

Effect of Social-Platform-Based Educational Guidelines on First-Time Mothers' knowledge and Practices regarding their Children's Oral Health

Neama Salah Abd Elaziz Soliman Elgendy (1), Atiat Ahmed Soliman Osman (2), Hanan Hassan Elezaby (3), Sabra Mohamed Ahmed (4)

1Fellow pediatric Nursing, Student's Hospital Mansoura University

2Lecturer of Pediatric Nursing, Faculty of Nursing, South Valley University

3Assistant Professor of Family and Community Health Nursing Department, Faculty of Nursing, Port Said University, Egypt

4Assistant Professor of Pediatric Nursing Department, Faculty of Nursing, Sohag University, Egypt

Abstract:

Background: The occurrence of early childhood caries in children may be influenced by the oral health practices and awareness of mothers. It can be supportive and helpful to mothers to understand their knowledge and habits surrounding their children's dental issues so they can better care for their children.. **Aim:** To evaluate the effect of social-platform-based educational guidelines on first-time mothers' knowledge and practices regarding their children's oral health. **Design:** This study was conducted using a quasi-experimental research design. **Setting:** This study was implemented at Sohag City, Egypt. **Sample:** A purposive sample of 400 mothers was used to gather data, on their children in the first year of life during December 2023 from 10 and 30 by using an online questionnaire via Google Form. **Tools:** Three tools were utilized: Tool I: First-time mothers' knowledge questionnaire which included two parts; part one: mothers' demographic data and part two: mothers' knowledge regarding oral health, Tool II: First-time mothers' practice regarding oral health, Tool III, Mothers' satisfaction with social-platform based educational guidelines interventions. **Results:** The results of the study showed that first-time mothers were mainly aged 21 < 26 (73.0%), 49% of them had a secondary education, unemployed (58.0%), and 89% were from urban. a higher score of knowledge and practice was found among first-time mothers post-social-platform-based educational guidelines compared to pre-social-platform-based educational guidelines regarding oral health. A positive correlation was detected between First-time mothers' total knowledge and reported practice scores at <0.001 regarding oral health post-social-platform-based educational guidelines. **Conclusion:** The study concluded that social-platform-based educational guidelines have a positive effect on improving first-time mothers' knowledge and practice regarding their children's oral health. **Recommendations:** Providing first-time mothers with a well-planned health education program to improve their knowledge and reported practice regarding their children's oral health and reinforce possible educational actions, especially in early motherhood, are important to achieve this improvement and to decrease early childhood caries rates.

Keywords: Children, First-time mothers' knowledge and practices, Oral Health, Social-platform-based educational guidelines.

Introduction:

Oral health is considered a large portion of general health. Infants that have good dental health are often healthier physically, mentally, and socially. To guarantee good oral health, the prevention of oral illnesses in newborns should start early. Studies indicate that parents are crucial in ensuring their young children practice proper dental hygiene. Periodontal disorders and dental cavities are more common in expectant mothers (Chaitra et al., 2021).

The most prevalent chronic illness affecting children among all oral illnesses is dental caries. Among

dental caries that affect children under three years old, early childhood caries are one of the most severe types. Even though dental caries can be prevented, the prevention of dental caries has received little attention. Dhull et al. (2022) attribute this to a deficiency in oral health education. From the caregiver—typically the mother—to the kid, there is vertical colonization. Given their central place in a kid's life, mothers' awareness of their dental health will have a major influence on the oral health status of the child. Acquiring appropriate knowledge for moms regarding their infant's dental health care can help lessen the burden of dental caries (Khanh et al., 2020).

Early childhood caries may occur in children of mothers who have certain oral health knowledge and practices. Its incidence might have a detrimental effect on oral health, for example, decreasing masticatory ability and degrading nutritional status. This disease affects children under the age of six, with a prevalence of between 20 and 74% (Consolação Soares et al., 2019). This prevalence could be explained, among other things, by the mothers' ignorance of the need to provide their kids with dental care, since mothers' ignorance of oral health issues and their lack of dental hygiene practices result in higher early childhood caries indices. Results from research evaluating mothers' oral health knowledge and oral health practices concerning their offspring can serve as justification for the application of preventative and promotion strategies regarding children's oral health (Tyagi et al., 2021).

One of the most severe types of dental caries that affects children under three years old is severe early childhood caries. According to the National Oral Health Survey, which was carried out across India, the prevalence of ECC varies between 47.5 and 78.57 in different states (Bali et al., 2022). Though dental caries is preventable, the burden of the disease is very high. This is because of the lack of preventive oral health education. Scientific literature reveals that poor knowledge and attitude among caregivers is the major reason for bad oral health status among children (Berkowitz et al., 2023). Proper knowledge of the mothers regarding the infant's oral health care will be beneficial in reducing the burden of dental caries in children. The American Academy of Pediatric Dentistry (AAPD) recommends the assessment of the mother's knowledge and attitude by using a validated questionnaire which helps to form an effective child oral health promotion program (American Academy on Pediatric Dentistry Clinical Affairs Committee, 2023).

One of the most important factors in creating a preventive measure and ultimately building a solid oral health status for their children is the parents' knowledge and awareness of their children's oral health. In addition, parents' ignorance and inattention to their oral health will influence their children's attitudes and behaviors toward oral health in the future, which will follow them into adulthood (Okada et al., 2022).

Parental ignorance has been identified as a significant predictor of children's poor oral hygiene. Parents typically get advice on dental health from their primary care physicians, dentists, friends, and relatives. When teeth erupt, when to schedule routine

dental checkups, when and how often to brush teeth, whether to use fluoride toothpaste, and what foods and sugars are consumed are all common questions asked by parents. It has been noted that children with parents who are not knowledgeable about oral health are more likely to have dental caries (Vanagas et al., 2022). Poor oral health awareness and knowledge among parents have been shown in numerous studies conducted in underdeveloped countries. Other research, nevertheless, from developed nations showed the contrary (Alyahya, 2019).

Social media, whose definition is expanding and always changing, is used by billions of people worldwide. The term typically refers to Internet-based tools that enable people and societies to share information, ideas, images, and other content; on a professional level, healthcare providers use social media to advance professionalism, raise individual awareness, provoke patients, argue health care rules and practice issues, encourage healthy behaviors, and disseminate health information to the community (Lee Ventola, 2018).

Significance of the study:

Childhood caries prevalence among the group of 999 Egyptians, in a study done by Shenoy & Sequeira, (2019) was 496 boys, and 503 girls had teeth caries. Parents play an important role in teaching their children healthy oral hygiene habits (Saldunaite et al., 2019). It is made clear that educational initiatives are essential for the oral health care of children because mothers often practice poor oral hygiene and have inadequate knowledge of the subject. To lessen the prevalence of oral chronic diseases in preschool-aged children, those strategies should be specifically directed toward mothers of children between the ages of 0 and 6 years. Additionally, it is recommended that mothers be informed about this problem from the prenatal and puerperal stages and that the information they are given be reinforced at each dental visit for a new child. Mothers whose children were older than 12 months old participated in the bulk of research that evaluated oral health knowledge and practice (Dhull et al., 2022).

Parents of children of that age would have likely begun teaching them oral hygiene routines at some point because the children would likely have at least one erupted tooth. Consequently, the parents would have needed accurate information on the matter to carry out these routines in a suitable manner (Chala et al., 2018). Conversely, children aged 12 months

and older would not receive proper oral healthcare if parents were unaware of the importance of starting their child's brushing regimen as soon as their first tooth erupts. The first year of life is also emphasized as a critical developmental period for children and as a time when good dental and systemic health habits can be established (Pentecost & Ross, 2019).

Consequently, it would be ideal that the assessment of mothers' oral health knowledge and oral health practice would be carried out before their children's first year of life. So, this research was conducted to evaluate the effect of social-platform-based educational guidelines on first-time mothers' knowledge and practices regarding their children's oral health

Operational definitions:

Social media platforms are web-based communication tools that enable people to interact with each other by sharing and consuming information. Available social media in this article are Mobile phones, Messenger, and WhatsApp (Gonzalez-Padilla & Tortolero-Blanco, 2020).

Aim of the study:

To evaluate the effect of social-platform-based educational guidelines on first-time mothers' knowledge and practices regarding their children's oral health through:

- Assessing the first-time mothers' knowledge about their children's oral health pre and post-social-platform-based educational guidelines.
- Assessing the first-time mothers' practices about their children's oral health pre and post-social-platform-based educational guidelines.
- Designing and implementing social-platform-based educational guidelines according to mothers' needs.
- Determining the effect of social-platform-based educational guidelines on first-time mothers' knowledge and practices regarding their children's oral health.
- Identifying the association between mothers' knowledge and practice pre and post-social-platform-based educational guidelines.

Research hypothesis:

Social- platform-based educational guidelines are expected to have a positive effect on

improving first-time mothers' knowledge and practice regarding their children's oral health.

Subjects and Methods

Research design:

To accomplish this study a quasi-experimental research design was used pre /post-test used in the study for the evaluation of knowledge and practices by applying the information presented in a training session or with the introduction of a new concept.

Research Setting:

This study was applied in Egypt at Sohag City, using an online questionnaire via Google Forms and submitting the following link(<https://docs.google.com/forms/dle/1FWLPQKsd>)

Subjects:

Data were collected from a total purposive sample of 400 mothers, and their children in the first year of life during online link in December 2023 from 10 and 30 by using an online questionnaire via Google Form obtained from social media such as Facebook and WhatsApp groups who met the inclusion criteria; were between the ages of 20–30 years old, were educated mothers, already use social platforms, and agreed to participate in this study, first time motherhood, and all of them took the pre-and post-test. These mothers completed an online via Google Form that was opened on 10 and 30 December 2023 for about twenty days after the link was closed.

Tool of the study:-

Three tools were utilized:

Tool I: First-time mothers' knowledge questionnaire which included two parts as follows:

Part one: First-time mothers' demographic data:

Four factors related to age, education level, occupation, and place of residence were included in the study's demographic data of the mothers.

Part two: First-time mothers' knowledge regarding oral health:

The questionnaire, which included 20 multiple-choice questions about dental health, was created by the researcher after evaluating recent literature. Examples of the questions were: How many main teeth were there when they all erupted? For how long is a tooth brushing session ideal? What is the

frequency of your child's toothbrush changes? importance of teeth Teeth problems are caused by various factors such as tooth types, dental cavities, primary teeth, dummy use, and dietary habits. Dental caries are prevented by dietary habits. When is the ideal time for your child to have their first dentist appointment? What does calculus mean, and what does plaque mean? What is the purpose of fluoridating toothpaste? How is the mouth affected by plaque? Does dental disease affecting primary teeth affect permanent teeth, and In your opinion, does the oral child's health affect his general health? It was presented to first-time mothers via Facebook groups and What's App interventions (pre/post format) (World Health Organization, 2023; Lemos et al., 2018; Gimenez et al., 2016).

The scoring system

For both right and wrong responses, the overall moms' knowledge percentages were computed. One mark was awarded for each right response, and zero for each wrong response. A mean score for the knowledge was obtained for each area of knowledge by adding up the scores of the items and dividing the total answers by the number of things. Following that, a percentage score was created from these scores. If mothers' knowledge scored 60% or more on the percentage scale, it was deemed satisfactory; if it scored lower, it was deemed unsatisfactory.

Tool II: First-time mothers' practice regarding oral health:

This study focused on the six processes that make up the optimum oral hygiene approach. The researchers established these steps with guidance from The Egyptian Society for Paediatric Dentistry (2015), and introducing videos through the What's App and Facebook group were used to display and measure them. The checklist of moms who skipped any steps was deemed "not done," receiving a score of 0, and the first-time mothers who completed it entirely received a score of 1. The final score was six points.

Scoring system for mothers' reported practice:

Correctly completed steps received a score of 1, while incomplete items received a value of 0. The mean score for the portion was calculated by adding up all of the item scores for each area and then dividing the total by the total number of items. A percentage score was created from these scores. If the mother's practice scored 60% or higher on the

percentage scale, it was deemed adequate; if it scored less than 60%, it was deemed inadequate.

Tool III, First-time mothers' satisfaction with social-platform-based educational guidelines: It contained three statements about whether or not mothers' knowledge and practices were improved by social platform-based educational guidelines interventions, whether or not the contents of the interventions were sufficient, and whether or not mothers were satisfied with the interventions.

The procedure of data collection:

Preparatory phase:

To create the instruments for data collecting and produce the social platform-based educational guidelines interventions, the researchers examined the existing and historical literature, including textbooks, papers, periodicals, and online searches. Before initiating the research, the Sohag University Hospital directors received an official letter from the Dean of the Nursing Faculty requesting their cooperation and consent to collect data from the designated environment.

Validity of the tools:

A board of five expert professors, comprising two professors in community health nursing, two professors in pediatric nursing, and one professor in dentistry medicine with over ten years of experience in the fields, evaluated the tools' face and content validity for clarity, comprehensiveness, appropriateness, and relevance. The tool's content validity index (CVI) was 89%.

Reliability of the tools:

The Cronbach's alpha reliability test was used to measure reliability. Results showed that the first tool had relatively homogeneous items, as indicated by high reliability ($\alpha=85\%$). The second and third tools had correspondingly high reliability ($\alpha=932$ and 914), and the first tool's reliability ($\alpha=89\%$). The Pearson correlation coefficient test was used to compare variables to determine the reliability of the tools. The variables' Pearson correlation coefficient fell between ($P. < 0.5$) to ($P. < 0.001$), indicating a highly significant positive connection between the participants' variables.

A pilot study

A pilot study including 40 mothers, or 10% of the total number of first-time mothers, was carried out following the tool's creation. All of the sample was

comprised of it. The purpose of the exercise was to identify any areas of uncertainty in the instruments, guarantee the transparency of the components, and ascertain the amount of time spent gathering data. The final version of the tools was developed without any changes based on the pilot study's findings, ensuring the clarity and viability of the research method.

Ethical considerations:

- A letter from the dean of Sohag University's faculty of nursing served as official authorization to carry out this investigation. The ethical committee of the Sohag University Faculty of Nursing approved the study before it started. The researcher gave the first-time mothers an explanation of the study's purpose before beginning the questionnaire. She also told them that participation in the study was completely voluntary, that they could decline to take part, and that they could leave the study at any time, for any reason. Additionally, participants received guarantees that the information they provided would be kept private and utilized exclusively for the study.
- The study's implementation was done in three stages: assessment, implementation, and evaluation.

I-Assessment phase:

From December 10, 2023, until December 30, 2023, the real fieldwork was conducted. To create the research, the researchers used an online Google form spreadsheet. To gather data, which included an online questionnaire, they sent the participating first-time mothers a link. What's App and Facebook groups displayed this link. The study's background, goals, and anticipated results were explained to first-time mothers on the first page of the questionnaire.

The [link; https://docs.google.com/forms/dle/1FWLPQKsd](https://docs.google.com/forms/dle/1FWLPQKsd) was sent to all the studied first-time mothers to evaluate their knowledge and practices regarding their children's oral health **using** social-platform-based educational guidelines.

The online questionnaire was used twice. The first time, these were used as a pretest for the assessment of first-time mothers' knowledge about oral health and their reported practice of oral hygiene techniques. The impact of social platform-based educational guidelines interventions on first-time moms' knowledge and practices about their children's dental health was then examined using these tools once more as a follow-up after a week.

The average time spent on first-time mothers' completion of the online questionnaire was

approximately 15 minutes. Each first-time mother involved in the study was informed about the purpose of the study, the components of the tools, and how to answer the online questionnaire.

The researchers provided the first-time mothers who participated in the What's App and Facebook groups with the social-platform-based educational guidelines contents after outlining the goal of the study. They also instructed the first-time mothers on how to use the guidelines.

II-Implementation Phase:

Data were gathered for approximately 20 days, starting on December 10, 2023, and ending on December 30, 2023, after the link was closed. The first thing the researchers did was introduce themselves to the first-time mothers and explain the purpose and nature of the study. An online-prepared Google Form was required of the participants to complete and submit. Women were informed about the Google form through groups on WhatsApp and Facebook. Each new mother was assessed utilizing an online questionnaire as a (pretest) to gather baseline data before the online videos and presentation. On the first page of the online questionnaire, first-time mothers were notified about the purpose and anticipated results of the study, the contents of the instruments, and how to respond. During this stage, Zoom meetings were used by the researchers to conduct virtual meetings with the study participants via chat, video, and phone calls. To guarantee that all study subjects were understood, sessions were conducted in Arabic. These sessions comprised four theoretical and one practical session. Each theoretical and practical lesson lasted between forty and fifty minutes, two days a week.

Through Facebook and WhatsApp groups, mothers who took part in the pre-test received the booklet through a Google Form. To better educate mothers, the researchers produced posters, PowerPoint slides, and films. Additionally, the researchers produced online videos and audio that explained the booklet's contents to improve the knowledge and practices of first-time mothers to improve the oral health of their children.

The following table displays the information contained in the social media platform-based educational guidelines interventions.

Session NO	Subject content	Teaching methods
1	An introductory session that emphasized establishing a relationship between the researchers and the first-time mothers participating in the study and an explanation of the purpose of the social-platform-based educational guidelines	<ul style="list-style-type: none"> • Discussion
2	Education about What is the number of primary teeth when all erupted? What is the ideal duration of brushing your teeth? How often do you change your child's toothbrush, Teeth importance, Types of teeth, dental caries and primary teeth, use of pacifiers, dietary practices that cause teeth problems, and Dietary habits that prevent dental caries?	<ul style="list-style-type: none"> • Powerpoint presentation • Discussion
3	Education about What is the best age for the first dental visit of your child? What does plaque mean, What does calculus mean? What is the importance of adding fluoride to toothpaste, How does the plaque affect the mouth? Do primary teeth problems affect permanent teeth, and Do you think that the oral health of the child affects his general health?	<ul style="list-style-type: none"> • Teaching videos • Powerpoint presentation • Discussion
4	Education about ideal oral hygiene techniques as following <ul style="list-style-type: none"> • Putting the toothpaste on the brush • Brushing teeth and gums with the brush • Cleaning the outer teeth in a circular motion • Cleaning the inner teeth • Cleaning the digestive surfaces in a circle motion • Cleaning the inner teeth from low to high • All steps done 	<ul style="list-style-type: none"> • Teaching videos • Powerpoint presentation • Discussion
5	An overview of the social media-based educational guidelines was provided, and the first-time mothers under study were requested to complete the online questionnaire included in the link provided after the social media-based educational guidelines intervention.	<ul style="list-style-type: none"> • Discussion

Evaluating the social-platform-based educational guidelines:

Five professors who specialize in community health nursing, pediatric nursing, dental medicine, and pediatric nursing all reviewed the social platform instructions. The social media platform-based instructional guidelines and contents about oral health were reviewed by the research experts in the disciplines to ensure clarity and appropriateness.

The general objectives of the social-platform-based educational guidelines were to improve first-time mothers' knowledge and practice regarding their children's oral health.

The primary aims of the social media-based instructional guidelines were to enhance the knowledge and practice of first-time mothers regarding their children's oral health.

Specific objectives: At the end of the social-platform-based educational guidelines the studied first-time mothers were able to:

- 1- List the number of primary teeth and when all erupted.
- 2- Identify the ideal duration of brushing teeth.
- 3- Know how often you change your child's toothbrush
- 4- Discuss Teeth importance
- 5- Enumerate Types of teeth

- 6- Know dental caries and primary teeth
- 7- Identify the best age for the first dental visit of your child.
- 8- Define plaque
- 9- Define calculus
- 10- Discuss the importance of adding fluoride to toothpaste
- 11- Discuss how the plaque affects the mouth
- 12- List primary teeth problems that affect permanent teeth
- 13- Discuss the oral health effects on the child's general health.
- 14- Apply ideal oral hygiene.

III. Evaluation phase:

The questionnaire was re-posted to the participants on the Google Form for collecting after one month of sending the booklet, videos, PowerPoint presentation, and posters (post-test) using the same pre-test tools (tool I (part 2), II, and III) to evaluate the effect of social-platform based educational guidelines on first-time mothers' knowledge and practices regarding their children's oral health.

Statistical analysis:

Data entry and statistical analysis were performed using SPSS for Windows, version 20. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables and mean and SDs for quantitative variables. Differences between two means tests (t-test) were used. The chi-square (χ^2) test was used to compare qualitative parameters. Pearson's correlation coefficient (r) test was used. Statistical significance was considered at P -value <0.05 .

Results:

According to **Table (1)**, 73% of the first-time mothers under study were between the ages of 21 and 26, with a mean age of 19.6 ± 8.44 . In terms of education, 49% of them had completed secondary school, 58% of first-time mothers worked, and 89% of them resided in cities.

Figure (1) showed that 72% of the first-time mothers in the study said that doctors were the primary source of information about their children's oral health.

Table (2) demonstrated that there were highly statistically significant changes (P -value: <0.001) in the first-time mothers' knowledge of their children's oral health before and after social platform-based

educational guidelines. Additionally, a very statistically significant difference in the knowledge scores was displayed in this table.

The data presented in **Figure (2)** indicates that 14% of the first-time mothers under study had a satisfactory total level of knowledge before the implementation of social-platform-based educational guidelines. After the intervention, this level of knowledge improved and became satisfactory for 94% of the first-time mothers under study.

Regarding oral hygiene practice, **table (3)** made clear that a statistically significant difference was observed between first-time mothers' oral hygiene practices before and after the social platform-based educational guidelines intervention ($p<0.001$).

Figure (3) demonstrates that thirty-four percent had adequate total practices before the implementation of social-platform-based educational guidelines. However, among the ninety percent of the first-time mothers in the study, these practices then improved and became adequate following the implementation of social-platform-based educational guidelines.

Table (4): An examination of the first-time mothers under study indicated a moderately negative connection (P value <0.0001) between their educational level and their knowledge. A somewhat negative link (P value 0.0001) was also found between **mothers'** residency and their practice levels.

Table (5) shows that after implementing social media platform-based educational guidelines, there was a moderate correlation between first-time mothers' knowledge and their practices.

According to **Figure 4**, all of the first-time mothers who were studied (100%) said that the educational guidelines based on social platforms contained enough information, and 97% of them expressed satisfaction with the guidelines. Of those surveyed, 96% said that the instructional standards based on social platforms had enhanced their knowledge and practices.

Table (1): First-time mothers' distribution as regards to their demographic data (n=400)

Item	Studied mothers(400)	
	No.	%
First-time mothers ' age in years		
18 < 21	80	20.0
21 < 26	292	73.0
26 < 30	28	7.0
Mean ±Stander deviation	19.6 ± 8.44	
First-time mothers 'education		
-Primary education	100	25.0
-Secondary education	196	49.0
-University education	104	26.0
Occupation		
- Employee	232	58.0
- Housewife	168	42.0
-Residence		
-Rural	44	11.0
-Urban	356	89.0

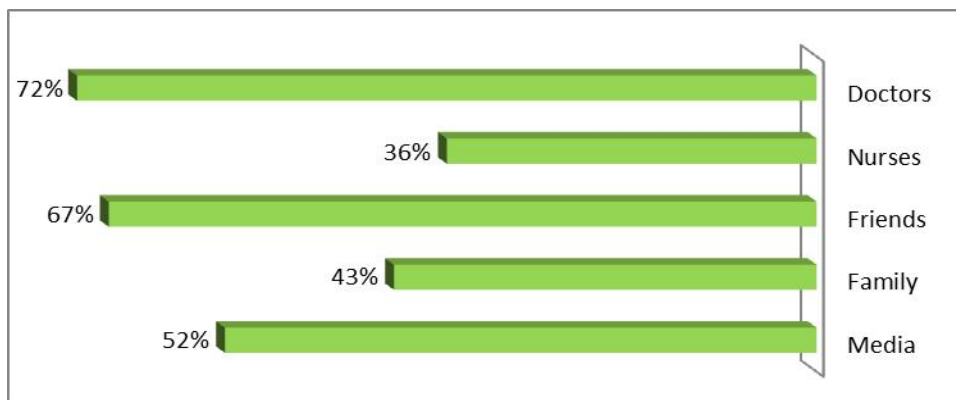


Figure (1): Source of Knowledge Distribution of the Studied First Time Mothers regarding their children's oral health.

Table (2): Mean Scores Comparison of Knowledge among the Studied first-time mothers about their children's oral health Pre- and Post Social Platform educational guidelines (n=400)

Items	Pre social platform based educational guidelines	Post social platform-based educational guidelines	t-test	P-value
Number of primary teeth and when all erupted?	2.5 ± 0.8	3.6 ± 0.2	18.56	0.0001**
The ideal duration of brushing teeth?	3.2 ± 1.1	7.3 ± 1.2	15.44	0.0001**
How often do you change your child's toothbrush	3.5 ± 1.6	6.4 ± 0.3	17.66	0.0001**
Teeth importance	2.4 ± 0.8	3.5 ± 0.2	16.22	0.0001**
Types of teeth	3.5 ± 1.7	7.2 ± 1.2	18.56	0.0001**
dental caries and primary teeth	3.2 ± 1.3	6.3 ± 0.2	19.78	0.0001**
use of pacifiers	2.6 ± 0.5	3.3 ± 0.1	18.34	0.0001**
dietary practices cause teeth problem	3.4 ± 1.3	7.2 ± 1.3	17.79	0.0001**
Dietary habits prevent dental caries	3.2 ± 1.4	6.5 ± 0.2	19.38	0.0001**
The best age for the first dental visit of your child?	2.5 ± 0.7	3.4 ± 0.3	16.48	0.0001**
What does plaque mean	2.5 ± 1.3	7.2 ± 1.2	17.67	0.0001**
What does calculus mean?	3.2 ± 1.2	6.5 ± 0.2	16.74	0.0001**
The importance of adding fluoride to toothpaste	2.3 ± 0.7	3.8 ± 0.1	19.78	0.0001**
How does the plaque affect the mouth?	3.2 ± 1.1	7.2 ± 1.2	17.49	0.0001**
Primary teeth problems and their effect on permanent teeth	3.1 ± 1.5	6.6 ± 0.3	16.58	0.0001**
Does the oral health of the child affect his general health?	2.2 ± 1.4	6.8 ± 0.4	16.58	0.0001**

(*) statistically significant at $p \leq 0.05$

(**) highly statistical significance at $p < 0.001$

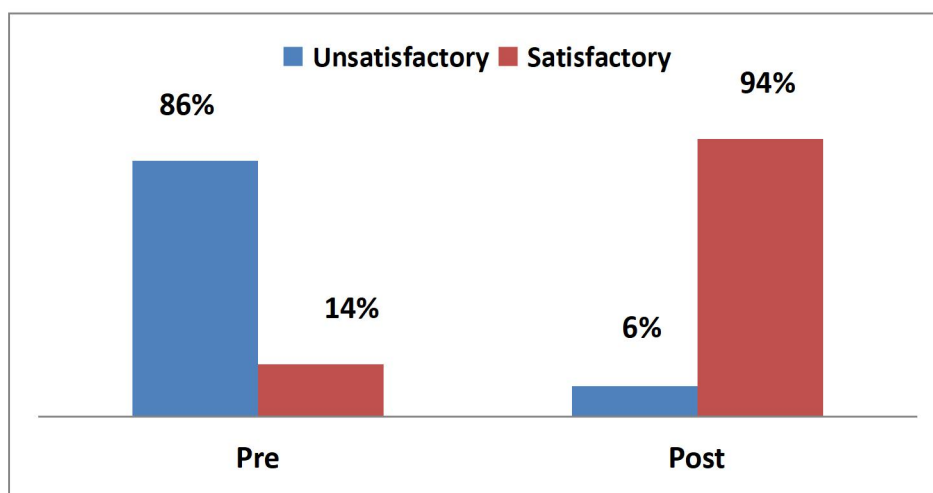
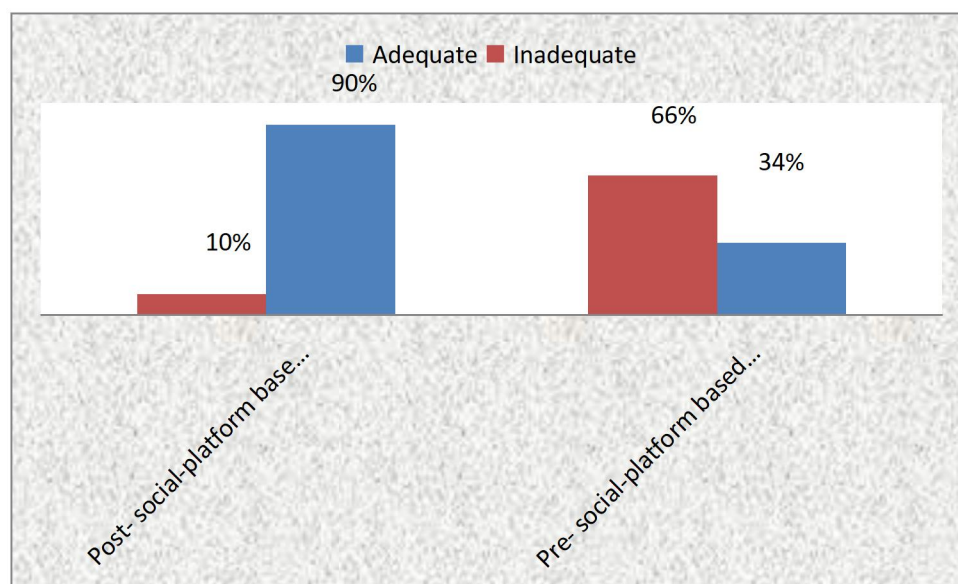


Figure (2): Total first-time mothers' Knowledge Level Distribution as regards their children's oral health pre and social-platform-based educational guidelines intervention (n= 400)

Table (3): Differences in pre and post-social-platform-based educational guidelines intervention among the studied first-time mothers regarding their children's oral health (n= 400)

Steps	Pre				Post				P -value
	Done		Not done		Done		Not done		
	No	%	No	%	No	%	No	%	
1- Putting the toothpaste on the brush	168	42.0	232	58.0	396	99	4	1	0.0001**
2- Brushing teeth and gums with the brush	120	30.0	280	70.0	376	94	24	6	0.0001**
3- Cleaning the outer teeth in a circular motion	152	38.0	248	62.0	356	89	44	11	0.0001**
4- Cleaning the inner teeth.	176	44.0	224	56.0	336	84	64	16	0.0001**
5- Cleaning the digestive surfaces in a circle motion	144	36.0	180	45	280	70	120	30	0.0001**
6- Cleaning the inner teeth from low to high	136	34.0	264	66.0	320	80	80	20	0.0001**
7- All steps done	88	22.0	312	78.0	352	88	48	12	0.0001**

**Figure (3): Total oral hygiene practices among the studied first-time mother's pre and post-social-platform-based educational guidelines intervention (n=400)****Table (4): Correlation between Total Knowledge and Practice among the Studied first-time Mothers and their demographic data (n= 400).**

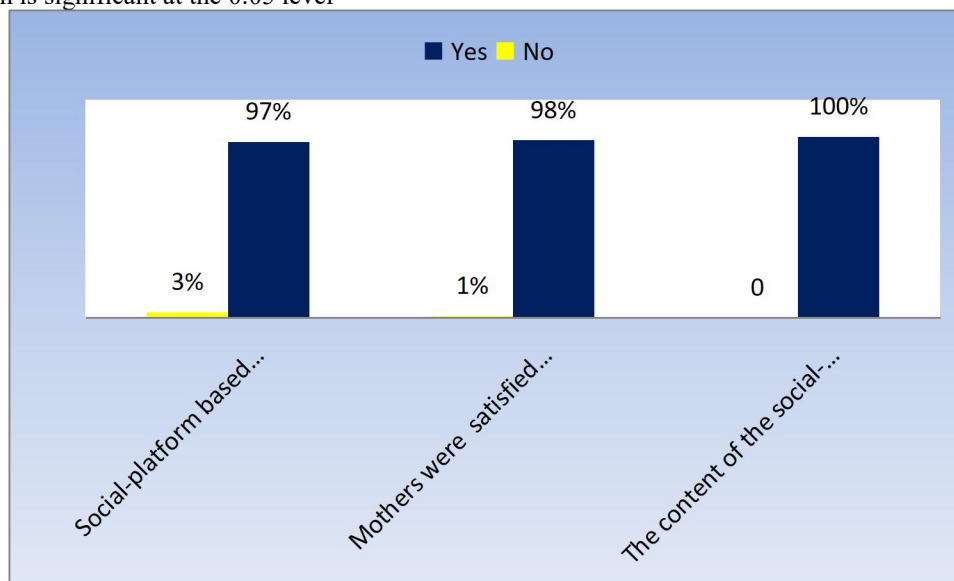
Items		Knowledge	Practice
Mothers' age	R	-.136-	-.104-
	P – value	.357	.456
Mothers' educational level	R	-.560	.024
	P – value	.0001**	.865
Mothers' occupation	R	.077	-.334
	P – value	.603	.017*
Mothers' residence	R	.046	-.292
	P – value	.743	.037*

** . Correlation is significant at the 0.01 level

Table (5): Correlation between Total Knowledge and Practice among the Studied First Time Mothers Pre and Post Social-Platform Based Educational Guidelines Intervention (n= 400).

Items			Pre-social-platform-based educational guidelines	Post-social-platform-based educational guidelines
			Knowledge	Knowledge
Pre-social-platform-based educational guidelines	Practice	R	-0.100	0.014
		P – value	0.489	0.929
Post-social-platform-based educational guidelines	Practice	R	0.165	-0.547
		P – value	0.558	0.014*

*. Correlation is significant at the 0.05 level

**Figure (4): First Time Mothers Distribution regarding their satisfaction with Social-Platform Based Educational Guidelines (n= 400).**

Discussion:

For many children, dental caries is still a serious issue. The current obstacles that keep people from receiving quality dental care exacerbate the situation. Regarding the likelihood of dental traumas, early childhood caries, and other issues, infancy, and toddlerhood are deemed key periods. Studies reveal that moms have a significant influence on the choices made about their children's medical care (**Gross & Howard, 2021**).

The results showed that first-time mothers under study were primarily between the ages of 21 and 26, with a secondary degree as their highest level of education. This could be the source of a bigger knowledge deficit because they weren't old enough and didn't know enough.

More than two-thirds of first-time mothers stated that doctors were their primary source of knowledge about oral health, according to the study's findings. The desire of moms to obtain accurate and healthful information from reliable sources is indicative of this.

The current study's findings showed that first-time mothers' awareness of their kids' oral health varied significantly, both before and after social platform-based educational guidelines were implemented. Furthermore, a highly statistically significant variation in the knowledge scores was observed. According to the study, this demonstrated the benefits of instructional principles based on social platforms.

The results of a study conducted in Kisarawe, Tanzania in 2020 by **Ray et al., (2020)**

who measured the prevalence of dental caries in children with deciduous teeth and oral health-related quality of life, support this finding. They discovered that there was an inadequate knowledge prevalence regarding oral hygiene pre-program and linked their findings to a decrease in mother or carer supervision during children's tooth brushing and a knowledge deficit among mothers regarding adequate oral hygiene practices.

Similar findings were made by **El-Nasr (2017)**, who studied children's oral health intervention programs at El-El-El-Qalyubia Governorate and discovered that research participants' overall knowledge of pre- and post-program intervention differed significantly. Similarly, **Haque et al. (2016)** investigated the impact of oral health education in schools on preventing untreated dental caries and enhancing children's knowledge, attitudes, and practices in Bangladesh. They discovered a significant difference in the majority of knowledge-related indicators between the pre- and post-program periods.

The current study's findings demonstrated that before the social platform-based educational guidelines intervention, the majority of the first-time mothers under investigation had inadequate levels of oral health awareness. According to the study, this demonstrated how crucial it is to provide social platform-based educational guiding interventions for moms to increase their level of knowledge. Furthermore, the current study's findings on mothers' oral health knowledge show that, following social platform-based educational guidance treatments, first-time moms' knowledge of every aspect of oral health improved in a highly statistically significant way. According to the researcher, this might occur as a result of the program's provision of current and comprehensible oral health information to first-time mothers.

This finding highlights the necessity for mothers of children to become more aware of oral health issues and to acquire the necessary skills to provide better oral health education to their offspring. It also emphasizes the significance of following instructional guidelines. These findings make perfect sense because the participants received the advice and their level of knowledge increased, indicating a need for practical guidance about oral health. The oral health education program was found to be an effective means of improving oral knowledge, habits, and attitude by **Farag et al. (2014)**, who studied the oral health status of preschool children in the El-Suez

governorate concerning dental care and the influence of oral health intervention program. Furthermore, the findings align with the research conducted in India by **Shenoy & Sequeira (2013)** regarding the impact of dental education programs on school-based oral health education, oral hygiene behaviors, and oral health status among students.

Similar to this, **Abu-Elenen et al. (2015)** demonstrated in their study the effects of an oral care education program on school-age children's knowledge, practice, and self-efficacy that the use of oral health programs was successful in enhancing and expanding dental health knowledge and practice. They also found that there were statistically significant improvements in the participant's oral health knowledge regarding the significance of teeth, the causes of tooth decay, and the consequences of dental caries.

Based on our research, the majority of moms in a different study were not aware of the suggested age for the first dental appointment (**Dhull et al., 2022**). This is an important result that has to be considered to increase general public awareness of oral health issues. As advised, the dentist should wait until the kid is 12 months old before scheduling the first dental appointment to properly educate the parents about their child's oral health (**American Dental Association, 2023**).

Tooth eruption and complementary feeding begin at the same time during the first year of life. This implies a period of susceptibility to infection by microbiological etiological agents. These unsatisfactory behaviors are reportedly practiced from the late puerperal phase (until 42 days after childbirth), which is concerning. According to **Chaffee et al. (2019)**, there is a positive correlation between the introduction of sugary foods and beverages into an infant's diet before six months of age and the development of severe early childhood caries. Additionally, there is a link between breastfeeding for less than six months of life and an increased risk of caries in early childhood (**Tham et al., 2019**). However, low levels of oral health knowledge were discovered in other investigations (**Thomas et al., 2018; Chala et al., 2018**).

In terms of dental hygiene habits, the present findings demonstrated a statistically significant distinction between the oral hygiene practices of first-time mothers before and following the implementation of the social platform-based educational guidelines intervention. The

aforementioned discovery highlights the need for first-time mothers to increase their level of awareness and comprehend the significance of maintaining proper oral hygiene habits to shield their children from potential dental cavities.

This finding is consistent with research conducted in India by **Shenoy et al. (2017)**, who discovered that school-based dental education guidelines were effective in raising oral health literacy, oral hygiene habits, gingival health, and oral health status among school-age children. Additionally, a study by **Macpherson et al. (2017)** in Scotland indicated that participants in the program improved their oral habits and attitudes. These findings are consistent with each other.

According to the current study, modifications in the application of educational guidelines before and after they were implemented were statistically significant. Applying dental hygiene habits in a variety of appealing ways could be the cause of this. **Haque et al. (2016)** discovered striking variations in nearly every indication of knowledge variables before and after the instructional guidelines were put into place, and they discovered the same type of outcomes.

Contrary to popular belief, a sizable portion of the infants had previously been exposed to sugar-filled foods and beverages. According to **Chaffee et al. (2019)**, early childhood caries is linked to exposure to certain meals and drinks during the first year of life. Extended breastfeeding beyond the age of 12 months has been associated with an increased risk of early childhood caries; however, other characteristics associated with prolonged breastfeeding, such as nocturnal feeding and poor oral hygiene practices, may also contribute to this association (**Tham et al., 2019**). Other studies also found that moms were not providing enough oral health care to their children (**Dhull et al., 2022**).

The first-time mothers in the study showed a somewhat negative correlation between their knowledge and educational attainment, according to the current study. Mothers' residency and practice levels were also found to be moderately negatively correlated.

According to the current study, mothers without jobs reported a higher percentage of appropriate dental hygiene and wellness practices. This result is in conflict with findings from other related research conducted by **Ashkanani & Al-Sane**

(**2019**) and **Szatko et al. (2023)**. To elucidate this conclusion, more research is advised. Mothers' educational level did not substantially correlate with their understanding of oral hygiene and health in the current study. Nonetheless, it was substantially correlated to oral health and hygiene habits, as mothers with moderate levels of education reported more sufficient oral hygiene practices than mothers with lower or higher levels of education. The results of this study do not support the findings of other studies (**Szatko et al., 2023; Chan et al., 2022**). This could account for the differences in cultures, values, and beliefs between rural and urban areas as well as the higher levels of stress experienced by mothers in these areas due to a lack of access to medical care, social media misinformation, and transportation challenges when their children exhibit symptoms of illness.

This study found a moderate link between first-time mothers' practices and knowledge after social media platform-based educational guidelines were implemented. From the perspective of the researchers, it is shown that insufficient information results in subpar practices. Nonetheless, following the implementation of social media platform-based educational guidelines, first-time mothers' knowledge improved, which is linked to best practices and demonstrated the effectiveness of doing so, this demonstrated the significance of enhancing mothers' knowledge and self-care routines to support their children's continued development, make learning easier for them, and enable them to apply and acquire high-quality information. The study "Effectiveness of a Preventive Oral Health Programme in Preschool Children" by **Caroline et al. (2018)** resolved these findings, stating that the preventive oral health program has positive effects in the reduction of dental problems, which would be related to the improvement in oral hygiene habits.

This outcome supports the research conducted by **Heaton et al. (2017)**, which revealed that information alone might not be sufficient to encourage healthy dental habits. Additionally, while planning and implementing interventions to prevent and enhance children's oral health, all relevant elements should be taken into account to effectively reach the target audience and ensure that oral health knowledge and habits are comprehensive. It would also be crucial if all medical practitioners who treat mother and child units followed the same set of guidelines (**Wagner et al., 2019**).

According to the current study, every first-time mother who participated in the research indicated that the social media-based educational guidelines provided sufficient information. Additionally, the majority of the mothers expressed satisfaction with the guidelines and claimed that the social media-based instructional standards had improved their knowledge and practices. This outcome illustrates the value of putting social media platform-based educational recommendations into practice, as they satisfied the moms' demands and gave them enough information to understand oral health. also demonstrated that the goal of the study was achieved.

Conclusion:

Depending on the results of the current study, the study concluded that the results support the research hypothesis that implementing social-platform-based educational guidelines has a positive effect on improving first-time mothers' knowledge and practice regarding their children's oral health. Between the pre- and post-social platform-based educational guidelines first-time mothers' knowledge and practices about their children's oral health showed a highly statistically significant correlation.

Recommendations:

The following recommendations were suggested based on the results of the present study:

1. Providing new mothers with a well-thought-out health education program to enhance their understanding and oral health practices for their children.
2. To attain this improvement and lower the rates of early childhood caries, it is crucial to reinforce potential educational initiatives, particularly in the early stages of motherhood.
3. All mothers and other carers of young children in clinics and schools should receive printed brochures and booklets that contain adequate information regarding dental caries and oral health.
4. To generalize on their significance in the early detection of dental issues and the adoption of healthy dietary practices to avoid dental caries, more studies including a larger sample of women are needed.

References:

- Abu-Elenen, N., Abdella N., & Elkazaz R. (2015): Effect of an oral care educational program on the knowledge, practice, and self-efficacy among school-age children. *Int J Res Stud Biosci* 3:53–61.
- Alyahya, L. (2019): Parental knowledge and practices regarding their children's oral health in Kuwait. *Eur J Paediatr Dent*; 17(4): 267-73.
- American Academy on Pediatric Dentistry Clinical Affairs Committee-Infant Oral Health Subcommittee; American Academy on Pediatric Dentistry Council on Clinical Affairs. (2023): Guideline on infant oral health care. *Pediatr Dent*; 30(Suppl):90-93.ADD recent guidelines.
- American Dental Association. (2023): Statement on Early Childhood Caries;1–4.is prospectively associated with added sugar intake in childhood. *Br J Nutr* 2016;115(11):2067-74. doi: <https://doi.org/10.1017/S0007114516001367>
- Ashkanani, F., & Al-Sane, M. (2019): Knowledge, attitudes, and practices of caregivers about the oral health of preschool children. *Med Princ Pract.*, 22:167–172
- Bali, R., Mathur, V., Talwar, P., Chanana, H. (2022): National oral health survey and fluoride mapping India. New Delhi: Dental Council of India; 132.
- Berkowitz, R. (2023): Causes, treatment, and prevention of early childhood caries: A microbiologic perspective. *J Can Dent Assoc*;69:304-307.
- Caroline, Z., Stefanie, P., Marilia, J.B., & Maria, S. (2018): Effectiveness of a Preventive Oral Health Program in Preschool Children, available at: <http://dx.doi.org/10.20396/bjos.v17i0.8652647>.
- Chaffee, B., Feldens, C., Rodrigues, P., & Vítolo M. (2019): Feeding practices in infancy are associated with caries incidence in early childhood. *Community Dent Oral Epidemiol*; 43(4):338-48. doi: <https://doi.org/10.1111/cdoe.12158>
- Chaitra, T., Wagh, S., & Sultan, S, Chaudhary S, Manuja N, Sinha AA. (2021): Knowledge, attitude, and practice of oral health and adverse pregnancy outcomes among rural and urban pregnant women of Moradabad, Uttar Pradesh, India. *J*

Interdiscip Dentistry; 8:5-12.

- Chala, S., Houzmali, S., Abouqal, R., & Abdallaoui, F. (2018): Knowledge, attitudes and self-reported practices toward children oral health among mothers attending maternal and child's units, Salé, Morocco. *BMC Public Health*; 18(1):2-9. doi: <https://doi.org/10.1186/s12889-018-5542-2>
- Chala, S., Houzmali, S., Abouqal, R., & Abdallaoui, F. (2018): Knowledge, attitudes and self-reported practices toward children oral health among mothers attending maternal and child's units, Salé, Morocco. *BMC Public Health*; 18(1):2-9. doi: <https://doi.org/10.1186/s12889-018-5542-2>
- Chan, S., Tsai, J., & King, N. (2022): Feeding and oral hygiene habits of preschool children in Hong Kong and their caregivers' dental knowledge and attitudes. *Int J Paediatr Dent.*, 12: 322–331.
- Consolação Soares, M., Ramos-Jorge, M., de Alencar, B., Marques, L., Pereira, L., Ramos-Jorge, J. (2019): Factors associated with masticatory performance among preschool children. *Clin Oral Investig*; 21(1):159-66. doi: <https://doi.org/10.1007/s00784-016-1768-5>.
- Dhull, K., Dutta, B., Devraj, I., & Samir, P. (2022): Knowledge, Attitude, and Practice of Mothers towards Infant Oral Healthcare. *Int J Clin Pediatr Dent*;11(5):435-9. doi: <https://doi.org/10.5005/jp-journals-10005-1553>
- El-Nasr, A. (2017): Oral health intervention program among primary school children at El-Qalyubia Governorate, *Egyptian nursing journal*, Volume: 14 | Issue: 2 | Page: 100-108.
- Farag, S., Rashed, A., & Fouad, W. (2013): Oral Health Status of Preschool Children in El-Suez Governorate about Dental Care Given and the Influence of Oral Health Intervention Program. Cairo: Faculty of Oral and Dental Medicine, Cairo University.
- Gross, G., & Howard, M. (2021): Mothers' decision-making processes regarding health care for their children. *Public Health Nurs*;18:157-68.
- Haque, S., Rahman, M., Itsuko, K., Mutahara, M., Tsutsumi, A., Islam, J., Mostofa, G., & Kayako, S. (2016): Effect of school-based oral health education in preventing untreated dental caries and increasing knowledge, attitude, and practices among adolescents in Bangladesh. *Bio-Med Central Oral Health* 16:44.
- Heaton, B., Crawford, A., Garcia, R., Henshaw, M., Riedy, C., & Barker, J. (2017): Oral health beliefs, knowledge, and behaviors in Northern California American Indian and Alaska Native mothers regarding early childhood caries. *J Public Health Dent*; 77(4):350-9. doi: <https://doi.org/10.1111/jphd.12217>
- Khanh LN, Ivey SL, Sokal-gutierrez K, Barkan H, Ngo KM. Early Childhood Caries, Mouth Pain, and Nutritional Threats in Vietnam. *Am J Public Health* 2020;105(12):2510-18. doi: <https://doi.org/10.2105/AJPH.2015.302798>
- Lee Ventola, C. (2014): Social Media and Health Care Professionals: Benefits, Risks, and Best Practices ; *P T.* 2014 Jul; 39(7): 491-499, 520.
- Macpherson, L. M., Anopa, Y., & McMahon, A. D. (2017): National Supervised Toothbrushing Program and Dental Decay in Scotland. *J DENT RE*; 92: 109-113.
- Okada, M., Kawamura, M., & Kaihara, Y. (2022): Influence of parents' oral health behavior on the oral health status of their school children: An exploratory study employing a causal modeling technique. *Int J Paediatr Dent*; 12(2): 101-8. [<http://dx.doi.org/10.1046/j.1365-263X.2002.00338.x>] [PMID: 11966 888]
- Pentecost M, & Ross F. (2019): The First Thousand Days: Motherhood, Scientific Knowledge, and Local Histories. *Med Anthropol Cross Cult Stud Heal Illn.*;38(8):747-61. doi: <https://doi.org/10.1159/000365017>.
- Ray, M., Tumaini, S., & Lorna, C. (2020): Metrics Prevalence of dental caries in deciduous teeth and oral health-related quality of life among preschool children aged 4–6 years in Kisarawe, Tanzania, *BMC Oral Health* volume 20.
- Saldunaite, K., Bendoraitiene, E.A., & Slabšinskiene, E. (2019): The role of parental education and socioeconomic status in dental caries prevention among Lithuanian children. *Medicine (Kaunas)*; 50 (3):156–161. 10.1016/j.medici.07.003.
- Shenoy, R., & Sequeira, P. (2013): Effectiveness of a school dental education program in improving oral health knowledge and oral hygiene practices and status of 12- to 13- year-old school children. *Indian J*

- Dent Res* [cited Oct 25]; 21:253-9.
- Shenoy, R., & Sequeira, P. (2019): Effectiveness of a school dental education program in improving oral health knowledge and oral hygiene practices and status of 12- to 13- year-old school children. *Indian J Dent Res* [cited Oct 25]; 21:253-9
 - Shenoy, R., Krishnan, V., & Sequeira, S. (2017): Effectiveness of a school dental education program in improving oral health knowledge and oral hygiene practices and status of school children. *Indian J Dent Res*; 21:253-9.
 - Szatko, F., Wierzbicka, M., & Dybizbanska, E. (2023): Oral health of Polish three-year-olds and mothers' oral health-related knowledge. *Community Dent Health*, 21: 175–180
 - Tham, R., Bowatte, G., Dharmage, S., Tan, D., Lau, M., & Dai, X. (2019): Breastfeeding and the risk of dental caries: A systematic review and meta-analysis. *Acta Paediatr*; 104:62-84. doi: <https://doi.org/10.1111/apa.13118>
 - Thomas, A., Jacob, A., Kunhambu, D., Shetty, P., & Shetty, S. (2019): Evaluation of the knowledge and attitude of expectant mothers about infant oral health and their oral hygiene practices. *J Int Soc Prev Community Dent*; 5(5):400. doi: <https://doi.org/10.4103/2231-0762.163405>
 - Tyagi, U., Menon, I., Tomar, D., Singh, A., & Goyal, J. (2021): Association between maternal oral health literacy and their preschoolers' oral health outcomes in Muradnagar -A cross-sectional study. *J Dent Spec*;5(2):98-102. doi: <https://doi.org/10.18231/2393-9834.2017.0024>
 - Vanagas, G., Milasauskiene, Z., Grabauskas, V., & Mickeviciene, A. (2019): Associations between parental skills and their attitudes toward the importance of developing good oral hygiene skills in their children. *Medicina (Kaunas)*; 45(9): 718-23. [<http://dx.doi.org/10.3390/medicina45090094>] [PMID: 19834309]
 - Wagner, Y., & Heinrich-Weltzien, R. (2019): Midwives' oral health recommendations for pregnant women, infants, and young children: Results of a nationwide survey in Germany. *BMC Oral Health*;16(1):1-9. doi: <https://doi.org/10.1186/s12903-016-0192-1>