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Effect of Social Media Platform Education on Improving Self-Care Practices for New Mothers Concerning Children's Oral Health

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Abstract:
Introduction: Children's oral health significantly impacts on their overall well-being. This study evaluates the effect of social media platform education on improving self-care practices among new mothers regarding their children's oral health.
Methods: A quasi-experimental design was employed involving 300 first-time mothers aged 20-30 years in Sohag City, Egypt. Participants completed an online questionnaire assessing their knowledge and practices before and after educational interventions delivered via social media over six months. The effectiveness of the intervention was measured through pre- and post-test comparisons of knowledge and self-care practices. **Results**: Post-intervention results demonstrated a significant increase in mothers' knowledge, with satisfactory knowledge rising from 36% to 83.3% (p=0.0001). Additionally, the proportion of mothers practicing daily teeth cleaning for their children improved from 44% to 76.7%. The overall percentage of adequate self-care practices increased from 38% to 89% (p<0.001).
Conclusion: The educational intervention utilizing social media platforms effectively enhanced new mothers' knowledge and self-care practices related to their children's oral health. This approach can be a valuable tool for promoting dental hygiene and preventing oral health issues among children.

Keywords: *Social media; oral health; mother; dental hygiene; education, self-care practices.*

Introduction:

Children's oral health is crucial for their overall well-being, influencing their dietary habits, speech development, sleep quality, and growth. Strong evidence illustrates the reciprocal relationship between oral health and a child's overall health, which includes physical, cognitive, social, and emotional aspects. Poor oral health in children is linked to various physical and psychological problems, such as low birth weight, premature birth, and iron deficiency. Additionally, the social consequences of inadequate oral health during childhood can lead to sleep issues, academic

challenges, lower self-esteem, and higher rates of school absenteeism [1&2].

Teeth problems are frequently observed in childhood, particularly when children contract a Streptococcus infection at an early age. Such infections can adversely affect crucial factors like maintaining good oral hygiene and adhering to a non-cariogenic diet. The quality of care provided to children is closely linked to the education and motivation of mothers regarding oral health. It is essential for mothers to have access to practical, straightforward, effective, and cost-efficient methods for promoting their children's dental well-being. Currently, pediatric dentistry emphasizes the importance of fostering oral health in children, highlighting that healthy eating and hygiene practices are vital for the prevention of dental diseases [3]. Dental issues are recognized as a widespread concern globally and represent a significant public health challenge in numerous countries. The prevalence of dental problems among preschool-aged children varies, with reported rates ranging from 6.2% to 41.6%. In the Middle East, prevalence rates have been documented between 11.1% and 33%. Additionally, the incidence of dental caries in primary teeth tends to increase as children age, particularly between the ages of 3 and 5 years [4]. A child with good oral health can communicate, eat, and engage socially without experiencing discomfort or illness. In contrast, poor oral health and related infections can lead to various issues, including difficulties with eating and sleeping, speech impairments, and decreased self-esteem. Research indicates that children suffering from toothaches tend to have lower academic performance, with their learning and attendance not showing significant improvement [5]. Maintaining proper oral hygiene is essential for preventing dental problems such as cavities, gingivitis, halitosis, dental caries, gum disease, malocclusion (misaligned bite), loose teeth, and oral injuries [6]. It is vital to assess mothers' knowledge, attitudes, and practices (KAP) regarding dental health, as these factors significantly influence the occurrence of dental caries in their children. Studies have shown a strong correlation between mothers' negative attitudes and limited knowledge and the prevalence of dental issues in their children. Understanding these relationships can lead to a more comprehensive insight into the factors contributing to children's dental problems, facilitating early detection and effective treatment [7]. Moreover, Alsharif et al. (2020) [8] found that when mothers possess fundamental knowledge about oral health, they tend to adopt positive attitudes and practices regarding dental hygiene, which can effectively prevent dental issues.

Electronic education represents a contemporary approach that utilizes various tools and technologies to deliver educational content. This encompasses a range of resources, including electronic media, extensive networks such as the internet and extranet, compact discs, multimedia software, and computer simulation modeling. Social-platform education can be viewed as an extension of electronic education, integrating multiple media types to enhance learner interaction and engagement with the material, thereby fostering creativity and improving educational outcomes [9]. Social media platforms are online communication tools that enable users to interact by sharing and consuming information. In this article, these platforms refer to services such as WhatsApp, Messenger, and mobile phones [10]. The primary objective of social-platform education is to elevate learners' knowledge and skills. One notable advantage of this approach is its accessibility for individuals with low literacy levels. Research has demonstrated the effectiveness of social-platform education for patients with chronic conditions, such as those undergoing heart surgery and managing heart failure [11].

Nurses play a crucial role in assisting parents with managing their children's food intake and oral hygiene practices. They offer guidance on improving these oral health behaviors and encourage mothers to perform mouth checks. Additionally, nurses refer children with oral health concerns for early detection and treatment of dental issues. They provide parents with resources for oral health interventions and share up-to-date information on the benefits of fluoride, along with various other topics related to oral health promotion [12].

Study Significance:

The increasing prevalence of dental issues among children highlights the urgent need for effective education and intervention strategies aimed at parents, particularly new mothers. Given the pivotal role that mothers play in shaping their children's health behaviors, understanding how to leverage social media platforms for educational purposes can significantly impact children's oral health outcomes. In a study conducted by Alzaidi and Alanazi (2022), [13] 496 boys and 503 girls, totaling 999 Egyptian children, were found to have dental caries. Parents bear a significant responsibility in teaching their children proper oral hygiene practices. [14]

However, mothers of preschoolers often pay insufficient attention to primary prevention strategies for dental issues and lack adequate knowledge and practice concerning healthy dental care. Few national studies have examined how health education influences mothers' understanding and behaviors related to their children's dental health. Social media undeniably serves as a valuable tool for raising awareness among children, adolescents, and their parents regarding oral hygiene and health. However, it can also be seen as a double-edged sword due to the lack of control over the dissemination of

information and the potential for manipulation of data in ways that may be detrimental rather than beneficial to oral health improvement. Therefore, it is essential to approach its use with caution. While there is a wealth of e-content available online, much of it requires enhancement to effectively guide children in maintaining their oral health. As professionals, we can improve the quality of these resources and inform relevant authorities about misleading content, thereby assisting in the removal of inappropriate or harmful videos from the internet. [1] For that reason, this study was conducted to evaluate the effect of social media platform education on improving self-care practices for new mothers concerning children's oral health

Research hypothesis:
H1: Social media platforms educations significantly enhance the self-care practices of new mothers regarding their children's oral health & improving dental hygiene behaviors.

Subjects and Methods:
Research design:
This study employed a quasi-experimental research design featuring a one-group pre- and post-test approach to determine the cause-and-effect relationship between independent and dependent variables. Unlike true experimental designs, this method does not involve random assignments; rather, participants are assigned to groups based on non-random criteria. This approach is particularly valuable in scenarios where ethical or practical considerations prevent the use of true experiments **(Creswell, 2022)**.

Subjects & Setting:
This study was carried out in Sohag City, Egypt, utilizing an online questionnaire distributed through various social media platforms, including Facebook and WhatsApp groups. The initial sample group for this study was selected using purposive sampling of 300 mothers, which involved targeting mothers who met specific criteria: they were aged 20 to 30 years, first-time mothers, and active users of social media platforms. This method ensured that the sample was relevant to the study's objectives, as it focused on a demographic likely to benefit from the educational interventions related to oral health. Following the establishment of this purposive sample, a snowball sampling technique was employed to expand the participant pool.

Tools of data collection:
Tool I: Questionnaire on Mothers' Knowledge and Practices Regarding Children's Oral Health
This assessment tool was created by the researcher following a review of relevant literature. [15-16]. It consists of three sections: The first section gathers demographic data from new mothers, including their age, educational level, employment status, and place of residence. The second section includes 20 multiple-choice questions aimed at evaluating the mothers' understanding of various topics related to oral health. These topics cover issues such as dental problems, the number of baby and permanent teeth, the timing of tooth eruption, the ideal duration for tooth brushing sessions, the frequency of toothbrush replacements, factors contributing to dental issues, the link between dietary habits and dental caries, the appropriate age for a child's first dental visit, the concepts of calculus and plaque, the purpose of fluoride in toothpaste, the impact of plaque on oral health, the relationship between primary and permanent teeth concerning dental diseases, and the perceived influence of a child's oral health on their overall health.
The final section assesses the practices related to children's oral health through nine items. These items examine the daily frequency of teeth cleaning, the time allocated for brushing, the cleansing aids utilized, the materials employed for cleaning teeth, how often the toothbrush is changed, the type of toothpaste used, the practice of rinsing the mouth after meals, the cleaning of the tongue post-meal or during brushing, and the frequency of consuming candies, chocolates, or sweets each day. For both correct and incorrect responses, the overall percentages of mothers' knowledge were calculated. Each correct response received one point, while incorrect responses received zero points. A score of 60% or higher on the percentage scale indicated satisfactory knowledge and adequate practice, whereas a score below 60% was classified as unsatisfactory.

Validity and reliability:
Prior to implementing the study, five experts in pediatric nursing, community health nursing, and oral and dental medicine evaluated the content validity, clarity, comprehensiveness, appropriateness, and relevance of the assessment tools and social media educational instructions. Their assessment ensured that the content was suitable, and that the language used was clear, leading to no modifications being made. A pilot study was conducted involving 10% of the mothers (30 participants) to assess the clarity and feasibility of the research process. Based on the findings from the pilot study, necessary modifications were made to refine the final version of the assessment tools. To further establish the reliability of the instruments, the Cronbach's α test was conducted, revealing a reliability coefficient of 0.86 for knowledge-related questions, 0.76 for attitude-related questions, and 0.89 for questions concerning reported practices

Ethical considerations:
The ethical committee of the Sohag University Faculty of Nursing granted approval for the study prior to its initiation. The researcher provided a clear explanation of the study's purpose to the mothers involved. Participants were informed that their involvement was entirely voluntary, and they had the option to decline participation or withdraw at any time without needing to provide a reason. Additionally, assurances were given that their information would remain confidential and would be used solely for research purposes.

Field work
The data collection and educational interventions were conducted over a six-month period, starting in May 2024 and concluding at the end of February 2025. To collect data, an online questionnaire was distributed to participating new mothers through a link shared in WhatsApp and Facebook groups. The first page of the questionnaire provided an overview of the study's background, objectives, and expected outcomes. Researchers held virtual meetings with participants using Zoom, utilizing chat, video, and phone calls to facilitate communication. To ensure comprehension among all participants, these sessions were conducted in Arabic and included four theoretical sessions and one practical session, each lasting between 40 and 50 minutes, scheduled twice a week. Participants in the pre-test received an educational booklet via a Google Form shared through Facebook and WhatsApp groups.
To enhance maternal education, researchers developed posters, PowerPoint presentations, and videos. Additionally, online audio and video materials were created to clarify the contents of the booklet and improve the knowledge and practices of new mothers regarding their children's dental issues. The educational booklets aimed to achieve several objectives: primarily, to enhance new mothers' knowledge and practices concerning their children's dental problems. Specific objectives included listing the number of primary teeth and their eruption timeline, identifying the ideal duration for tooth brushing, understanding the frequency of toothbrush replacement, discussing the importance of teeth, enumerating different types of teeth, recognizing dental caries in primary teeth, determining the optimal age for a child's first dental visit, defining plaque and calculus, discussing the significance of fluoride in toothpaste, explaining how plaque affects oral health, listing primary teeth issues that may impact permanent teeth, and discussing the effects of oral health on a child's overall well-being while promoting ideal oral hygiene practices.

Statistical analysis:
Data entry and statistical analysis were conducted using SPSS for Windows version 20. Descriptive statistics were utilized to present the data, with frequencies and percentages for qualitative variables and means and standard deviations (SD) for quantitative variables. The t-test was employed to evaluate differences between two means, while the chi-square (χ^2) test was used to compare proportions among qualitative parameters. Pearson's correlation coefficient (r) was applied to assess the degree of association between two sets of variables. A P-value of less than 0.05 was considered statistically significant.

Results:
Table (1) presents the demographic profile of the 300 mothers included in the study. A notable majority (76%) of mothers were aged 21 years or older, with a mean age of 20.8 years (± 7.88), indicating a predominance of relatively younger mothers. In terms of education, nearly half (48%) had only primary education, while 30% completed secondary education and 22% attained a university degree. The majority (70%) of the mothers were housewives, and a significant portion (80%) resided in rural areas.

Table (1): demographic characteristics of the mothers studied

Variables	n= (300)	%
Mothers ' age in years		
< 21	72	24.0
≥ 21	228	76.0
Mean ±SD	20.8 ± 7.88	
Educational level		
Primary education	144	48
Secondary education	90	30.0
University education	66	22.0
Occupation		
Employee	90	30.0
Housewife	210	70.0
Residence		
Rural	240	80.0
Urban	60	20.0

The comparison of knowledge scores before and after the intervention shows a significant improvement in mothers' knowledge regarding self-care practices for their children's oral health as illustrated in table (2). The proportion of mothers with satisfactory knowledge increased dramatically from 36% pre-intervention to 83.3% post-intervention, with a highly significant p-value of 0.0001. The total knowledge mean score also improved from 8.2 (± 2.3) to 16.5 (± 0.7), indicating the effectiveness of the educational intervention.

Table 2: Overall knowledge score for mothers regarding self-care practices for their children's oral health

Total level of knowledge	Pre intervention		Follow up (2 months later		P-value
	n (300)	%	n (300)	%	
Satisfactory knowledge	108	36	250	83.3	0.0001**
Unsatisfactory knowledge	192	64	50	16.7	
Total knowledge mean score	8.2 ± 2.3		16.5 ± 0.7		**t-test** =16.58 *p*= 0.0001**

(**) highly statistical significance at p < 0.001

Table 3: Mothers' Self-Care Practices for Their Children's Oral Health. This table illustrates the enhancements in self-care practices among mothers following educational intervention. Notable improvements were observed in several critical areas: the proportion of mothers who reported cleaning their children's teeth daily increased significantly from 44% to 76.7%. Additionally, the use of toothbrushes surged from 46.7% to 91%, while the reliance on fingers for cleaning decreased markedly. Overall, the percentage of mothers demonstrating adequate self-care practices rose dramatically from 38% to 89%, with all observed changes achieving statistical significance (p < 0.001).

Table 3: Mothers' Self-Care Practices for Their Children's Oral Health

Variables	Pre-intervention		Follow up (2 months)		P -value
	No	%	No	%	
Daily frequency of teeth cleaning					
0	138	46	0	0	0.001**
1	132	44.0	230	76.7	
2	30	10	70	23.3	
The time allocated for brushing					
Less than 1 minute	96	32.0	12	4	0.001**
1 minute	154	51.3	168	56	
2 minutes	50	16.7	120	40	
The cleansing aids utilized					
Toothbrush	140	46.7	273	91	0.001**
Finger	160	53.3	27	9	
The materials employed for cleaning teeth					
Tooth past	126	42.0	249	83	0.001**
Tooth powder	14	4.7	51	17	
Others	160	53.3	0	0	
Frequency of changing toothbrush					
Not using toothbrush	160	53.3	0	0	0.001**
Anytime when it damaged	102	34.0	216	72	
Within 3–6 months	38	12.7	84	28	
Type of toothpaste used					
Not using toothpaste	160	53.3	42	14	0.001**
Fluoridated	105	35.0	258	86	
Non- Fluoridated	0	0	0	0	
Mouth rinsing after meal					
Regular	78	26.0	242	80.7	0.001**
Irregular	222	74.0	58	19.3	
Cleaning of the tongue post-meal or during brushing					

Yes	70	23.3	192	64.0	0.001**
No	230	76.7	108	36	
Frequency of consuming candies, chocolates, or sweets each day.					
1-2 time	78	26.0	247	82.3	0.001**
2-4 times	180	60	40	13.3	
5 times & more	42	14	13	4.3	
Total practice score					
Adequate	114	38	267	89	0.001**
Inadequate	186	62	33	11	

Table 4: Correlation Between Total Knowledge and Practice Among the Studied Mothers and Their Demographic Data. The correlation analysis reveals interesting patterns between demographic variables and mothers' knowledge and practices. Educational level showed a strong negative correlation with knowledge (R = -0.554, p = 0.0001), indicating that higher education is associated with greater knowledge. Occupation and residence also showed significant correlations with practices, suggesting that socioeconomic factors might influence self-care behaviors. However, age did not show a significant correlation with either knowledge or practice, suggesting that age alone may not be a determinant of oral health knowledge or practices among mothers.

Table (4): Correlation between Total Knowledge and Practice among the Studied Mothers and their demographic data

Items		**Knowledge**	**Practice**
Mothers' age	R	-.135-	-.105-
	P – value	.336	.443
Mothers' educational level	R	-.554	.025
	P – value	.0001**	.872
Mothers' occupation	R	.078	-.345
	P – value	.612	.017*
Mothers' residence	R	.047	-.289
	P – value	.728	.038*

**. Correlation is significant at the 0.01 level

The relationship between total knowledge and practice among the mothers studied demonstrates notable differences between pre- and post-intervention. Prior to the intervention, the correlation coefficient (R) between total knowledge in the pretest and practice was recorded at 0.036, accompanied by a p-value of 0.821. This suggests a very weak positive correlation that is not statistically significant. Conversely, following the intervention, the analysis of total knowledge in the post-test revealed a stronger correlation with practice, reflected in an R value of 0.425 and a p-value of 0.005. This indicates a moderate positive correlation that is statistically significant, highlighting the impact of the intervention on enhancing both knowledge and practice.

Table (5): Correlation between Total Knowledge and Practice among the Studied Mothers

Items	**Practice**			
	Pre-intervention		**Follow up (2 months)**	
	R	***p***	**R**	***p***
Total knowledge pretest	0.036	0.821(N.S)	---	---
Total knowledge post test	---	---	0.425	0.005

*.Correlation is significant at the 0.05 level

Discussion:

Dental issues can significantly impact an individual's quality of life, affecting a child's ability to eat, sleep, and socialize. These problems can also diminish a teacher's effectiveness. [15] Furthermore, caries in primary teeth is considered one of the best indicators of dental problems in permanent teeth, highlighting the importance of maintaining oral health during early childhood. Therefore, implementing Educational Program Planning (EPP) focused on oral health for this population is essential. [8] Following the intervention, improvements in knowledge and self-care practices among new mothers were observed, emphasizing the need for self-care strategies to increase awareness and positive behaviors that promote healthy dental habits in children. This study aimed to assess the impact of educational instructions delivered via social media

on the self-care practices of new mothers regarding their children's dental health. The demographic analysis of the mothers revealed a mean age of 20.8 ± 7.88 years, with over three-quarters being older than 21. Less than three-quarters were housewives, most lived in rural areas, and fewer than half had completed secondary education. Their inexperience and younger age may contribute to the existing knowledge gap regarding oral health practices. According to the findings of a study conducted by Rossato et al. (2021), [12] which examined mothers' knowledge and practices regarding infant oral health care throughout the first year of a child's life, 53.9% of mothers aged 19 to 29 met these criteria. According to **Almzury's (2022)** [5] study on the health of mouth care for children under five in Iraq, 44.5% of moms between the ages of 20 and 29 did so. This study underscores the necessity for mothers of young children to improve their understanding of oral health issues and to cultivate skills for effectively educating their children. The significance of adhering to instructional guidelines disseminated through social media platforms is also emphasized. Given that participants received guidance and exhibited an increase in knowledge, these findings highlight the critical need for accessible information on oral health. Research by Farag et al. (2019) [17] assessed the oral health status of preschoolers in the El-Suez governorate, revealing that oral health education programs significantly enhanced knowledge, habits, and attitudes towards dental care. These results are consistent with those of Shenoy and Sequeira (2023), who explored the impact of dental education programs on oral hygiene practices and overall oral health status in India. Additionally, Khan et al. (2022) [14] found that 55.1% of 572 Saudi women were aware that the first primary tooth typically erupts around six months of age. In contrast, a study by Rajanna et al. (2019) [18] indicated that 79.4% of women in Bangalore City were unaware of the timing of their child's deciduous teeth eruption.

Furthermore, nearly all mothers correctly identified key aspects of dental health, including the importance of regular dental checkups and the relationship between oral health and overall health, with an impressive 95.2% alignment with previous findings by Abduljalil and Abuaffan (2019) [4]. A study conducted by Abdat and Ramayana (2020) [19] revealed that all participating mothers (100%) recognized that tooth brushing is essential for preventing oral health issues, while 93.1% acknowledged that frequent consumption of sweet, sticky, and acidic foods could contribute to the development of dental cavities. Approximately 96% of the mothers understood that maintaining oral hygiene through tooth cleaning helps prevent dental caries, and 80% and 85% were aware that consuming sugary foods and drinking soft drinks, respectively, heightens the risk of cavities. Overall, 82.6% of respondents indicated that brushing their teeth twice daily is the recommended practice, as noted by Salama et al., (2021). [20]

The current study revealed that prior to the implementation of educational instructions via social media platforms, only one-third of the participating mothers exhibited a good overall level of knowledge regarding dental health. However, following the intervention, most mothers demonstrated a satisfactory level of knowledge. This improvement underscores the importance of introducing educational guidelines through social media and highlights the necessity for mothers to enhance their understanding and practices related to their children's dental health. These findings align with the conclusions of Masumo et al. (2020), [21] who suggested that the high prevalence of inadequate oral hygiene may stem from either insufficient parental supervision during tooth brushing or a lack of awareness among parents regarding proper oral hygiene practices.

The current study found that following the implementation of instructional guidelines via social media, mothers' practices improved and became adequate. This finding is consistent with research by Shenoy et al. (2019) [22] in India, which demonstrated that school-based dental education effectively enhanced oral health literacy, hygiene practices, gingival health, and overall oral health status among school-age children. Similarly, a study conducted in Scotland by Suryanti and Setiawan (2021) [23] reported improvements in participants' attitudes and oral health behaviors, further supporting the positive impact of educational interventions. In this study, the mothers exhibited a moderately negative correlation between their educational level and their knowledge of oral health. A similar negative correlation was also observed between mothers' place of residence and their practice levels. This finding contrasts with the results of related research by Ashkanani and Al-Sane (2019) and (Chan et al., 2022). [24 &25] To clarify these discrepancies, further research is recommended. Notably, while the current study indicated that mothers' educational levels did not significantly correlate with their understanding of oral hygiene, a substantial correlation was found concerning their oral health and hygiene practices. Mothers with moderate educational levels reported more adequate oral hygiene practices than those with either lower or higher educational backgrounds. These results diverge from findings in other studies (Chan et al., 2022), [25] which may reflect differences in cultural values and beliefs between rural and urban populations. Additionally, higher stress levels experienced by mothers in rural areas stemming from limited access to healthcare, social media misinformation, and transportation challenges when seeking medical care for their children may also contribute to these variations.

The present study identified a highly statistically significant positive correlation between total knowledge scores and practices following the application of educational instructions through social media platforms. This finding aligns with the research by Caroline et al. (2018), [26] which indicated that preventive programs in oral health yield positive outcomes, including a reduction in dental biofilm and improvements in oral hygiene habits. This underscores the critical importance of enhancing mothers' knowledge and self-care practices, as it facilitates their ability to support their children's ongoing growth and learning, thereby enabling them to acquire and apply valuable knowledge effectively. From the researchers' perspective, a lack of sufficient information often leads to inadequate practices. However, the post-intervention results demonstrated that mothers' knowledge improved significantly, which is associated with better practices, thereby validating the effectiveness of the educational interventions. These findings further emphasize the necessity of improving mothers' knowledge and self-care routines to foster their children's development, making the learning process more accessible and allowing them to integrate high-quality information. The study by Caroline et al. (2018) corroborates these results, asserting that preventive oral health programs positively impact the reduction of dental issues, directly linked to enhanced oral hygiene habits.

Study limitations:

The main limitation of our study lies in its dependence on self-reported perceptions, which can introduce bias, as participants may tend to provide socially desirable responses. Additionally, the research was conducted within a single country, which further restricts the generalizability of the findings to other regions or cultural contexts. Longitudinal studies could provide more comprehensive insights into how perceptions change over time. Furthermore, incorporating qualitative methods such as interviews or focus groups could enhance the data quality and reveal the underlying factors that influence children's oral health.

Conclusion:

This study demonstrates that education delivered through social media platforms significantly improves new mothers' knowledge and self-care practices regarding their children's oral health. The findings indicate that effective educational interventions can lead to better dental hygiene behaviors, which are crucial for preventing dental issues in children. By enhancing mothers' understanding of oral health, we can foster healthier habits that benefit children's overall well-being. Therefore, the researchers recommended the following: Establish routine follow-up sessions to reinforce knowledge and practices, ensuring mothers remain informed about the latest oral health guidelines and recommendations. Conducting large scale future studies to evaluate the long-term impact of social media-based educational interventions on oral health practices among diverse populations.

Conflicts of interest

There are no conflicts of interest.

AUTHORSHIP CONTRIBUTION:

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