

ORIGINAL RESEARCH

Barriers and strategies in parental toothbrushing supervision: insights from a qualitative study in Kuala Muda, Kedah, Malaysia

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Abstract

Background: Early childhood caries (ECC) remains a persistent challenge in Malaysia despite nationwide preventive programs. Parental supervision during toothbrushing is essential for the prevention of ECC, but little is known about parents' practices, perceptions, and experiences in fulfilling this role. This qualitative study explores the barriers faced by parents and the mitigating strategies used when supervising their toothbrushing among their 5- to 6-year-old children. **Methods:** Parents were recruited through snowball sampling from kindergartens in the Kuala Muda district. Semi-structured interviews were conducted either face-to-face or via an online platform. The sessions were audio-recorded and transcribed using automated software (Plaud AI). Data were analyzed using the Framework Method with both deductive and inductive coding, supported by ATLAS.ti. **Results:** Eight parents participated in the study, after which data saturation was reached, with no new themes emerging. Parents described practical and psychosocial barriers that hindered effective supervision, including time constraints and competing responsibilities; child resistance or difficult temperament; limited awareness and confidence regarding optimal brushing practices; inconsistent routines and practical limitations; and a perceived lack of institutional support from schools or community programs. Despite these challenges, parents reported using a range of strategies to reinforce supervision. These include hands-on brushing followed by gradual autonomy, establishing fixed morning and night routines, motivating children through praise and positive reinforcement, using calm behaviour management, adapting practices after professional advice, introducing brushing from infancy, and relying on school or community activities to reinforce home practices. **Conclusions:** The selected parents in Kuala Muda were highly motivated to supervise their children's toothbrushing but remained constrained by structural, behavioral, and contextual barriers. Their adaptive strategies provide valuable insights for the development of brief, practical behavioral guidance tailored to Malaysian families.

Keywords

Early childhood caries; Toothbrushing; Child; Preschool; Parents; Qualitative research; Malaysia

1. Introduction

Early childhood caries (ECC) remains a major public health concern in Malaysia, affecting a substantial proportion of preschool-aged children despite long-standing national preventive programs. According to the National Oral Health Survey of Preschool Children, 71.3% of 5-year-olds were diagnosed with dental caries, with a mean dmft of 4.83, while improvements among 6-year-olds remain slow and far below the national target of 50% caries-free children [1, 2]. Similar trends are observed regionally, with countries such as Indonesia and China reporting a high-risk prevalence of caries linked to poor fluoride exposure and cariogenic

feeding practices [3, 4]. The burden of ECC reflects not only biological factors but also behavioral and environmental determinants that shape daily toothbrushing routines at home.

Despite the availability of school-based and clinic-based preventive programs, the home environment continues to play a pivotal role in shaping children's oral hygiene practices. Preschool-aged children lack the manual dexterity and self-regulatory skills required for effective plaque removal, making parental involvement essential for ensuring appropriate brushing technique, fluoride toothpaste use, and consistent routines [5, 6]. Evidence shows that adult-assisted brushing significantly reduces caries progression [7, 8]. Importantly, supervised toothbrushing has been identified as one of the

most cost-effective preventive interventions, with economic evaluations showing a high return on investment for structured brushing support in young children [9]. However, global and local studies indicate that many children still brush independently or with minimal oversight [7, 8].

Toothbrushing supervision is a complex behaviour influenced by parental knowledge, capability, motivation, and environmental factors [5]. While many parents report supervising their children's toothbrushing, research shows that such supervision is often inconsistent, passive, or misinformed [5, 10]. Parents may only remind their children to brush without providing hands-on assistance or may lack awareness of crucial practices, such as not rinsing after brushing to preserve fluoride exposure [11, 12]. Broader behavioral research highlights that effective supervision requires skills such as planning, action control, and self-efficacy; however, these components are rarely addressed in conventional oral-health education [13].

Research has highlighted a range of barriers that parents face in sustaining effective supervision. These include time constraints, competing household responsibilities, fatigue, children's behavioral resistance, and limited confidence in performing or enforcing proper brushing techniques [5, 14]. Environmental factors, such as inconsistent routines, lack of visual cues, distractions at home, and assumptions that school programs compensate for home care, further reduce the likelihood of consistent, high-quality supervision [15, 16]. Nevertheless, parents also describe strategies such as routinization [17], gradual autonomy [17], parental modeling [18], and reinforcement tools [19], although these approaches have been more widely studied in institutional settings rather than home environments.

Together, these findings indicate that while supervised brushing is recognized as a cornerstone of ECC prevention, limited qualitative evidence describes how Malaysian parents navigate toothbrushing supervision in the context of daily life. In particular, much remains unclear about how parents perceive their supervisory role, what challenges they encounter, and what strategies they rely on to sustain effective brushing routines at home.

This study, therefore, aimed to explore the barriers faced by parents when supervising their young children's toothbrushing routines and to identify strategies that parents use to improve or sustain supervision. Insights from this qualitative phase were intended to inform the development of practical behavioral guidance for families and to complement quantitative findings linking supervision to caries risk.

2. Methodology

2.1 Study design

This study adopted an exploratory qualitative design using semi-structured, in-depth interviews to understand parental experiences, challenges, and strategies related to toothbrushing supervision within the home environment.

2.2 Study setting and participants

The study was conducted in Kuala Muda District, Kedah, Malaysia. Parents or primary caregivers of 5- to 6-year-old preschool children were eligible for inclusion if they were

responsible for the child's daily oral care and were able to communicate in Malay. Private kindergartens in the selected area were purposively selected based on accessibility, administrative approval, and the presence of 5- to 6-year-old children. These kindergartens served as the initial entry points for identifying eligible parents, after which snowball, sampling was used to expand recruitment through parental referrals. Data saturation was considered to have been reached when no substantially new themes emerged after the eighth interview.

2.3 Data collection

Prior to participation, all parents received a Participant Information Sheet detailing the study objectives, interview procedures, voluntary nature of participation, confidentiality measures, and data management procedures. Written informed consent was obtained before the interviews started. Interviews were conducted between May and July 2025 either face-to-face at the kindergarten or via an online platform (Google Meet), depending on the participants' preference and availability. Each interview lasted approximately 20 to 30 minutes and was facilitated by the primary investigator, with a research assistant providing note-taking support. A semi-structured topic guide, adapted from Suprabha *et al.* [20], focused on two main domains: (i) barriers and challenges in supervising toothbrushing routines, and (ii) parental insights and suggestions for improving supervision. All interviews were audio-recorded, transcribed using Plaud AI (PLAUD NOTE AI Voice Recorder, Model NB-100; Shenzhen Smart Connect Technology Co., Ltd., Shenzhen, Guangdong, China), and checked against the original recordings for accuracy.

2.4 Data analysis

Data were analyzed using the Framework Method, as described by Gale *et al.* [21]. Both deductive and inductive approaches were employed. Deductive codes were derived from prior literature on supervision practices, while inductive coding allowed new themes related to barriers and strategies to emerge from parents' narratives. Transcripts were imported into ATLAS.ti (Version 26; ATLAS.ti Scientific Software Development GmbH, Berlin, BE, Germany) for coding and data management. An initial subset of transcripts was independently coded by the primary investigator and a second coder to develop a shared codebook. Discrepancies were discussed until consensus was achieved. The remaining transcripts were then coded using the agreed codebook, and the second coder reviewed selected transcripts to check for consistency. Matrices were used to compare themes across participants and to summarize patterns.

3. Results

3.1 Study participants

Fifteen parents were approached for participation. Data saturation was achieved after the eighth interview, defined as the point at which no new themes or insights emerged. Recruitment was concluded at this stage, as the data were considered sufficiently rich and comprehensive to address the study aims.

The participants comprised six mothers and two fathers of 5- to 6-year-old children, who were the primary caregivers responsible for their children's daily toothbrushing routines.

3.2 Barriers to toothbrushing supervision

Although most parents reported supervising their children's toothbrushing, several barriers hindering consistent and effective supervision were identified. These challenges extended beyond individual motivation and were shaped by five key sub-themes: (1) time constraints and competing responsibilities, (2) children's resistance or temperament, (3) lack of awareness or confidence, (4) inconsistency and practical limitations, and (5) lack of institutional support. A thematic summary is illustrated in Fig. 1, which was created using artificial intelligence tools.

3.2.1 Time constraints and competing responsibilities

Parents often shared that busy routines, work demands, and household responsibilities limited their ability to supervise brushing consistently. Mornings were described as particularly challenging, with multiple tasks competing for attention.

"Sometimes I am too busy in the morning to supervise her brushing, especially when I am rushing to work." (P5, mother of a 6-year-old child)

"There is only so much we can do in the morning. Getting all the kids ready for school is already stressful." (P2, mother of a 6-year-old child)

3.2.2 Child's resistance or temperament

Children's resistance emerged as a recurring challenge, with parents describing both emotional and physical opposition during toothbrushing. These behaviors, ranging from avoidance to

active refusal, often required parents to adopt additional effort and patience to complete the task. Variations in children's temperament, including distractibility and low cooperation, further complicated consistent supervision.

"He often runs away when I try to help him brush his teeth." (P1, father of a 5-year-old child)

"Sometimes, he bites or refuses to open his mouth." (P3, mother of a 5-year-old child)

"Sometimes, she just wants to play instead of brushing her teeth." (P2, mother of a 6-year-old child)

3.2.3 Lack of awareness or confidence

Some parents expressed uncertainty about their knowledge and skills, which affected their confidence in supervising their children's toothbrushing. Gaps in understanding, particularly regarding fluoride use and appropriate brushing practices, led to doubts about whether they were guiding their children correctly. This lack of confidence sometimes limited their ability to provide effective supervision.

"I did not know that rinsing after brushing can reduce the effect of fluoride. I always thought it was normal to rinse." (P6, father of a 6-year-old child)

"I want to help him brush his teeth, but I am not sure whether I am doing it correctly myself." (P3, mother of a 5-year-old child)

3.2.4 Inconsistency and practical limitations

Parents acknowledged that supervision was not always maintained consistently, as it was influenced by competing demands and practical constraints. Fatigue after work, fluctuating household routines, and time pressures often limited their ability to provide direct supervision. In such situations, parents described relying more on verbal reminders rather than active

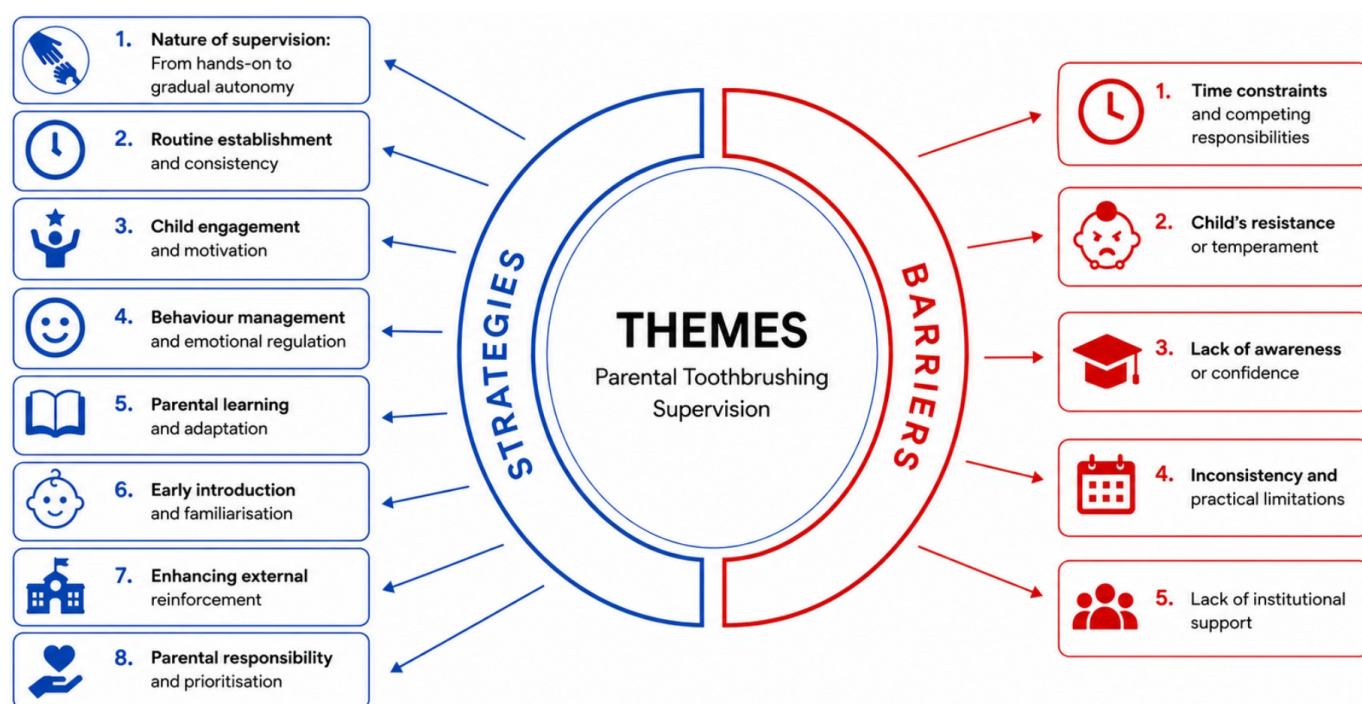


FIGURE 1. Summary of key themes related to barriers and strategies in parental toothbrushing supervision among selected parents of preschool children in Kuala Muda, Kedah, Malaysia.

involvement, highlighting a shift from direct supervision to indirect monitoring.

“After coming back from work, sometimes I am just too tired to supervise him properly.” (P4, mother of a 6-year-old child)

“Sometimes I supervise, sometimes I do not, depending on the situation at home.” (P2, mother of a 6-year-old child)

“When I am too tired, I will just tell him to brush his teeth. If I do not tell them to brush their teeth, they will not do it.” (P3, mother of a 5-year-old child)

3.2.5 Lack of institutional support

Some parents perceived that oral health promotion efforts beyond the home were insufficient to reinforce their supervision practices. In particular, school-based initiatives were described as infrequent and lacking continuity, limiting their potential to sustain children’s oral health behaviors over time.

“I feel that, at the school level, these programs are not conducted regularly, so they do not have much impact on the children.” (P2, mother of a 6-year-old child)

3.3 Strategies used to strengthen supervision

Findings from the interviews revealed a variety of strategies used by parents to enhance their supervision of children’s toothbrushing practices. These strategies comprised practical, behavioral, and emotional approaches aimed at promoting consistent and effective toothbrushing behaviors at home. Eight interrelated themes were identified (Fig. 1): (1) Nature of supervision: From hands-on assistance to gradual autonomy, (2) Routine establishment and consistency, (3) Child engagement and motivation, (4) Behaviour management and emotional regulation, (5) Parental learning and adaptation, (6) Early introduction and familiarization, (7) Enhancing external reinforcement, and (8) Parental responsibility and prioritization.

3.3.1 Nature of supervision: from hands-on to gradual autonomy

Parents shared that their approaches to supervising toothbrushing were not uniform but evolved over time. These approaches progressed from full parental control to shared responsibility and eventually to child-led practice with oversight.

“When they were younger, I was the one brushing their teeth.” (P4, mother of a 6-year-old child)

“He brushes first by himself, and then I follow up to make sure it is done properly.” (P1, father of a 5-year-old child)

“I used to help with brushing, but now I just observe while the child does it independently.” (P5, mother of a 6-year-old child)

3.3.2 Routine establishment and consistency

Parents highlighted that establishing a fixed routine was central to helping their children develop the habit of toothbrushing. Daily repetition, reminders, and parental presence made brushing feel like a normal part of life rather than a chore. Over time, these routines gave children the confidence to sustain the practice, even in other settings, such as school.

“I used to remind him to brush twice a day; now he’s used to brushing every morning and night.” (P3, mother of a 5-year-

old child)

“For my six-year-old child, I have always reminded her to brush her teeth every morning and night; it has become a routine for her.” (P1, father of a 5-year-old child)

“Every morning, I accompany him in the bathroom while he brushes his teeth. If we make it a habit at home from an early age, it becomes part of the child’s routine. Even at school, the child can then manage independently.” (P4, mother of a 6-year-old child)

3.3.3 Child engagement and motivation

Parents described child engagement as variable, requiring different motivational strategies to support consistent toothbrushing. While some children demonstrated intrinsic willingness and initiative, others required external encouragement. Parents commonly used verbal reassurance and reward-based approaches, such as praise or small incentives, to foster cooperation and sustain interest. These strategies were seen as effective in promoting positive associations with toothbrushing, particularly among younger children.

“Sometimes they are willing to brush on their own. If we speak to them gently, they are more likely to brush.” (P6, father of a 6-year-old child)

“We use rewards, like star stickers or simple praise, to motivate her.” (P1, father of a 5-year-old child)

3.3.4 Behaviour management and emotional regulation

Toothbrushing supervision was not only about technique but also about managing children’s emotions and behaviors. Parents stressed the need for patience, gentle approaches, and persistence to prevent resistance and to ensure toothbrushing was completed properly. Younger children were especially prone to crying or refusal behaviors, which required extra reassurance and calm handling.

“If we scold him, he becomes even more unwilling to brush.” (P4, mother of a 6-year-old child)

“I make sure the teeth are brushed thoroughly, both inside and outside, because sometimes the child is lazy, so we have to check.” (P7, mother of a 5-year-old child)

“When he was 2 or 3 years old, he often had tantrums, sometimes crying and sometimes refusing to brush. We just needed to be patient.” (P7, mother of a 5-year-old child)

3.3.5 Parental learning and adaptation

Parents described supervision practices not as fixed routines, but as responsive behaviors shaped by accumulating knowledge, lived experiences, and external influences. Learning often occurred through trigger events, such as a child’s caries experience, which prompted reassessment of previous routine practices, as described by some of the participants:

“The doctor explained about the recommended fluoride level, so we switched to a different toothpaste containing 1000 ppm fluoride toothpaste after our child developed cavities in the front teeth.” (P1, father of a 5-year-old child)

“At first, I used a hard toothbrush, but when the dentist advised me to change it, I switched to a soft toothbrush. I also learned from social media like Facebook, where the influencer is also a doctor.” (P2, mother of a 6-year-old child)

3.3.6 Early introduction and familiarization

Parents consistently emphasized that early initiation of toothbrushing was critical for establishing familiarity and routine. Introducing brushing as soon as the first teeth erupted helped normalize the practice and reduce resistance as children grew older. Participants stated that early exposure was not limited to instruction alone but often involved playful engagement, allowing children to interact with the toothbrush and gradually develop acceptance.

"It is about early education; parents need to start early." (P1, father of a 5-year-old child)

"When she started to have teeth, she was seven months, so I started brushing. You have to first introduce the toothbrush and let them play with it, so they get used to it." (P5, mother of a 6-year-old child)

"When we practice it from a young age, it becomes a habit, and the child can manage independently, even at school." (P4, mother of a 6-year-old child)

3.3.7 Strengthening school and community support

Parents recognized that supervision at home could be reinforced by support from schools and the wider community. They valued structured initiatives, such as school-based programs and health talks, which helped children learn proper brushing techniques. Community outreach was also seen as beneficial in sustaining good habits and heightening awareness.

"Previously, programs were conducted in schools, where children could learn how to brush properly." (P3, mother of a 5-year-old child)

"When we were in school, a nurse would come and give health talks." (P4, mother of a 6-year-old child)

"There are also programs organized by the Ministry of Health at community parks. These programs helped our children to learn about oral health." (P6, father of a 6-year-old child)

3.3.8 Parental responsibility and prioritization

Parents recognized that, despite the demands of work and daily routines, their responsibility in shaping their children's oral health remained a non-negotiable priority. Supervision was consistently emphasized as essential for ensuring regular toothbrushing, with some parents structuring routines to maintain oversight at key times of the day.

"No matter how busy we are, we have to make sure they brush their teeth." (P7, mother of a 5-year-old child)

"She brushes by herself at night, but in the morning, I supervise to make sure she does it properly." (P3, mother of a 5-year-old child)

"I make sure he brushes twice a day, even when I am in a rush." (P4, mother of a 6-year-old child)

4. Discussion

This qualitative study provides insight into how parents in Kuala Muda District of Malaysia experience the task of supervising their young children's toothbrushing. Although they were generally motivated and recognized the importance of

their role, parents encountered multiple structural and behavioral barriers that interfered with consistent, high-quality supervision. These challenges affected how parents enacted supervision in real-life settings, often shaping whether assistance was hands-on, shared, or left to the child.

Time constraints and competing responsibilities were the most commonly reported barriers. Parents frequently described brushing sessions as rushed and stressful, especially during morning and evening routines. This finding mirrors international evidence, particularly in dual-income households where time scarcity disrupts preventive practices [14]. However, its persistence in this relatively advantaged sample suggests that time constraints are not only linked to socioeconomic disadvantage but also to modern household structures and parental workloads. This points to a structural challenge that individual education cannot solve. Instead, public health programs should explore system-level reinforcements, such as strengthening school-based daily brushing schemes or integrating toothbrushing into childcare routines, to ease the burden on parents. In Malaysia, the Ministry of Health's (MOH) Daily Toothbrushing programme serves as a key initiative for promoting routine toothbrushing behaviours among preschool children [2]. However, its implementation requires improvement, as many kindergartens are reluctant to adopt it due to concerns about the lack of designated areas for group toothbrushing and hygiene maintenance. To mitigate these challenges, implementation strategies could include providing simple infrastructure support such as portable sinks or designated rinsing stations, training teachers on managing group brushing efficiently, and incorporating toothbrushing into structured daily routines such as after meals. Pilot testing and adapting the program to different preschool settings could help determine its feasibility and acceptance.

Child resistance and temperament were another recurring challenge. Parents reported behaviors such as refusal, avoidance, and even biting, which often transformed brushing into a source of conflict. These findings are consistent with studies highlighting the impact of child behavior on undermining supervision [22, 23]. However, the critical issue is not the resistance itself, as such behaviours are developmentally typical, but how parents respond to them. In this study, it is positive to note that most parents perceived toothbrushing supervision as a non-negotiable priority. Hence, it is important to further equip parents with positive behaviour management strategies, such as modeling toothbrushing, using praise and reward systems, and reframing brushing as a game or daily ritual rather than a point of conflict [19, 24]. Guidance from dental professionals and preschool teachers can reinforce these approaches, while anticipatory counselling during well-child visits can help parents prepare for resistance before it escalates. Embedding behaviour management support into oral health promotion reflects the Ottawa Charter's principle of "developing personal skills" [25], but its effectiveness depends on reinforcement through supportive environments at both home and school.

Lack of confidence and awareness also emerged as a barrier. Parents often believed that they were supervising adequately; however, they overlooked evidence-based practices such as

avoiding rinsing after brushing or ensuring the use of an appropriate amount of fluoride toothpaste. This is consistent with previous findings showing that parents commonly overestimate their competence [26]. The data also revealed that changes in supervision were often reactive, being made only after caries were detected, thereby reducing preventive effectiveness. Although anticipatory guidance is already embedded in Malaysia's antenatal and toddler programs [27], parents are routinely provided with advice on age-appropriate oral hygiene practices, feeding habits, early dental visits, and early caries detection through the "Lift the Lip" approach. Nevertheless, the findings of this study suggest that information provision alone may not be sufficient to ensure consistent implementation of recommended practices at home. To address this, health promotion should move beyond information-giving toward hands-on and interactive approaches. Skill-building interventions, such as live demonstrations, motivational interviewing, and chairside coaching during dental visits, can help parents translate knowledge into practice [28]. Reinforcement through follow-up, digital reminders, or school-based collaborations can further sustain behaviour change. Embedding these approaches would ensure that anticipatory guidance is not only heard but also applied, thereby strengthening its preventive impact.

Inconsistency and practical limitations were also highlighted. Parents described lapses due to fatigue, irregular schedules, or leaving brushing to the child's initiative. Even motivated parents admitted difficulty in sustaining twice-daily supervision. Similar patterns have been reported elsewhere [14]. The persistence of these lapses suggests that motivation alone is insufficient and cannot be sustained without environmental support. From a public health perspective, this underscores the need for supportive policies and environments, such as embedding supervised brushing in schools and ensuring equitable access to preventive programs. Of note, if such an inconsistency in toothbrushing supervision were observed in a relatively advantaged group, parents and children from disadvantaged households are likely to face even greater challenges, raising concerns of socioeconomic inequalities [29].

These findings also have important implications for resource-limited settings, where parents often face greater competing demands, fewer community resources, and limited access to preventive oral health services. Rather than relying on resource-intensive interventions, future programmes should prioritize simple, theory-informed implementation approaches that translate evidence-based supervision recommendations into a concise set of practical behaviours that parents can easily remember and integrate into their daily routines. Consistent with evidence from home-based toothbrushing interventions, these approaches should combine behavioural support with practical, parent-friendly resources that facilitate implementation rather than relying solely on oral health education [14, 19]. Integrating these strategies into existing maternal and child health services and reinforcing them through simple home-based prompts may enhance their reach and sustainability, particularly where healthcare resources are limited [19, 28]. Such low-cost, parent-centered approaches have the potential to improve the feasibility, acceptability, and

long-term implementation of supervised toothbrushing among disadvantaged families [15].

Finally, parents mentioned limited institutional reinforcement. School-based oral health programs were described as sporadic and less engaging, which made it harder to sustain home routines. While schools remain a trusted source of reinforcement, these findings point to the need for more regular, practical, and interactive initiatives to complement home supervision. This reflects the Ottawa Charter's call to "strengthen community action" [25] by involving schools, childcare centers, and communities in sustaining daily practices, so that oral health promotion is not left solely to parents.

Despite these barriers, parents demonstrated adaptability through various supervisory strategies. Many described brushings for the child after the child's own attempt, aligning with recommendations that children lack the motor skills for effective brushing until at least age seven [30]. Others emphasized establishing predictable morning and evening routines, consistent with evidence that habit formation improves adherence [31]. Parents also reported using positive reinforcement techniques such as praise, rewards, and playful interaction, echoing behavioral evidence that cooperation is more effective than coercion [32]. However, a critical observation is that many of these strategies were adopted reactively, for example, introducing stricter routines only after dental caries or persistent resistance occurred. While such adjustments show parental resilience, they also highlight a missed preventive opportunity. Without proactive support, changes often come too late to reduce disease risk. This highlights the need for anticipatory, skill-based parental education, delivered proactively in early childhood, and reinforced by institutions to ensure consistency.

In summary, these findings reveal that although parents valued toothbrushing and intended to supervise effectively, their efforts were frequently constrained by structural pressures, child behaviour, gaps in knowledge, inconsistent routines, and weak institutional reinforcement. Parents were motivated and involved, but these contextual challenges limited their ability to sustain optimal brushing assistance. Their coping strategies, while creative, were often reactive rather than preventive. This study, therefore, highlights the need for a public health approach that: (i) empowers parents with the skills and confidence to supervise proactively, and (ii) strengthens supportive environments through schools, communities, and policy to make effective supervision a sustainable norm.

Strengths of this study include its focus on an under-researched behavioral domain and the use of rigorous analytical methods, including intercoder verification. Although the qualitative sample comprised only eight participants, data saturation was achieved, with no new themes emerging in the final interviews, supporting the adequacy of the sample size for in-depth qualitative inquiry. This is consistent with established qualitative research standards, where smaller, purposive samples are considered sufficient once thematic saturation is achieved, particularly in relatively homogeneous samples [33]. Nevertheless, several limitations should be acknowledged. Participants were recruited from a single district in Kedah using purposive sampling, which may limit the transferability of the findings to other geographical or cultural settings. In addition, the

study relied on self-reported behaviours, which are susceptible to recall and social desirability bias. As interviews were conducted at a single time point, the findings may not capture changes in parental supervision behaviours over time. Future research could incorporate observational methods and extend to more diverse populations to enhance generalizability.

5. Conclusions

The selected parents in Kuala Muda are committed to supporting their children's oral health but face substantial challenges in maintaining effective toothbrushing supervision. Their experiences highlight the need for practical, context-sensitive behavioral guidance and stronger support from schools and community programs. Incorporating these insights into preventive strategies may enhance early childhood caries prevention efforts in Malaysia.

AVAILABILITY OF DATA AND MATERIALS

The qualitative datasets generated and analyzed during the current study are not publicly available to protect participant confidentiality but are available from the corresponding author upon reasonable request.

AUTHOR CONTRIBUTIONS

RS and NAM—conceived and designed the study. RS—conducted the interviews and led the data analysis. EKMC and NAM—contributed to the interpretation of the findings and to the critical revision of the manuscript. All authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Ethical approval was obtained from the Medical Ethics Committee, Universiti Malaya (DF CO2508/0061(P)). The study was also registered in the National Medical Research Register (NMRR ID-25-00321-TOD) and received permission from the Kedah State Oral Health Division and the Kuala Muda District Education Office. Written informed consent was obtained from all participants before the interviews.

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CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest related to this work.

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