Alqalam Journal of Medical and Applied Sciences. 2025;8(3):1296-1305
https://doi.org/10.54361/ajmas.258306

Original article

Oral Health Promotion Implications of the Knowledge, Attitudes, and Behavior of Parents and Caregivers of Preschoolers in Tobruk City and Its Suburban Areas.

Hend El-Allaky[1]*, Zinelabedin Mohamed[2], Donia Salem[3], Khawla Haroun[3], Monia Abdullah[3], Rahma Elhammali[3], Zainab Moftah[3]

[1]Faculty of Dentistry, Tobruk University, Tobruk, Libya
[2]Faculty of Medicine, Tobruk University, Tobruk, Libya
[3]Faculty of Dentistry, Darelsalam University, Tobruk, Libya
Corresponding email. Hend.elallaky@tu.edu.ly

Abstract
This paper aimed to describe the oral health knowledge, attitudes, and behavior of parents and caregivers of preschool children in Tobruk city and its suburbs to enhance oral health promotion. In this cross-sectional study, 299 participants were selected at random from among Libyan citizens to provide a community overview. The overview was adapted for both paper and Google Forms® based on previous inquiries regarding surveys. The results show that about 35 % of parents disagreed with starting to brush their children's teeth when the first tooth appears, whereas more than half were unsure about the proper timing for the first dental visit, suggesting a significant knowledge gap that may delay early intervention and preventive care. In conclusion, a considerable level of unawareness and negative attitudes of parents about their children's oral health status is concerning the need for enhanced public education and outreach efforts.
Keywords. Caries, Children, Attitude, Parents.

Introduction

An important element of children's general health and well-being is their oral health. Poor dental hygiene may affect childhood socialization, learning, language, and eating skills [1,2]. Other consequences are widespread vandalism, pain, and loss of teeth. Preventing dental caries, the most common chronic disease in children, and promoting healthy oral hygiene practices from a young age is essential [3]. Dental caries is caused by the interaction of sugars in food and drink with bacteria in the tooth pulp, producing acid that erodes the tooth enamel. Dental caries can be prevented by using fluoride toothpaste regularly, drinking fluoridated water, applying fluoride varnish or dental sealants to your teeth, and going to the dentist regularly [4–7]. Untreated dental problems can even lead to children eating less, developing more slowly, failing in school, and quality of life [8,9].

The development of children's oral health habits and behaviors is strongly influenced by their parents [10,11]. Previous studies have shown that parental and family environment have a significant impact on children's dietary preferences, energy intake, and eating habits [12–14]. Parents can also control their children's oral health behaviours, such as sugar intake and oral hygiene habits, by setting rules, educating them, rewarding them, and providing incentives [15]. Many parents make the mistake of thinking that if their child's teeth don't hurt, then there's no problem with oral hygiene [16–18]. Due to this misunderstanding and the rapid progression of dental problems, dental treatment is often not sought until the child requires more invasive dental treatments such as root canals and extractions. Most parents base their decision on their children's dental care on their own beliefs and practices on oral health. Some parents mistakenly diagnose caries in their children as tooth stains that can be removed, delaying preventive treatment until the child complains of pain. Increasing parents' awareness of the value of primary dental care is therefore crucial to improving oral health among their children.

To our knowledge, no attempt has been made to look into how the oral health prompting strategy, which is specifically designed for parents of preschool-aged children, affects parents' oral health knowledge and the dental issues that their kids face. The purpose of our prospective observational study was to close this research gap by assessing the attitudes of parents of preschool-aged children toward dental health issues, oral health knowledge, and dental health issues in Tobruk City and its surrounding rural areas

Methods

Study design and data collection

The cross-sectional study included a random sample of 299 Libyan parents from the city of Tobruk and its surrounding rural areas. All parents were asked for their consent, and no incentives were given for participation. Based on previous research questionnaires, the survey has been developed in both paper and Google Forms® format. The questionnaire was simple and easy to understand and fill out for laypeople.

Based on a survey previously carried out in the United Kingdom, the 22-item Arabic-language questionnaire asked demographic data, parents' knowledge and attitudes about oral health in young children, and their views on oral health [19,20].

Received*: 27-04-2025 -* ***Accepted****: 22-06-2025 -* ***Published****: 03-07-2025*

Statistical analysis

Various statistical techniques have been used to analyse the data collected and to address the research questions. Descriptive statistics, including frequency tables, percentages, and graphical representations, have been used to summarise and illustrate the data characteristics. For the investigation of the relationship between nominal variables, correlation analysis was performed using both the K-squared and Chi-square goodness of fit tests. These methods provided insight into the strength and importance of the associations between the categorical variables examined.

Results

The demographic analysis of the sample (N = 299) in Table 1 indicates a predominantly well-educated and middle-aged respondent population. A majority of participants (62.5%) held an undergraduate degree, while an additional 8.7% had completed postgraduate education. Only 5.0% of respondents had a primary-level education, suggesting high levels of educational attainment in the study group.

In terms of age, the largest proportion of respondents (55.2%) were within the 30–44 years age range, which is typically associated with active parenting. An additional 26.8% were aged 14–29, likely including young parents or caregivers. Fewer respondents were aged 45–59 (16.1%), and only a small fraction (2.0%) was aged 60 years and above. These findings highlight a respondent profile that is likely to be engaged in active parenting and to possess a moderate to high level of health literacy, factors that can significantly influence attitudes and behaviors related to children's oral health.

Table 1. Distribution of Respondents by Education Level and Age Group (N = 299)

Variable	Category	Frequency (n)	Percentage (%)
Education Level	Primary	15	5.0
	Middle School	37	12.4
	High School	34	11.4
	Undergraduate	187	62.5
	Postgraduate	26	8.7
Age Group	14–29 years	80	26.8
	30–44 years	165	55.2
	45–59 years	48	16.1
	60+ years	6	2.0

The data on respondents' residence indicates that the vast majority, 82.9% (248 out of 299), reside within the city of Tobruk, while only 17.1% (51 respondents) live in the surrounding suburban areas. This urban concentration suggests that most participants likely have better access to dental care services, health education programs, and awareness campaigns that are typically more available in city centers. Conversely, the smaller representation from the suburbs might reflect limited access to such resources, which could influence levels of awareness and practices related to children's oral and dental health. The urban dominance in the sample may also shape the overall findings of the study, potentially highlighting trends and challenges more common in urban settings.

Table 2. Residence of the Respondents

What is your place of residence?	Frequency	Percent
Inside Tobruk	248	82.9%
In the suburbs of Tobruk	51	17.15

The responses regarding early tooth brushing reveal a mixed level of awareness among parents. While 45.2% of respondents (135 out of 299) agree that brushing should begin when the child's first tooth appears—a practice recommended by dental health professionals—there remains a significant portion who either disagree (35.1%) or are unsure (19.7%). The fact that over half of the respondents (19.7+35.1= 54.8%) either lack awareness or hold misconceptions about the appropriate timing for initiating oral hygiene suggests a gap in knowledge that could affect the development of healthy dental habits in children. This finding underscores the need for increased public health education and targeted awareness campaigns to inform parents about the importance of starting oral care early to prevent tooth decay and instill lifelong dental hygiene practices.

The responses to the question about the relationship between oral bacteria and tooth decay indicate a high level of awareness among parents. An overwhelming 92.0% (275 out of 299) agree that germs in the mouth can cause tooth decay, reflecting strong general knowledge of a key concept in oral health. Only a small minority either disagreed (4.7%) or were unsure (3.3%). This widespread understanding is a positive indicator, as it suggests that most parents recognize the role of bacterial infection in the development of cavities—an essential foundation for adopting preventive behaviors such as regular brushing, limiting sugary foods, and promoting routine dental visits. However, efforts should still be made to reach the small

Received*: 27-04-2025 -* ***Accepted****: 22-06-2025 -* ***Published****: 03-07-2025*

group that lacks this awareness, as even minor knowledge gaps can influence the overall effectiveness of oral health practices within families.

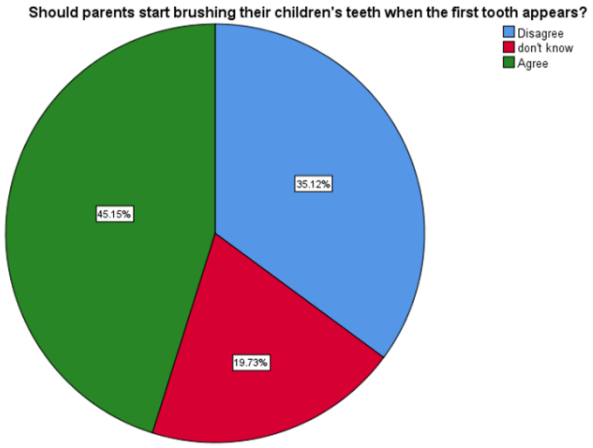

Figure 1. Early Tooth Brushing

The findings related to bedtime feeding practices show that a significant majority of parents—70.9% (212 out of 299)—are aware that putting a child to bed with a bottle of juice can lead to tooth decay. This suggests that many parents understand the risks associated with prolonged exposure to sugars during sleep, when saliva production decreases and the mouth is more vulnerable to bacterial activity. However, a notable portion of respondents either disagreed (15.7%) or expressed uncertainty (13.4%) regarding this risk. This combined 29.1% reflects a meaningful knowledge gap that could contribute to harmful bedtime routines, potentially increasing the incidence of early childhood caries. These results highlight the need for targeted educational initiatives to reinforce the dangers of nighttime juice feeding and promote healthier alternatives, such as water, especially before bedtime.

Table 3. Bedtime Juice Bottle Risks

Can putting a child to bed with a bottle of juice cause tooth decay?	**Frequency**	**Percent**
Disagree	47	15.7%
don't know	40	13.4%
Agree	212	70.9%
Total	299	100%

The responses regarding fluoride's role in preventing tooth decay reveal a moderate level of awareness among parents, with 55.5% (166 out of 299) agreeing that fluoride is effective in preventing cavities. While this majority reflects a fair understanding of fluoride's protective benefits, a substantial portion of the respondents either disagreed (11.7%) or were uncertain (32.8%). The combined 44.5% of participants who either lack knowledge or hold incorrect beliefs about fluoride highlights an important area for public health education. Given that fluoride is a cornerstone of modern dental care—commonly used in toothpaste, mouth rinses, and community water supplies to reduce decay—this knowledge gap could limit the adoption of one of the most effective and accessible preventive measures. Raising awareness about the safety and benefits of fluoride could significantly enhance parents' ability to protect their children's oral health.

Table 4. Tooth Decay Prevention

Does fluoride help prevent tooth decay?	Frequency	Percent
Disagree	35	11.7%
don't know	98	32.8%
Agree	166	55.5%
Total	299	100%

The data on perceptions of hereditary dental risks shows that half of the respondents (50.2%) believe that tooth decay can run in families, indicating a fair awareness of the genetic and familial factors that may influence oral health. However, a considerable 36.8% (110 respondents) disagreed with this notion, and 13.0% were unsure. This mixed understanding suggests that while many parents acknowledge a potential hereditary link, a significant portion may underestimate or misunderstand the role genetics can play in dental health.

Received: *27-04-2025* - ***Accepted***: *22-06-2025* - ***Published***: *03-07-2025*

https://doi.org/10.54361/ajmas.258306

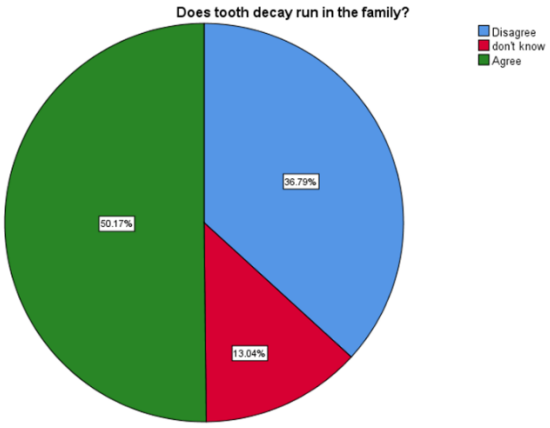

Figure 2. Hereditary Dental Risks

The data on the timing of a child's first dental checkup reveals a significant lack of awareness regarding the recommended timing for an initial dental visit. Only 16.1% (48 out of 299) of respondents correctly indicated that the first visit should occur when the first tooth appears, which aligns with expert recommendations for early dental care. A smaller portion, 14.4% (43 respondents), believe that the first visit should be made when all teeth have appeared, while 7.4% (22 respondents) suggested the visit should happen when the first permanent tooth emerges.

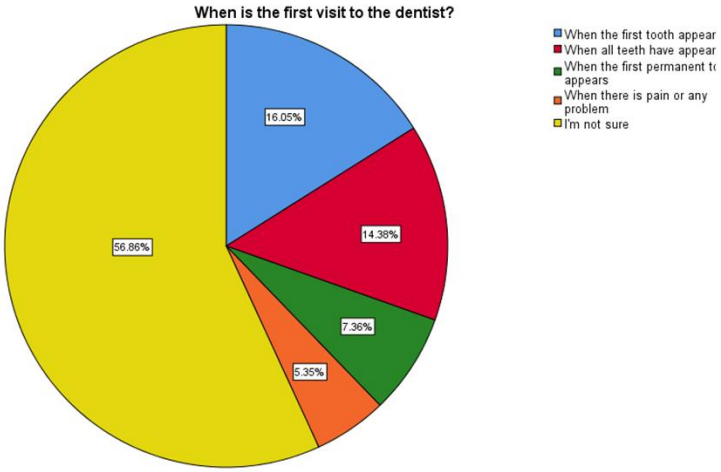

Figure 3. First Dental Checkup

A concerning 5.4% (16 respondents) reported that they would take their child to the dentist only when there is pain or a dental problem, indicating a reactive rather than preventive approach to dental health. Furthermore, a large majority (56.9%) were unsure about the proper timing for the first dental visit, suggesting a significant knowledge gap that may delay early intervention and preventive care.

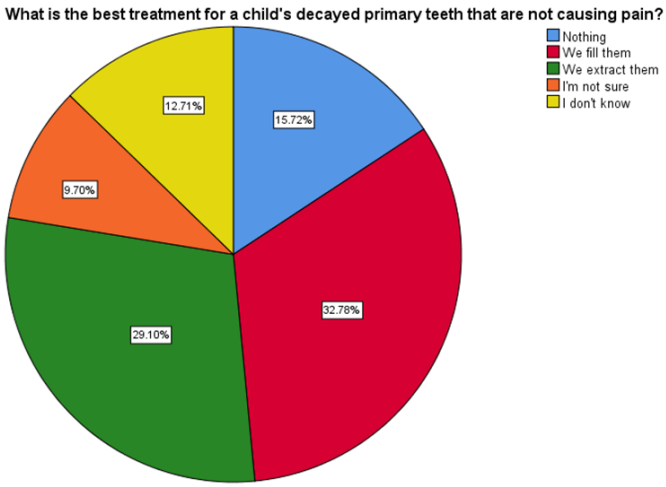

Figure 4, Primary Tooth Treatment

Received*: 27-04-2025 -* ***Accepted****: 22-06-2025 -* ***Published****: 03-07-2025*

The responses regarding the best treatment for a child's decayed primary teeth that are not causing pain show varying levels of awareness. The most common response, chosen by 32.8% (98 out of 299), is that these teeth should be filled, reflecting an understanding of the importance of preserving primary teeth when possible. However, 29.1% (87 respondents) chose extraction as the solution, which may reflect misconceptions about the necessity of saving primary teeth, even when they are not causing pain.

A notable portion of respondents (15.7%) selected "nothing," which suggests a lack of awareness about the potential risks of leaving decayed teeth untreated, even if they are asymptomatic. Additionally, 22.4% (29 respondents marked "I'm not sure" or "I don't know"), further highlighting a significant knowledge gap regarding appropriate dental care for children's primary teeth.

The responses regarding the oral health status of children reveal a generally positive outlook, with a large portion of parents rating their children's oral health as "very good" (36.8%, 110 out of 299) or "excellent" (19.4%, 58 respondents). These ratings suggest that many parents perceive their children's oral health to be in a strong condition. Additionally, 21.4% (64 respondents) described their children's oral health as "good," further contributing to an overall favorable assessment.

However, a smaller percentage of parents reported their children's oral health as "average" (13.4%, 40 respondents), "poor" (4%, 12 respondents), or expressed uncertainty with "I don't know" (5%, 15 respondents). The relatively low numbers in the poorer health categories might indicate either an underreporting of dental problems or a lack of awareness about less visible dental issues.

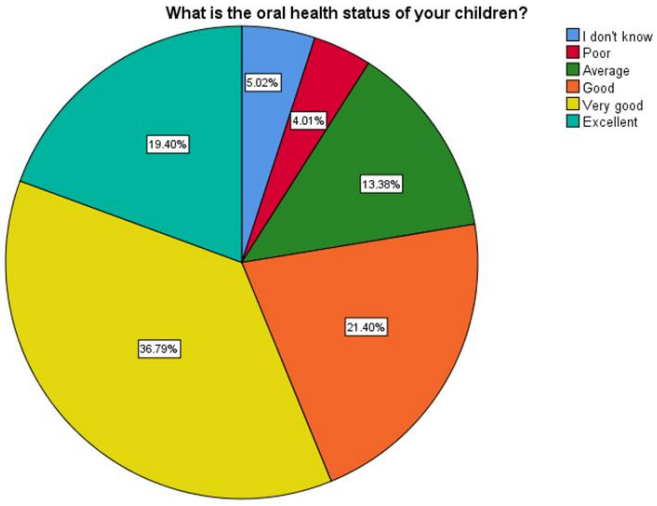

Figure 5. Children's Dental Health

Table (5) section summarizes parental involvement and practices in maintaining their children's oral hygiene, focusing on toothbrushing routines, supervision, and product selection.

A significant majority of parents (62.2%) actively assist their children with toothbrushing, with nearly half (49.2%) ensuring brushing occurs twice daily, aligning with recommended guidelines. This indicates a good level of engagement in establishing consistent oral hygiene habits. Most parents (53.5%) adopt a standing posture next to their child during supervision, which is a common method for overseeing brushing.

Regarding product choices, a high percentage of parents (53.2%) correctly select small-sized toothbrushes, which are generally appropriate for children. There is also a reasonable understanding of the correct toothpaste quantity, with various responses indicating awareness of appropriate amounts (e.g., full brush head, half brush head, pea-sized amount). However, a notable gap exists in parents' knowledge concerning the ingredients of their children's toothpaste, particularly regarding fluoride content, as 37.8% reported being unsure. Furthermore, a substantial majority of parents (69.2%) reported not using any additional fluoride products beyond toothpaste. This highlights a potential area for educational initiatives to inform parents about the benefits and availability of supplementary fluoride for enhanced caries prevention.

Table 5. Parental Oral Hygiene Practices for Children

Characteristic	Sub-category	Frequency (n)	Percentage (%)
Parental Toothbrushing Aid	Yes	186	62.2%
	Sometimes	70	23.4%
	No	43	14.4%
Daily Brushing Routine	Once a day	73	24.4%
	Twice a day	147	49.2%
	More than twice a day	30	10.0%
	Not regularly	49	16.4%
	Standing next to him	160	53.5%

Received*: 27-04-2025 -* ***Accepted****: 22-06-2025 -* ***Published****: 03-07-2025*

Toothbrushing Supervision Posture	Standing behind him	102	34.1%
	Child brushes alone	29	9.7%
	Other	8	2.7%
Toothbrush Size Selection	Small	159	53.2%
	Medium	117	39.1%
	Large	9	3.0%
	Other	14	4.7%
Toothpaste Quantity	Entire brush head	122	40.8%
	Half of brush head	85	28.4%
	Pea-sized amount	77	25.8%
	Other	15	5.0%
Toothpaste Ingredients	Contains fluoride	120	40.1%
	Does not contain fluoride	60	20.1%
	I am not sure	113	37.8%
	Other	6	2.0%
Additional Fluoride Products	Fluoride mouthwash	54	18.1%
	Fluoride gel	31	10.4%
	No other fluoride products	207	69.2%
	Other	7	2.3%

Figure 6 highlights the dietary habits of the children, which are crucial for oral health. A significant portion of parents (34.4%) extended breastfeeding beyond 12 months, indicating a preference for prolonged natural feeding. Encouragingly, most parents (65.2%) do not use sweetened bottles at night, reducing a major risk factor for early childhood caries.

However, the frequency of consuming sweetened drinks and foods remains a concern, with a notable percentage of children consuming them daily (35.5% for drinks, 33.1% for foods) or even multiple times a day (18.1% for drinks, 22.4% for foods). While fruit consumption is also relatively high, with 40.5% consuming it once daily, the frequent intake of sugary items points to a need for dietary guidance to mitigate the risk of dental issues.

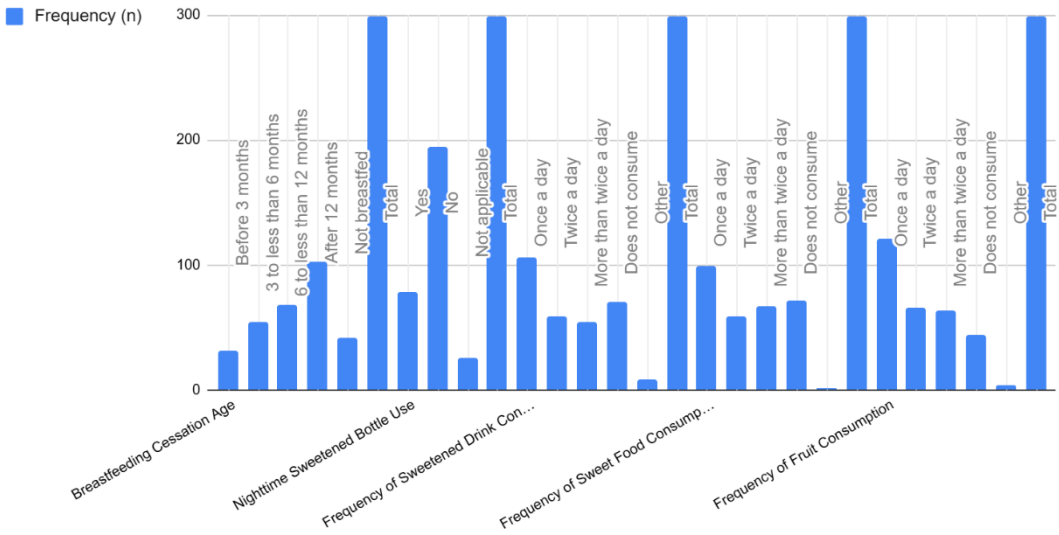

Figure 6. Dietary Habits and Their Frequency

The data on dental visit frequency reveals that a large proportion of respondents (68.9%, 206 out of 299) visit the dentist only when there is pain. This suggests that many individuals may not prioritize regular dental checkups unless they experience discomfort, which could lead to untreated issues developing into more severe problems over time.

A smaller portion of respondents, 10.4% (31 respondents), visit the dentist every 6 months, which aligns with dental health guidelines for regular preventative care. Additionally, 7.7% (23 respondents) visit the dentist once a year, which is another reasonable frequency for maintaining oral health.

Only 8.4% (25 respondents) reported never visiting the dentist, which is concerning as regular dental checkups are crucial for early detection of potential issues, even in the absence of pain. The "other" category (4.7%, 14 respondents) likely represents varied or irregular dental visit habits that could benefit from further clarification.

Received: *27-04-2025* - ***Accepted***: *22-06-2025* - ***Published***: *03-07-2025*

https://doi.org/10.54361/ajmas.258306

Table 6. Dental Visit Frequency

How often do you visit the dentist?	Frequency	Percent
I never visit	25	8.4%
Only when there is pain	206	68.9%
Every 6 months	31	10.4%
Once a year	23	7.7%
Other	14	4.7%

Table 7 summarizes parents' self-assessment of their oral health, their perceived ease of access to dental care, and their demand for dental information.

A significant majority of respondents perceive their own oral health positively, with 41.1% rating it as "very good" and 35.5% as "good". Only a small percentage (10%) consider their oral health to be "poor".

Regarding access to dental care, opinions are split: nearly half (49.8%) report no difficulty in accessing dental services, while a substantial 39.1% find it challenging. This highlights a potential barrier to consistent care for a considerable portion of the population.

Finally, there is a strong and evident demand for more information on dental care and materials used by professionals. A large majority of parents (48.8%) "always" need such information, and another 41.8% "sometimes" need it. This overwhelming interest suggests a clear opportunity for educational interventions to empower parents with better knowledge for managing their and their children's oral health.

Table 7. Perceptions, Access, and Information Needs in Dental Care

Characteristic	Category	Frequency (n)	Percentage (%)
Dental Wellness Assessment	Excellent	37	12.4%
	Very good	123	41.1%
	Good	106	35.5%
	Poor	30	10%
	Other	3	1%
Dental Care Accessibility	Yes	117	39.1%
	No	149	49.8%
	Other	33	11%
Dental Care Resource Needs	Always	146	48.8%
	Sometimes	125	41.8%
	Never	20	6.7%
	Other	8	2.7%

The data on parental demands frequency reveals that a large portion of respondents feel that their child demands a significant amount of their attention. The largest group, 36.1% (108 out of 299), reported that their child demands a lot "sometimes," indicating that while it may not be constant, it is a frequent occurrence. A notable portion, 28.8% (86 respondents), feel that their child demands a lot "often," suggesting that for nearly one-third of respondents, this is a recurring issue that may influence their ability to manage time for other activities, including oral health practices. Additionally, 24.1% (72 respondents) reported that their child demands a lot "always," highlighting a continuous challenge in balancing parental responsibilities. A smaller group, 7.7% (23 respondents), indicated that their child "never" demands a lot from them, which may suggest a more independent child or less overwhelming parental duties. Finally, 3.35% (10 respondents) selected "other," which could reflect varying experiences or additional circumstances that were not fully captured by the other options.

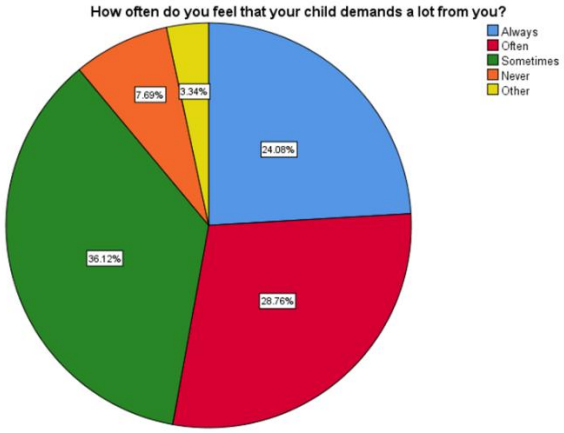

Figure 8. Parental Demands Frequency

Received: *27-04-2025* - ***Accepted***: *22-06-2025* - ***Published***: *03-07-2025*

Discussion

The sample's preschool-aged parents and caregivers knew a fair amount about oral health. Confusion surrounding dental attendance, supervised brushing, fluoride use, and sugar intake, however, suggests that these factors require special attention in oral health promotion programs meant to improve early childhood oral health, even though attitudes toward preventive oral healthcare are generally positive. This may be explained through the majority of participants held an undergraduate degree (Table 1). More than half of them were in the 30- to 44-year age range. This group likely represents parents with young or school-aged children, which aligns well with the focus of the study on children's oral and dental health.

According to the data on respondents' residences (Table 2), only 17.1 % live in the nearby suburban areas, whereas the great majority, 82.9 % reside within the city of Tobruk. Given the urban concentration, it is probable that the majority of participants have greater access to dental care services, health education initiatives, and awareness campaigns—all of which are generally more readily available in urban areas. On the other hand, the lower representation from the suburbs may be due to a lack of access to these resources, which may have an impact on practices and awareness regarding the oral and dental health of children. The sample's preponderance of urban areas may also influence the study's overall conclusions by pointing out patterns and difficulties that are more prevalent in urban environments.

In this study, Parents are highly aware of the connection between oral bacteria and tooth decay, according to the answers to the questions in (Figures 2,3), with a resounding 92 % agreement that oral bacteria can lead to tooth decay. In addition, 45.2% of respondents agree that brushing should begin when the child's first tooth appears, a practice recommended by dental health professionals (Figure 1). These results show that there is a broad understanding of this important oral health concept, and it is in line with previous studies [19,21]. This may be attributed through the majority of participants held a post-university education degree. Despite this, more than one-third of respondents either disagreed (15.7%) or expressed uncertainty (13.4%) regarding the risk of bedtime feeding practices, which reflects a meaningful knowledge gap that could contribute to harmful bedtime routines (Table 3), potentially increasing the incidence of early childhood caries[22–24]. In addition, twenty-six percent of caregivers in the current study said they fed their child at night using an infant feeder or a sweetened baby bottle (Figure 7). Using a sweetened baby bottle or comforter to feed at night raises the risk of ECC, with the maxillary incisors being the most susceptible, according to case reports, cross-sectional studies, and longitudinal studies employing multivariate analyses[24]. Since many caregivers may consider giving a child a bottle to aid in comfort or sleep to be a cultural norm, culturally sensitive approaches are necessary when creating programs to promote oral health. These results highlight the need for targeted educational initiatives to reinforce the dangers of nighttime juice feeding and promote healthier alternatives, such as water, especially before bedtime.

The statement "tooth decay runs in families" was accepted by nearly half of the respondents (Figure 3), while the remaining respondents were either unaware of it or disagreed with it. Therefore, some of these parents and caregivers might have a fatalistic attitude toward their child's oral health and think that caries in very young children's primary teeth is unavoidable. Both the perceived need for care and the use of health services are lower among those who hold fatalistic health beliefs[25,26].

The majority of respondents were unsure about when their children should have their first dental appointment (Figure 4). According to best-practice guidelines, children should have their first dental examination by the time they are one year old, ideally within six months of the emergence of their first tooth. Early dental attendance can also facilitate the delivery of "anticipatory guidance," which is defined as "the process of providing practical, developmentally appropriate health information to caregivers, in anticipation of significant emotional, physiological milestones[27]. The use of topical fluoride therapy, which has been demonstrated to be effective, may be made possible by early attendance[28].

Community-wide social and cultural norms and beliefs also act as a mediating factor in oral health knowledge and attitudes, and their impact on oral health behaviors [29]. The response to the question " What is the best treatment for a child's decayed primary teeth that are not causing pain?" (Figure 5) indicates different levels of awareness in the current study. 32.8% of respondents said that these teeth should be filled, which is the most common response and demonstrates an awareness of how crucial it is to preserve primary teeth whenever feasible. decided to remove the teeth, which might be a reflection of misunderstandings about the need to preserve primary teeth, even if they are not painful. Additionally, the data on dental visit frequency reveals that a large proportion of respondents (68.9%) visit the dentist only when there is pain (Table 6). This suggests that many individuals may not prioritize regular dental checkups unless they experience discomfort, which could lead to untreated issues developing into more severe problems over time.

Furthermore, the responses regarding the oral health status of children reveal that at least one-third of the population reported their children's oral health as "average"," poor", or expressed uncertainty with "I don't know" (Figure 6). The relatively low numbers in the poorer health categories might indicate either an underreporting of dental problems or a lack of awareness about less visible dental issues. For example, in this study, the frequency of sweet food consumption (Figure 7) indicates that a significant portion of the population consumes sweet foods regularly. The largest group, 33.1% consumes sweet foods once a day,

Received*: 27-04-2025 -* ***Accepted****: 22-06-2025 -* ***Published****: 03-07-2025*

which is a common habit that can contribute to dental issues if oral hygiene is not properly maintained. On the other hand, 8.4%reported consuming fruits rarely, and 2.3% reported never consuming fruits, which could indicate either dietary preferences or health concerns that limit fruit intake. Compared to participants answering a similar question in UK studies [30,31]. This percentage might be a reflection of the dietary recommendations made in the UWI dental clinic; however, few participants selected biscuits from the list. Although biscuits are thought to be extremely carcinogenic.

Hooley et al. found that supervised brushing was linked to a lower incidence of caries in their systematic review[32]. Nearly two-thirds of respondents said they assisted their child in brushing their teeth occasionally or constantly, and the majority of children in the current study were reported to brush their teeth at least twice a day (Table 5). Although some preschoolers enjoy brushing, they lack the manual dexterity to do so successfully. Therefore, it is advised that children be supervised or assisted with brushing until they are able to do so successfully, which should happen by the time they are around seven years old. In keeping with earlier research of Naidu et al [2], the majority of study participants reported using fluoride-containing toothpaste. It's concerning that instead of using a pea-sized amount of toothpaste, the majority of them were using enough to cover half or the entire brush head. Preschoolers may overindulge in toothpaste because they are unable to properly spit out after brushing. Therefore, it's critical to use the right amount of toothpaste to lower the chance that children's exposure to fluoride will result in enamel opacities in their permanent teeth. According to current recommendations, children under three years old should brush twice a day with a small-headed soft toothbrush and a smear of toothpaste (0.1 mg F), while children between the ages of three and six should use a pea-sized amount (0.2 mg F)[33].

Just over one-third of the respondents continued to breastfeed their child after a year, while almost all of them reported doing so (Figure 7). UNICEF breastfeeding guidelines are widely disseminated and endorsed in Trinidad and Tobago, but this contradicts national data that shows a fifth of mothers were breastfeeding for up to 24 months[34]. "Complementary foods should be introduced at 6 months to continue breastfeeding for at least 2 years after exclusive breastfeeding for the first 6 months," according to these recommendations. Thus, the broader health promotion agenda must be taken into consideration when developing dental health advice. The British Society for Paediatric Dentistry, for example, states in their position statement on infant feeding that mothers should collaborate closely with all of their healthcare providers in order to reduce the risk of dental caries[35].

More than half of the study participants stated that their child occasionally or frequently placed excessive demands on them (Figure 8), indicating a persistent problem that might affect their capacity to budget time for other pursuits, such as maintaining good oral hygiene. However, the data on dental care accessibility reveals that a significant portion of respondents, 39.1% find it difficult to access dental care (Table 7). This could be due to various factors such as financial constraints, location of dental services, or lack of awareness about available dental care options. There is also a high demand for educational resources, according to data on the materials used by dentists and pharmacists, as well as the need for information about dental care. The majority, 48.8%, stated that they "always" require information, indicating a persistent desire to learn more about dental care and the supplies used in treatment. Children are directly impacted by the oral health habits of their parents[8,36]. As a result, special attention should be given to the lifestyle and oral health habits of the entire family.

Conclusion

According to the study, parents have a slightly negative attitude and perception about their children's dental health. Planning comprehensive pediatric oral health care programs to improve their oral health status can benefit from knowledge of parents' attitudes regarding their children's oral health and their willingness to pay for dental care. Additional research can be done to evaluate the relationship between parents' opinions about their children's oral health and their own.

Conflicts of Interest. Nil

References

1. Mohammed Al-Dahan H, Ali Ismael S. Early childhood caries: parents' knowledge, attitude and practice towards its prevention in refugee camps in Erbil, Iraq. BMC Oral Health 2023;23(1).
2. Naidu RS, Nunn JH. Oral Health Knowledge, Attitudes and Behaviour of Parents and Caregivers of Preschool Children: Implications for Oral Health Promotion. Oral Health Prev Dent 2020;18(1).
3. Oral Health Risk Assessment Timing and Establishment of the Dental Home. In: Pediatric Clinical Practice Guidelines & Policies. 2021.
4. Featherstone JDB. Dental caries: A dynamic disease process. Aust Dent J 2008;53(3):286–91.
5. Zero DT, Fontana M, Martínez-Mier EA, Ferreira-Zandoná A, Ando M, González-Cabezas C, et al. The biology, prevention, diagnosis and treatment of dental caries: scientific advances in the United States. Journal of the American Dental Association [Internet] 2009;140:25–34.
6. Ismail AI, Hasson H. Fluoride supplements, dental caries and fluorosis: a systematic review. J Am Dent Assoc [Internet] 2008 [cited 2018 Dec 25];139(11):1457–68. Fejerskov O. Concepts of dental caries and their consequences for understanding the disease. Community Dent Oral Epidemiol 1997;25(1):5–12.

Received: *27-04-2025* - ***Accepted***: *22-06-2025* - ***Published***: *03-07-2025*

7. Shan Z, Liao C, Lu J, Yeung CPW, Li KY, Gu M, et al. Improvement of parents' oral health knowledge by a school-based oral health promotion for parents of preschool children: a prospective observational study. BMC Oral Health 2023;23(1).
8. Elamin A, Garemo M, Gardner A. Dental caries and their association with socioeconomic characteristics, oral hygiene practices and eating habits among preschool children in Abu Dhabi, United Arab Emirates - the NOPLAS project. BMC Oral Health 2018;18:1–9.
9. Chang CF. Parental Oral Health Beliefs and Practices toward Young Children's Dental Caries among Chinese Immigrant Parents. Parental Oral Health Beliefs & Practices toward Young Children's Dental Caries among Chinese Immigrant Parents 2017;
10. Rai NK, Tiwari T. Parental factors influencing the development of early childhood caries in developing nations: A systematic review. Front Public Health2018;6(MAR).
11. Patrick H, Nicklas TA. A Review of Family and Social Determinants of Children's Eating Patterns and Diet Quality. J Am Coll Nutr 2005;24(2).
12. Bekelman TA, Bellows LL, Johnson SL. Are Family Routines Modifiable Determinants of Preschool Children's Eating, Dietary Intake, and Growth? A Review of Intervention Studies. Curr Nutr Rep2017;6(2).
13. Karen Campbell, David Crawford. Family food environments as determinants of preschool-aged children's eating behaviours: implications for obesity prevention policy. A review. Australian Journal of Nutrition and Dietetics 2001;58(1).
14. Saipudin NA, Suhairom N, Wahid NHA. FAMILY FOOD CHOICES MOTIVE AMONG MALAYSIAN PRESCHOOL CHILDREN'S PARENTS. Malaysian Journal of Public Health Medicine 2022;22(3).
15. Duruk G, Akküç S, Gümüşboğa ZŞ. Children's primary dental treatment needs according to their parents. Pesqui Bras Odontopediatria Clin Integr 2021;21.
16. Quinby DJ, Sheller B, Williams BJ, Grembowski D. Parent satisfaction with emergency dental treatment at a children's hospital. J Dent Child 2004;71(1).
17. Horton S, Barker JC. Rural mexican immigrant parents' interpretation of children's dental symptoms and decisions to seek treatment. Community Dent Health 2009;26(4).
18. Naidu RS, Davis L. Parents' views on factors influencing the dental health of Trinidadian pre-school children. Community Dent Health 2008;25(1).
19. Finlayson TL, Siefert K, Ismail AI, Delva J, Sohn W. Reliability and validity of brief measures of oral health-related knowledge, fatalism, and self-efficacy in mothers of African American children. Pediatr Dent 2005;27(5).
20. Chhabra N, Chhabra A. Parental knowledge, attitudes and cultural beliefs regarding oral health and dental care of preschool children in an Indian population: A quantitative study. European Archives of Paediatric Dentistry 2012;13(2).
21. Du M, Luo Y, Zeng X, Alkhatib N, Bedi R. Caries in preschool children and its risk factors in 2 provinces in China. Quintessence Int 2007;38(2).
22. Wulaerhan J, Abudureyimu A, Bao XL, Zhao J. Risk determinants associated with early childhood caries in Uygur children: A preschool-based cross-sectional study. BMC Oral Health 2014;14(1).
23. Declerck D, Leroy R, Martens L, Lesaffre E, Garcia-Zattera MJ, Broucke S Vanden, et al. Factors associated with prevalence and severity of caries experience in preschool children. Community Dent Oral Epidemiol 2008;36(2).
24. Chhabra C, Sogi HPS, Chhabra KG, Rana S, Gupta S, Sharma P. Social and behavioral determinants of early childhood caries: A cross-sectional study within region of Ambala, Haryana. J Educ Health Promot 2022;11(1).
25. American Academy of Pediatrics. Policy on the Dental Home. American Academy of Pediatric Dentistry 2012;(6).
26. British Society of Paediatric Dentistry: A policy document on oral health care in preschool children. Int J Paediatr Dent2003;13(4).
27. Marinho VCC, Worthington H V., Walsh T, Clarkson JE. Fluoride varnishes for preventing dental caries in children and adolescents. Cochrane Database of Systematic Reviews2013;2013(7).
28. Pine CM, Adair PM, Petersen PE, Douglass C, Burnside G, Nicoll AD, et al. Developing explanatory models of health inequalities in childhood dental caries. Community Dent Health 2004;21(1 SUPPL.).
29. Hood CA, Hunter ML, Hunter B, Kingdon A. Demographic characteristics, oral health knowledge and practices of mothers of children aged 5 years and under referred for extraction of teeth under general anaesthesia. Int J Paediatr Dent 1998;8(2).
30. Hunter ML, Hood CA, Hunter B, Kingdon A. Reported infant feeding, oral hygiene and dental attendance patterns in children aged 5 years and under referred for extraction of teeth under general anaesthesia. Int J Paediatr Dent 1997;7(4).
31. Hooley M, Skouteris H, Boganin C, Satur J, Kilpatrick N. Parental influence and the development of dental caries in children aged 0-6 years: A systematic review of the literature. J Dent2012;40(11).
32. Phantumvanit P, Makino Y, Ogawa H, Rugg-Gunn A, Moynihan P, Petersen PE, et al. WHO Global Consultation on Public Health Intervention against Early Childhood Caries. Community Dent Oral Epidemiol 2018;46(3).
33. Ramroop V, Kowlessar A, Ramcharitar-Maharaj V, Morris L, Naidu R. Knowledge, attitudes and behaviour towards preventive oral care in early childhood among paediatricians in Trinidad and Tobago: findings of a national survey. Int Dent J 2019;69(1).
34. Williams L. British Society of Paediatric Dentistry Position Statement on Infant Feeding. BSPD Position Statement 2018;
35. P.M. A, C.M. P, G. B, A.D. N, A. G, S. A, et al. Familial and cultural perceptions and beliefs of oral hygiene and dietary practices among ethnically and socio-economicall diverse groups. Community Dent Health 2004;21(1 Suppl).

Received*: 27-04-2025 -* ***Accepted****: 22-06-2025 -* ***Published****: 03-07-2025*