provision, and providing supportive environment programs which can boost their intention to perform behavior of dental care preservation.

Early childhood caries is preventable by consistent parental-supported behavior, such as toothbrushing [19], [20]. The Theory of Planned Behavior developed one of which is oral health promotion messages through training towards mothers, which was performed by Ihab et al (2023) [21]. Adopting TBP, the mothers feel comfort in the training, which is suitable with their needs, such as mothers were 80% requested to receive training once per week from 8 pm to 2 am (50%), and 60% able to receive the materials in 15-30 minutes during the intervention. This reflects the program's equitable and flexible approach, ensuring accessibility by tailoring the intervention to the mothers' routines and preferences.

The results of adopting TBP in the intervention show an interesting result of correlation. The study shows the magnitude of correlation ($R^2 = 0.713$) observed in this study is higher than that reported in most comparable TPB-based research, which typically explains 40–60% of the variance in behavioral intention (Rajeh et al., 2022) [22]. This could be attributed to the high homogeneity of the sample and the strong role of maternal figures in early child-rearing practices within Indonesian cultural contexts,

where mothers serve as primary caregivers and health decision-makers. The findings thus offer valuable cultural insight into how behavioral control manifests in collectivist settings where social and familial responsibilities often reinforce internal motivation to maintain child health.

The results of the study have several broader implications for the scope of oral health promotion, behavioral theory, and the community-based practice. The findings enable the applicability of TBP to predict and influence the health behavior of the mothers. It is proven by a strong correlation with R^2 = 0.713, which shows that the perceived behavioral control is a powerful determinant of mothers' intention and subsequently can also influence the act of preserving the oral health of the children. this contributes to the theoretical advancement by demonstrating that TPB has become a suitable framework for education with strong familial dan social bonds.

From a practical perspective, the study highlights the importance of responsive and flexible health education strategies. A health professional can customize the respondents or the mothers to arrange the schedule to meet their needs and learning preferences. By these strategies, mothers feel comfortable and tend to achieve higher engagement. Such an approach is aligned with the global recommendations of oral health promotion, which involves equity, customized to meet as needs, which can be different from one to another. Mothers as a critical agents of early childhood health must a strong maternal empowerment through behavioral intervention which can lead to long-term caries reduction in children and prevent other worse diseases. Therefore, oral health policy should also consider family-center models to incorporate behavioral theories and community participation to enhance preventive outcomes.

Overall, this study contributes to the growing body of evidence supporting the integration of behavioral science into public health practice. By demonstrating how TPB-based interventions can be successfully adapted to local sociocultural contexts, it offers a replicable model for promoting sustainable health behavior change across diverse populations.

4.1 Implications, Limitations, and Future Works

This study has proven that there is a strong correlation between PBC and the intention of mothers in dental care of their children, shown by an R^2 value of 0.713. Mothers who perceived their child's oral health as poor were more likely to have children with higher caries prevalence, indicating that maternal awareness plays a crucial role in early detection and prevention.

This study has also supported the constructs of TBP, demonstrating that TPB is an effective theoretical model for explaining oral health–related behaviors among mothers. The implications rely on the intervention based on TPB principles, which can effectively drive change in mothers' control beliefs. The intervention may vary in providing skill-based workshops, such as in supervising brushing, addressing structural and psychological barriers, such as limited access to dental services and lack of perceived efficacy, and lastly, to integrate the behavioral counseling into maternal and child health visits to reinforce positive control beliefs. Besides, TBP also successfully created engagement in the mothers, where mothers can express preferences, i.e., most participants preferred short (15–30 minute) weekly sessions in the evening, which supports the value of flexible, family-centered health education approaches. This highlights the value of education should put attention to the intervention design which aligns with social norms and caregivers' dynamics, or in other words is highlights the equity.

The study, however, has limitations that include its cross-sectional design, which cannot confirm whether higher PBC will lead to higher intention over time. Next, a self-reported questionnaire data collection suffered from bias. Lastly, is that the study was conducted in one city, which is still insufficient to portray socio-cultural economic contexts in Indonesia. The future works of the study can be assessed with experimental designs incorporating qualitative methods. To support broader research, digital health platforms can be used and collaborate with other dental health professionals and public health authorities.

5. CONCLUSIONS

This study confirms that maternal PCB plays a dominant role in mothers' intention to maintain their children's dental health, indicated by 71.3% influence. Besides, it also shows that there is a strong correlation between PBC and the intention of the mothers ($R^2 = 0.713$; $p < 0.001$). The findings emphasize the focus on behavioral confidence and self-efficacy through skill-based training, barrier reduction, and supportive counseling as the intervention program. Integrating these elements into maternal and child health programs—particularly within kindergarten and community health settings—can effectively strengthen preventive behaviors and reduce the risk of early childhood caries. Future works should analyze using experimental designs, incorporating digital health tools and other dental health professionals and public health authorities to cope with research limitations.

REFERENCES

[1] S. Naavaal and R. Lamsal, "Understanding The Relationship Between Children's Oral Health Utilization and Parents' Use of Healthcare Services," *Frontiers in Oral Health*, vol. 6, no. 1541045, pp. 1–10, May 2025, doi: 10.3389/froh.2025.1541045.

[2] I. Klarić Puđa, K. Goršeta, H. Jurić, M. Soldo, L. A. M. Marks, and M. Majstorović, "A Cohort Study on the Impact of Oral Health on the Quality of Life of Adolescents and Young Adults," *Clin Pract*, vol. 15, no. 4, pp. 1–16, Apr. 2025, doi: 10.3390/clinpract15040076.

[3] S.-Y. Han *et al.*, "A Narrative Review on Advancing Pediatric Oral Health: Comprehensive Strategies for the Prevention and Management of Dental Challenges in Children," *Children*, vol. 12, no. 3, pp. 286–302, Feb. 2025, doi: 10.3390/children12030286.

[4] O. Erdede, E. Sari, N. Kulcu, and R. Yamanel, "Parents' Awareness of Their Children's Oral-dental Health: Knowledge, Attitudes and Practices," *Medicine Science | International Medical Journal*, vol. 11, no. 3, pp. 1599–1602, 2022, doi: 10.5455/medscience.2022.08.186.

[5] Y. B. Prasetyo *et al.*, "Associations between Dependency Behavior and Management Ability in A Cross-Sectional Study of Mother who Care for Children with Avoidant Restrictive Food Intake Disorder," *Jurnal Keperawatan Padjadjaran*, vol. 8, no. 1, pp. 9–20, 2020, doi: 10.24198/jkp.

[6] Ú. McAuliffe, K. Eaton, M. Harding, H. Whelton, J. Cronin, and S. Burke, "'At a Tipping Point': A Comparative Analysis of Oral Health Coverage for Children Across Six European Countries: Denmark, Germany, Hungary, Ireland, Scotland, and Spain," *BMC Oral Health*, vol. 25, no. 1, pp. 492–512, Apr. 2025, doi: 10.1186/s12903-025-05773-1.

[7] J. Blackburn *et al.*, "Pediatric dental care use and parent- or caregiver-rated oral health among Alabama children enrolled in Medicaid," *The Journal of the American Dental Association*, vol. 151, no. 6, pp. 416–426, Jun. 2020, doi: 10.1016/j.adaj.2020.02.016.

[8] S. Ojok *et al.*, "Factors Associated with Utilization of Oral Health Services Among Adults Aged 18–70 years in Lira district, Northern Uganda: a Community-based Cross-sectional Study," *BMC Oral Health*, vol. 24, no. 1, pp. 1322–1332, Oct. 2024, doi: 10.1186/s12903-024-05082-z.

[9] Y.-C. Lin *et al.*, "Comparing Individual-, Family-, and Community-Level Effects on The Oral Health of Preschool Children: A Multilevel Analysis of National Survey Data," *BMC Oral Health*, vol. 23, no. 1, pp. 353–361, Jun. 2023, doi: 10.1186/s12903-023-03077-w.

[10] F. Mohammadkhah, R. M. Amirhajelu, M. Bakhtiar, S. A. Salemi, M. Kevenjan, and A. K. Jeihooni, "The Effect of Training Intervention Based on The Theory of Planned Behavior on Oral and Dental Health Behaviors in Pregnant Women," *BMC Oral Health*, vol. 23, no. 1, pp. 521–529, Jul. 2023, doi: 10.1186/s12903-023-03239-w.

[11] K. Wu, W. yin, X. Liang, L. Zou, and Z. Yang, "The Influence of Parents' Oral Health Literacy and Behavior on Oral Health of Preschool Children Aged 3–6 Years- Evidence from China," *BMC Oral Health*, vol. 24, no. 1, pp. 1445–1452, Nov. 2024, doi: 10.1186/s12903-024-05213-6.

[12] K. Hamilton, A. van Dongen, and M. S. Hagger, “An Extended Theory of Planned Behavior for Parent-For-Child Health Behaviors: A Meta-Analysis,” *Health Psychology*, vol. 39, no. 10, pp. 863–878, Oct. 2020, doi: 10.1037/hea0000940.

[13] Women’s Empowerment and Child Protection Service, “Profil Gender dan Anak Tahun 2024 (Profile of Gender and Children in 2024),” Bukittinggi, Sep. 2024.

[14] Z. J. Sadida, R. Indriyanti, and A. S. Setiawan, “Does Growth Stunting Correlate with Oral Health in Children?: A Systematic Review,” *Eur J Dent*, vol. 16, no. 01, pp. 32–40, Feb. 2022, doi: 10.1055/s-0041-1731887.

[15] Kementerian Kesehatan RI, *Survei Status Gizi Indonesia*. 2025.

[16] S. N. Papageorgiou, “On Correlation Coefficients and Their Interpretation,” *J Orthod*, vol. 49, no. 3, pp. 359–361, Sep. 2022, doi: 10.1177/14653125221076142.

[17] G. K. Doğan, Y. Polat, and S. Özüdoğru, “Parental awareness and attitudes towards pediatric dentistry and children’s oral health,” *BMC Oral Health*, vol. 25, no. 1, pp. 672–687, Apr. 2025, doi: 10.1186/s12903-025-06037-8.

[18] S.-M. Liu, Y.-M. Xin, F. Wang, P.-C. Lin, and H.-L. Huang, “Parental Health Belief Model Constructs Associated with Oral Health Behaviors, Dental Caries, and Quality of Life Among Preschool Children in China: A Cross-Sectional Study,” *BMC Oral Health*, vol. 24, no. 1, pp. 1497–1509, Dec. 2024, doi: 10.1186/s12903-024-05290-7.

[19] S. R. Smith, J. Kroon, R. Schwarzer, and K. Hamilton, “Promoting Regular Parental Supervised Toothbrushing: An Additive Intervention Design Adopting The Health Action Process Approach,” *Appl Psychol Health Well Being*, vol. 16, no. 1, pp. 315–337, Feb. 2024, doi: 10.1111/aphw.12489.

[20] S. R. Smith, J. Kroon, R. Schwarzer, and K. Hamilton, “Parental Social-cognitive Correlates of Preschoolers’ Oral Hygiene Behavior: A Systematic Review and Meta-analysis,” *Soc Sci Med*, vol. 264, p. 113322, Nov. 2020, doi: 10.1016/j.socscimed.2020.113322.

[21] M. Ihab, W. E. E.-D. Abdelaziz, W. Hassan, and M. El Tantawi, “Development and Acceptability of Behavioral Interventions Promoting Mothers’ Brushing of Pre-School Children’s Teeth: The Preparation Phase of The Multi-Phase Optimization Strategy Framework,” *BMC Oral Health*, vol. 23, no. 1, pp. 616–627, Aug. 2023, doi: 10.1186/s12903-023-03351-x.

[22] M. T. Rajeh, “Modeling The Theory of Planned Behavior to Predict Adults’ Intentions to Improve Oral Health Behaviors,” *BMC Public Health*, vol. 22, no. 1, pp. 1391–1399, Dec. 2022, doi: 10.1186/s12889-022-13796-4.