



Behaviour Management Skills Among Dentists: Knowledge, Attitude, and Practice in Managing Child Patients in Jeddah, Saudi Arabia

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Abstract Background: Paediatric dental fear is a common challenge that requires effective behaviour management techniques (BMTs). Dentists' knowledge, attitudes, and practices (KAP) in this area influence treatment outcomes and children's acceptance of care. This study assessed the KAP of dentists in Jeddah, Saudi Arabia, regarding BMTs. **Methods:** A cross-sectional study was conducted among 116 licensed dentists who manage paediatric patients in governmental and private practices. A bilingual (English and Arabic) questionnaire was distributed electronically. The tool assessed demographics, knowledge, attitudes (confidence, training adequacy, and willingness for further education), and practices regarding BMTs. Descriptive statistics and chi-square/Fisher's exact tests were applied, with significance set at $p < 0.05$. **Results:** Of 116 respondents, 76.7% were under 40 years, and 65.5% were general dentists. Awareness of BMTs was high (91.4%), yet only 38.8% reported adequate confidence in managing fearful children. Tell-Show-Do (54.3%) was the most used technique, followed by distraction (14.7%) and positive reinforcement (8.6%). Awareness was significantly higher among older dentists (>40 years, $p = 0.001$), postgraduates ($p = 0.007$), and those in the public sector ($p = 0.043$). However, 44.8% had not attended any postgraduate training in dental fear, and only 15.5% had attended several. Most dentists (74.1%) expressed willingness to attend workshops on behaviour management. **Conclusion:** While knowledge of BMTs was widespread, gaps remained in confidence and postgraduate training, especially among younger and non-specialist dentists. Targeted curricula and structured continuing education are recommended to strengthen non-pharmacological behaviour management and reduce reliance on pharmacological interventions.

Key Words Paediatric Dentistry, Dental Fear, Behaviour Management Techniques, Continuing Education, KAP Study

INTRODUCTION

Paediatric dental fear and anxiety can adversely affect cooperation, prolong treatment, and compromise outcomes [1]. Behaviour management techniques (BMTs) are fundamental tools for alleviating these challenges through evidence-based, child-centred approaches such as Tell-Show-Do, distraction, and positive reinforcement [2,4]. International guidelines, including those of the American Academy of Paediatric Dentistry (AAPD), recommend integrating behavioural, psychological, and communication strategies in paediatric dental care [5].

The choice and success of BMTs are strongly shaped by cultural and regional contexts. For instance, directive methods are more common in hierarchical societies such as India and Bosnia [6,7], while autonomy-based strategies are emphasized in Australia

[8]. Saudi Arabia's cultural context, including parental involvement and gendered perceptions of fear, may significantly influence BMT application, yet local evidence remains limited [9].

Globally, dentists' knowledge and confidence vary, with studies showing that paediatric dentists employ more diverse BMTs than general dentists [10,11]. Saudi studies highlight that although awareness is relatively high, training opportunities remain insufficient [12]. Given that dentists' self-efficacy and professional development strongly predict effective application [13], assessing local KAP is essential.

This study aimed to assess dentists' knowledge, attitudes, and practices regarding paediatric BMTs in Jeddah, Saudi Arabia, and to identify gaps that can inform training and curriculum development.

In contrast, countries with well-established preventive programs, such as Denmark and Japan, report lower levels of dental fear among children [14]. In Saudi Arabia, Alshoraim et al. found that although there was no significant association between previous dental visits and fear levels, female children exhibited higher levels of fear, suggesting possible cultural influences on anxiety expression [15].

The success of BMTs is also strongly tied to the dentist's confidence and experience. Dentists who feel comfortable using a particular technique are more likely to apply it effectively and frequently [16]. Structured education and hands-on training have been shown to improve both skill and comfort levels in applying behaviour management methods, underscoring the importance of continued professional development [17]. Moreover, paediatric dentists typically employ a more diverse and nuanced range of BMTs than their general dental counterparts, as demonstrated in comparative studies from Germany and Saudi Arabia [18,19]. Given this background, the present study explored the knowledge, attitudes, and use of behaviour management techniques among dental professionals in Jeddah, Saudi Arabia. The aim was to identify current practices, highlight areas needing improvement, and support future training efforts to enhance paediatric dental care.

METHODS

A descriptive cross-sectional study was conducted among dentists practicing in Jeddah, Saudi Arabia, between March and April 2023.

Sample Size

Based on a 95% confidence level, 5% margin of error, and assumed prevalence of 50%, the calculated sample was 384. However, only 116 responses were obtained, yielding an underpowered sample.

Sampling

Convenience and snowball sampling were employed through clinic directories, hospital rosters, and professional networks. Inclusion criteria were dentists licensed in Jeddah who manage paediatric patients; exclusion criteria were dentists not treating children.

Questionnaire

A structured bilingual (English/Arabic) questionnaire, adapted from validated international surveys [14–16], was pilot-tested on 20 dentists. It comprised four domains: (1) demographics, (2) knowledge of BMTs, (3) attitudes (confidence, adequacy of undergraduate training, willingness for further learning), and (4) practices (technique usage and treatment adjustments). Content validity was reviewed by two paediatric dentistry experts.

Data Analysis

Data were analysed using SPSS v26. Descriptive statistics summarized responses. Chi-square or Fisher's exact tests were applied where appropriate. Significance was set at $p < 0.05$.

RESULTS

Of the 116 respondents, 74.1% were Saudi nationals, 76.7% were under 40 years, and 54.3% were male. General dentists formed 65.5% of the sample, while only 4.3% specialized in paediatric dentistry.

Knowledge

Majority of the respondents i.e. 91.4% reported awareness of BMTs. Awareness differed significantly by age (>40 years: 31.3% vs. <40 years: 5.0%, $p = 0.001$), qualification (postgraduates: 26.1% vs. general dentists: 4.3%, $p = 0.007$), and practice sector (public: 15.9% vs. private: 3.8%, $p = 0.043$).

Attitudes

Confidence was reported as adequate by 38.8%, fair by 56.0%, and inadequate by 5.2%. Undergraduate training was judged as "just enough" by 54.3%, though 41.4% wished they had more. Regarding postgraduate exposure, 44.8% had none, 39.7% attended a little, and 15.5% attended several courses. Encouragingly, 74.1% expressed willingness to attend workshops.

Practices

Non-pharmacological BMTs were preferred by 82.8%. Tell-Show-Do was most common (54.3%), followed by distraction (14.7%) and positive reinforcement (8.6%). Pharmacological methods were reported by 17.2%. Many respondents allowed extra appointment time (37.1% always, 36.2% occasionally) and adjusted treatment plans for fearful children (50.9% always, 37.1% occasionally) (Table 1-5).

Table 1: Sociodemographic and practice characteristics of participants

Characteristics	N	%	
Nationality	Non-Saudi	30	25.9
	Saudi	86	74.1
Age	Below 40	89	76.7
	Above 40	27	23.3
Gender	Female	53	45.7
	Male	63	54.3
Locality of Practice	Urban	107	92.2
	Rural	9	7.8
Level of Practice	Hospital	59	50.9
	Dispensary/ Health care center	57	49.1
Sector of Practice	Public	51	44.0
	Private	65	56.0
Number of Years in Clinical Practice	Less than 5 years	70	60.3
	More than 5 years	46	39.7
Level of Professional Training	Graduate in Dental/ General practice	76	65.5
	Post-graduate in Pediatric Dentistry	5	4.3
	Post-graduate in other dental specialty	35	30.2

Table 2: Awareness and Attitudes regarding dental fear management

Variable	Category	N	%
Confidence in treating children with dental fear	Adequate	45	38.8
	Fair	65	56.0
	Inadequate	6	5.2
UG training about dental fear	No training	2	1.7
	Just enough	63	54.3
	Wish had more	48	41.4
	Wish had less	3	2.6
Attended postgrad courses	None	52	44.8
	A little	46	39.7
	Several	18	15.5
Awareness of behaviour management techniques	Aware	106	91.4
	Unaware	10	8.6

Table 3: Awareness of behaviour management techniques according to the sociodemographic and practice characteristics of participants

Parameter	Variable	Aware	Unaware	Total	p-value
Nationality	Non-Saudi	4 (19.0%)	17 (81.0%)	21 (100.0%)	0.085
	Saudi	5 (6.7%)	70 (93.3%)	75 (100.0%)	
Age	Above 40	5 (31.3%)	11 (68.8%)	16 (100.0%)	0.001
	Below 40	4 (5.0%)	76 (95.0%)	80 (100.0%)	
Gender	Female	4 (8.9%)	41 (91.1%)	45 (100.0%)	0.878
	Male	5 (9.8%)	46 (90.2%)	51 (100.0%)	
Area of practice	Urban	9 (10.2%)	79 (89.8%)	88 (100.0%)	0.343
	Rural	0 (0.0%)	8 (100.0%)	8 (100.0%)	
Level of Practice	Hospital	6 (13.3%)	39 (86.7%)	45 (100.0%)	0.211
	Clinics/Dispy.	3 (5.9%)	48 (94.1%)	51 (100.0%)	
Sector of practice	Public	7 (15.9%)	37 (84.1%)	44 (100.0%)	0.043
	Private	2 (3.8%)	50 (96.2%)	52 (100.0%)	
Years in Practice	<5 years	4 (6.2%)	61 (93.8%)	65 (100.0%)	0.117
	>=5 years	5 (16.1%)	26 (83.9%)	31 (100.0%)	
Qualification	Graduate/General	3 (4.3%)	67 (95.7%)	70 (100.0%)	0.007
	Post-grad Paediatric	0 (0.0%)	3 (100.0%)	3 (100.0%)	
	Post-Grad Other Specialty	6 (26.1%)	17 (73.9%)	23 (100.0%)	

Table 4: Practice-Related Behaviour regarding dental fear in children

Variable	Category	N	%
Sought support about dental fear	None	11	9.5
	Colleague	48	41.4
	Paediatric dentist	33	28.4
	Internet	12	10.3
	Scientific papers	7	6.0
	Others	5	4.3
Allow extra time for fearful child	Never	2	1.7
	Rarely	9	7.8
	Once in a while	42	36.2
	Sometimes	20	17.2
	Always	43	37.1
Adjust treatment plan for dental fear	Never	1	0.9
	Rarely	4	3.4
	Once in a while	43	37.1
	Sometimes	9	7.8
	Always	59	50.9
Behaviour management technique used	Pharmacological	20	17.2
	Non-pharmacological	96	82.8
Refer fearful child for anaesthesia	Never	9	7.8
	Rarely	15	12.9
	Once in a while	51	44.0
	Sometimes	21	18.1
	Always	20	17.2
Non-Pharmacological Techniques Used	Tell-Show-Do	63	54.3
	Distraction	17	14.7
	Positive Reinforcement	10	8.6
	Voice Control	8	6.9
	Parental Presence or Absence	7	6.0
	Desensitization	6	5.2
	Modelling	3	2.6
	Nonverbal Communication	1	0.9
	Restrain/Protective Stabilization	1	0.9

Table 5: Preferences for learning behaviour management technique

Parameter	Variable	N	%
Attended any professional courses in the field of dental fear/ care delivery after graduating	None	52	44.8
	Yes, a little	46	39.7
	Yes, several	18	15.5
Preferred ways to enhance knowledge regarding behaviour management technique usage	Clinical workshops	35	30.2
	Formal classes	37	31.9
	Inclusion in courses	39	33.6
	Others	5	4.3
Willing to participate in clinical workshops	No	30	25.9
	Yes	86	74.1

DISCUSSION

The findings of this study showed that about 56.0% of respondents rated their confidence in managing children with dental fear as "fair," suggesting moderate self-efficacy among the dental workforce. This may reflect limited practical exposure or insufficient emphasis on paediatric behaviour management during training. Only a small proportion (5.2%) reported feeling inadequate, indicating that most dentists feel at least somewhat capable, albeit not optimally confident. Undergraduate education appeared to play a crucial role in shaping these attitudes, with 54.3% of participants stating that their training was "just enough." However, 41.4% expressed a desire for more comprehensive instruction, highlighting potential gaps in dental curricula related to behavioural management. The very small proportion of dentists reporting no training or wishing for less (1.7% and 2.6%, respectively) further underscores the general acknowledgment of the importance of BMTs in clinical practice. When evaluating continuing education, it was found that nearly half of the respondents (44.8%) had not attended any postgraduate courses related to dental fear management, while 39.7% had received minimal exposure. Only 15.5% had attended several such courses, suggesting a clear need to promote more structured professional development opportunities in this area. This aligns with earlier studies emphasizing that continuing education significantly enhances dentists' competence and confidence in managing paediatric patients [18,20]. Encouragingly, the vast majority of participants (91.4%) reported being aware of behaviour management techniques, indicating a generally well-informed cohort. Nevertheless, the gap between awareness and practical application, especially in terms of advanced or less commonly used techniques, remains a concern and warrants targeted training interventions [21]. These findings reinforce the need to integrate both foundational and advanced behavioural management strategies into both undergraduate and postgraduate dental education to better equip practitioners for real-world paediatric care.

Although overall awareness of BMTs was high among participants, the data revealed significant variations across key demographic and professional variables. Age emerged as a significant factor, with participants over 40 years old demonstrating substantially higher awareness (31.3%) compared to their younger counterparts (5.0%). This finding suggests that increased clinical exposure and accumulated experience over time may enhance familiarity and

competence in utilizing BMTs [22]. It also reflects the potential benefits of experiential learning and continued practice in paediatric dental settings. Qualification level also showed a statistically significant association with awareness. Dentists with postgraduate qualifications in dental specialties reported the highest awareness (26.1%), while those with only undergraduate general dental training demonstrated the lowest (4.3%). Such findings are consistent with earlier literature indicating that postgraduate education significantly contributes to dentists' readiness to implement a broader range of behaviour guidance techniques [23,24].

Sector of employment was another significant factor influencing awareness. Dentists working in the public sector reported greater awareness (15.9%) compared to those in private practice (3.8%). This may be attributed to the higher volume of paediatric patients commonly treated in public institutions, offering more opportunities for dentists to engage with and apply various BMTs [25]. Moreover, public sector practitioners may have more access to continuing education initiatives and institutional support for skill development. Other variables including gender, locality, nationality, level of practice, and years of experience—did not show statistically significant associations with awareness. However, there were observable trends indicating slightly higher awareness among hospital-based practitioners and those with more years of experience. These trends, while not statistically significant, suggest that clinical setting and duration of practice may still play a contributory role in shaping familiarity with BMTs and merit further investigation in larger, more diverse samples [26].

In this study, most participants reported seeking support for managing dental fear by consulting colleagues (41.4%) or paediatric dentists (28.4%), with minimal reliance on the internet (10.3%), scientific literature (6.0%), or other sources (4.3%). This preference for peer consultation over evidence-based resources may reflect time constraints, accessibility issues, or limited confidence in independently interpreting scientific data, an issue highlighted in previous studies that underscore the need to promote evidence-based practice among general dentists [27,28]. Encouragingly, only 9.5% reported never seeking support, suggesting a generally proactive approach toward clinical uncertainty. In managing appointments for fearful paediatric patients, a substantial proportion reported always (37.1%) or occasionally (36.2%) allowing extra time, which is an essential strategy for reducing anxiety and enhancing cooperation, as supported by Jamali *et al.* [29]. Likewise, the frequent adjustment of treatment plans indicates flexibility in clinical practice, which is critical for tailoring care to the psychological needs of children [4]. The widespread use of non-pharmacological techniques (82.8%), particularly Tell-Show-Do (54.3%), distraction (14.7%), and positive reinforcement (8.6%), aligns with AAPD recommendations emphasizing these as first-line interventions for behaviour guidance [30]. However, the occasional reliance on general anaesthesia raises questions about possible overuse or inadequate behavioural training,

as excessive reliance on pharmacological methods may reflect gaps in confidence or experience in managing uncooperative children through behavioural means [31,32].

This study highlights a clear gap between dentists' awareness of BMTs and their confidence and training in applying them. Although knowledge was high (91.4%), fewer than half felt adequately confident. This mirrors international findings where theoretical awareness often exceeds applied competence [17,18].

The association between higher awareness and postgraduate qualifications underscores the role of structured training in building confidence and skills [19]. Similarly, older dentists' higher awareness suggests that cumulative experience enhances familiarity with diverse techniques [20]. However, reliance on colleagues rather than scientific evidence for guidance reflects limited integration of evidence-based practice, a concern also documented in other Middle Eastern studies [21,22].

The reliance on Tell-Show-Do and limited use of advanced techniques indicates underutilization of the full BMT spectrum, as also reported by Aldhilan and Ali in Saudi Arabia [23]. The preference for workshops (74.1%) confirms the need for practical, skills-based continuing education programs.

CONCLUSIONS

Although dentists in Jeddah demonstrated high awareness of paediatric BMTs, confidence and training were suboptimal, particularly among younger and non-specialist practitioners. Structured undergraduate curricula, postgraduate modules, and hands-on workshops are urgently needed to bridge this gap and strengthen non-pharmacological approaches to managing paediatric dental fear.

Limitations

This study was underpowered due to a small convenience sample (116 vs. 384). Self-reported responses risk social desirability bias. Attitude measures, though included, were limited to confidence and training adequacy. Additionally, electronic distribution (WhatsApp/email) may have introduced selection bias.

Recommendations

- Replicate with a larger, randomly selected sample across regions
- Incorporate qualitative methods (e.g., interviews) to explore barriers to BMT adoption
- Develop and evaluate interventional training modules for general dentists
- Emphasize evidence-based resources over peer reliance.
- Expand curriculum to cover advanced and culturally tailored BMTs

Ethical Statement

The study was approved by the IRB of Batterjee Medical College (Approval No: BMC/IRB/2023/014). Informed consent was obtained electronically, and anonymity was ensured.

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