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ORIGINAL RESEARCH

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Practice and perception of dental practitioners in the Suva-Nausori area, Fiji on management of paediatric patients with dental anxiety

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Abstract

Dental anxiety in children has been associated with poor oral health outcomes. Behaviour management and psychological interventions have been recognized as effective methods of reducing anxiety in children with positive long-term effects. So far, no information is available on how this issue is managed in the Fijian population. The aim is to investigate the practice and perception of dental practitioners in Suva-Nausori when managing paediatric patients with dental anxiety. A cross-sectional descriptive study was conducted using a questionnaire distributed to dental practitioners in Suva-Nausori area, Fiji. The questionnaire focused on assessment methods for identifying anxious paediatric patients, management approaches, and challenges faced by practitioners. The response rate was 80% (n = 40), with almost an equal distribution between private and public practitioners of 47% and 53% respectively. Observation-based assessment was reported as the most commonly used method for identifying dental anxiety by 79% of participants. Behaviour management techniques, particularly communication and Tell-Show-Do, were widely used by 83% of practitioners. Additionally, 17% utilised both behavioural and pharmacological techniques, with oral sedation being the most common pharmacological method (71%). Local anaesthesia was identified as the most challenging procedure for anxious children. These findings indicate that dental practitioners in the Suva-Nausori area primarily utilise behaviour management techniques and oral sedation to manage dentally anxious children, indicating a limited range of techniques. There is a need for further education and training to ensure that anxious patients receive optimal management, including options such as conscious sedation tailored to individual needs.

Keywords

Behaviour management; Dental anxiety; Paediatric patients; Dental practitioners

1. Introduction

Paediatric dental anxiety is a significant challenge in the field of pediatric dentistry. It is characterized by a state of apprehension, worry or fear related to dental treatment in children. Dental anxiety can lead to avoidance of dental care, poor oral health outcomes and difficulties in providing effective treatment [1]. Research indicates that the prevalence of dental anxiety in children ranges from 9% to 22% [2], leading many patients to seek care at a late stage of disease. It is crucial for dental practitioners to identify these patients and employ appropriate management techniques to reduce their level of anxiety.

To this end, a variety of assessment methods are available, each with its own strengths and limitations. Observation-based assessments, such as the Clinical Anxiety Rating Scale (CARS), Uncooperative Behaviour Rating Scale (BRS), Houpt Scale and Frankl Behaviour Rating Scale (FBRS), allow dental personnel or researchers to directly observe the child's physiological or behavioural responses. While this approach does not require the child to answer questions, which can be advantageous during ongoing treatment, it is limited to observable signs and requires calibration to minimize observer bias. Parent proxy-based assessments, completed through questionnaires, are suitable for younger children who may lack the cognitive ability to self-report, and parents' knowledge of their child's past behaviour can be beneficial. However, parents' own dental anxieties can bias the assessment, underscoring the need for cross-verification with other methods to minimize bias [3].

While clinical observations can provide valuable insights, studies have shown poor to moderate agreement between dentists' and children's ratings of dental anxiety [4]. Reliable self-report scales like the Children's Fear Survey Schedule-Dental Subscale (CFSS-DS), Corah's Dental Anxiety Scale (CDAS), Modified Dental Anxiety Scale (MDAS) and Dental

Fear Survey (DFS) are commonly used to assess children's dental anxiety [3]. For younger children under 9, picture-based scales such as the Venham Picture Test and Facial Image Scale have been found effective. However, these scales may reflect the child's current mood rather than their overall dental anxiety [5].

Effective communication and building trust are crucial in managing paediatric patients with dental anxiety. Behaviour modification techniques such as Tell-Show-Do, where procedures are explained, demonstrated, and then performed, can help reduce anxiety. Distraction techniques, such as music or stories, can shift the child's focus away from the procedure. Systematic desensitization gradually exposes the child to dental treatments from least to most anxiety-inducing. Positive reinforcement, like praise and rewards, encourages good behaviour. In some cases, gentle physical restraint or a hand-over-mouth exercise may help the child relax and comply during examinations. These techniques ensure a positive and effective dental care experience, promoting long-term oral health for children [6].

In severe cases, pharmacological interventions may be necessary. While sedatives like nitrous oxide are commonly used, they should be carefully considered due to potential risks. General anaesthesia is reserved for extreme cases due to its associated risks and costs [7].

This study aimed to analyse the practice and perception of dental practitioners in the Suva-Nausori area when managing paediatric patients with dental anxiety, along with the possible challenges encountered while managing such patients. Fiji's dental healthcare systems for children are multifaceted, with government initiatives, partnerships, and community outreach programs working together to promote oral health awareness and education. Despite progress, Fiji still faces challenges in maintaining good oral health among children. Limited access to regular dental care and a lack of knowledge among caregivers about oral health are significant issues [8].

2. Methods

This cross-sectional descriptive study was conducted in the Suva-Nausori area using a structured questionnaire distributed to eligible participants. The questionnaire focused on the methods dental practitioners use to identify paediatric patients aged 6–12 years with dental anxiety, the management approaches for these patients and the challenges faced by dentists (see **Supplementary material** for complete list of questionnaire items).

2.1 Study setting

The study was conducted across all public and private dental clinics within the Suva-Nausori area.

2.2 Study population

The target population comprised dental practitioners in the Suva-Nausori area. Participants had to be registered dentists under the Medical and Dental Council of Fiji. Excluded were dental interns, dental therapists and unlicensed practitioners according to the Fiji Dental Council.

2.3 Sampling

A convenience sampling method was used. Information on the number of registered dentists practicing in the Suva-Nausori area was obtained from the Fiji Medical and Dental Council to determine the sample size. Initially, 50 dental practitioners were emailed the questionnaire. Follow-up emails were sent every two weeks, and the survey closed six weeks after the initial email acknowledgment. Due to a low response rate, questionnaires were also physically distributed at various dental clinics and collected over 2–6 weeks.

2.4 Method for recruitment of participants

Dental practitioners were initially approached via email to participate in the study. Participation was voluntary, and practitioners received detailed information about the research along with a consent form before the questionnaire.

2.5 Definition of key terms, concepts and variables

- Dependent variables:
  - Criteria used to classify paediatric patients with dental anxiety
  - Management techniques used by dental practitioners
  - Challenges faced by dental practitioners in managing paediatric patients with dental anxiety
- Independent variables—factors such as place of practice, years of practice, gender, ethnicity, age of the dental practitioners.

2.6 Data analysis

The collected data was entered into a Microsoft Excel spreadsheet. Descriptive statistical analysis was conducted using Epi info (Version 3.5.1, Centers for Disease Control and Prevention, Atlanta, GA, USA). The results were presented through bar graphs and tabulations.

3. Results

A total of 40 out of 50 dental practitioners, aged 25 to 68 years, participated in this study. The majority of the participants were between 25 and 35 years old (n = 21, 52%), and 57% had less than 10 years of working experience. The gender distribution was almost equal, with 21 males (52%) and 19 females (48%). In terms of practice location, 19 participants (47%) worked in private dental clinics, while 21 participants (53%) worked in public facilities (Table 1).

From the total respondents, 79% of dental practitioners used observation-based assessment methods to classify a patient as having dental anxiety. Parental proxy-based assessment methods, where parents assess their child's anxiety level, were used by 16% of practitioners. Self-reported scales were the least used method, with only 5% of practitioners employing them. Fig. 1 illustrates the assessment methods most frequently utilised among dental practitioners to classify patients with dental anxiety.

Among the various management strategies used for paediatric patients with dental anxiety, 82% of practitioners relied

TABLE 1. Demographic characteristics of participants.

Characteristic	Percentage	Count
Age (yr)		
25–35	52%	21
36–46	27%	11
47–57	13%	5
58–68	8%	3
Gender		
Male	52%	21
Female	48%	19
Ethnicity		
I-Taukei	25%	10
Fijians of Indian descent	62%	25
Rotumans	5%	2
Others	8%	3
Place of practice		
Private	47%	19
Public	53%	21
Working experience (yr)		
1 to 10	57%	23
11 to 20	32%	13
21 to 30	8%	3
No answer	3%	1

exclusively on behaviour management techniques. Meanwhile, 18% used a combination of behavioural and pharmacological techniques. None of the practitioners used pharmacological management alone, as illustrated in Fig. 2.

The types of behaviour management techniques used by practitioners are reported in Fig. 3. The most frequently used methods were communication and Tell-Show-Do (TSD), each reported by 21% of practitioners. Less frequently employed methods included systemic desensitization, used by 4% of general dentists. Modelling was employed by 8% of the dentists, while physical restraint was used by 9%. Additionally, only one participant reported using a method not listed in the questionnaire, which was negative reinforcement.

Of the 18% of practitioners who used pharmacological methods for managing anxious paediatric patients, 71% reported using oral sedation, while the remaining 29% used general anaesthesia as depicted in Fig. 4. The results also revealed that none of the dentists used nitrous oxide as a pharmacological method of managing anxious paediatric patients.

Table 2 below demonstrates that the most challenging procedures for dentists found when managing anxious patients are administering local anaesthesia and performing dental extractions.

The recommendations provided by dental practitioners to address challenges in managing anxious paediatric patients are diverse and strategic, as outlined in Table 3. A significant portion, comprising 46% of respondents, emphasized the importance of education and training initiatives. These include advising parents on methods to reduce anticipation

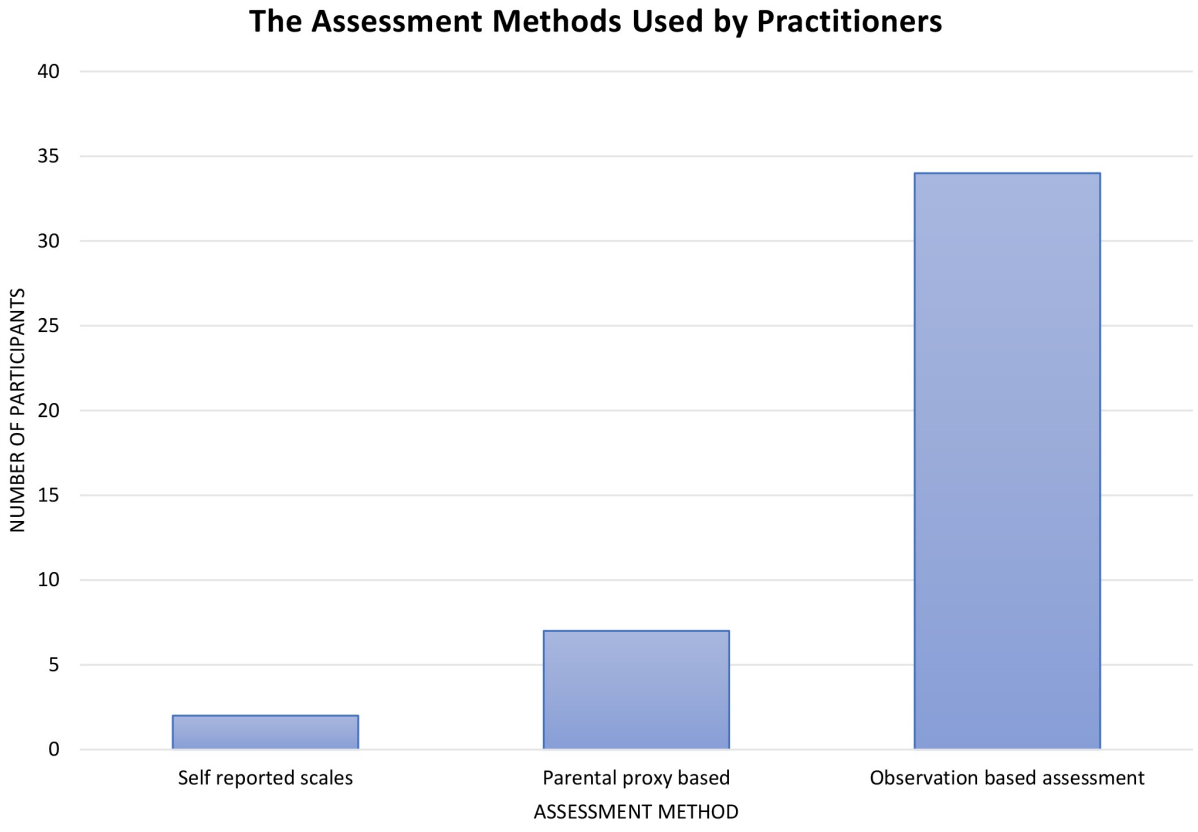

FIGURE 1. The assessment methods used by dental practitioners.

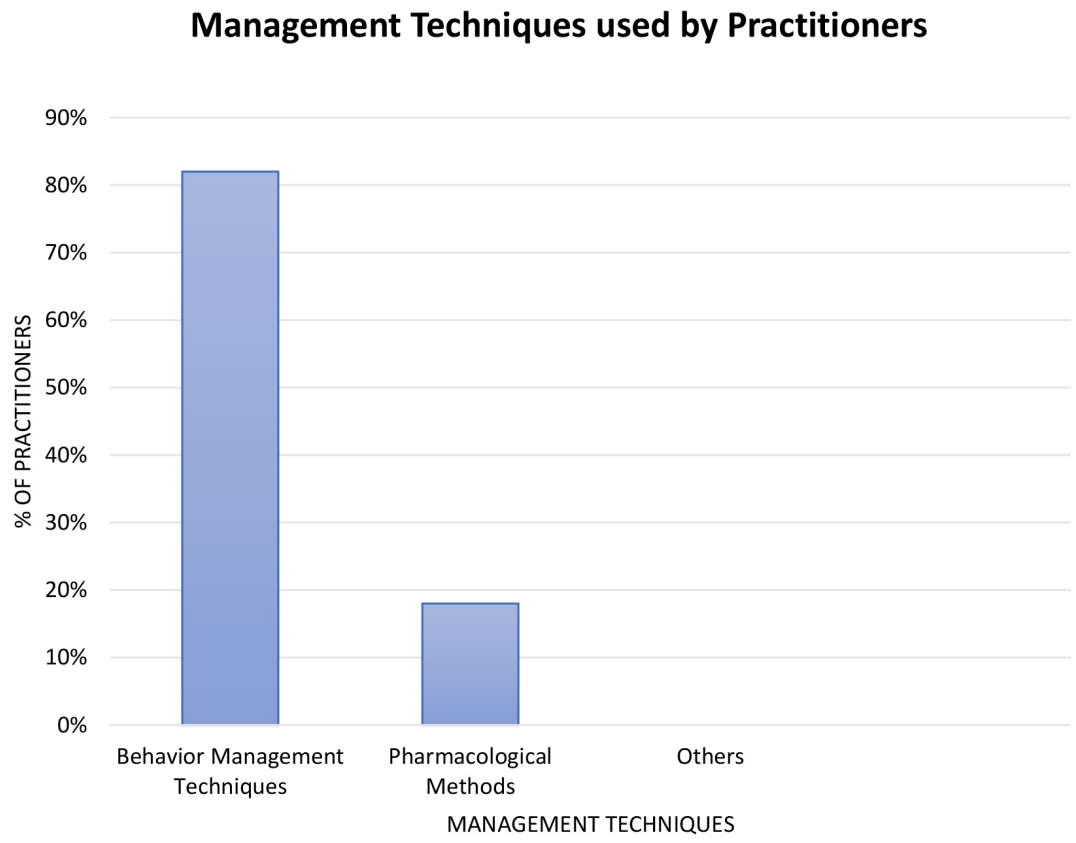

FIGURE 2. Management techniques used by dental practitioners.

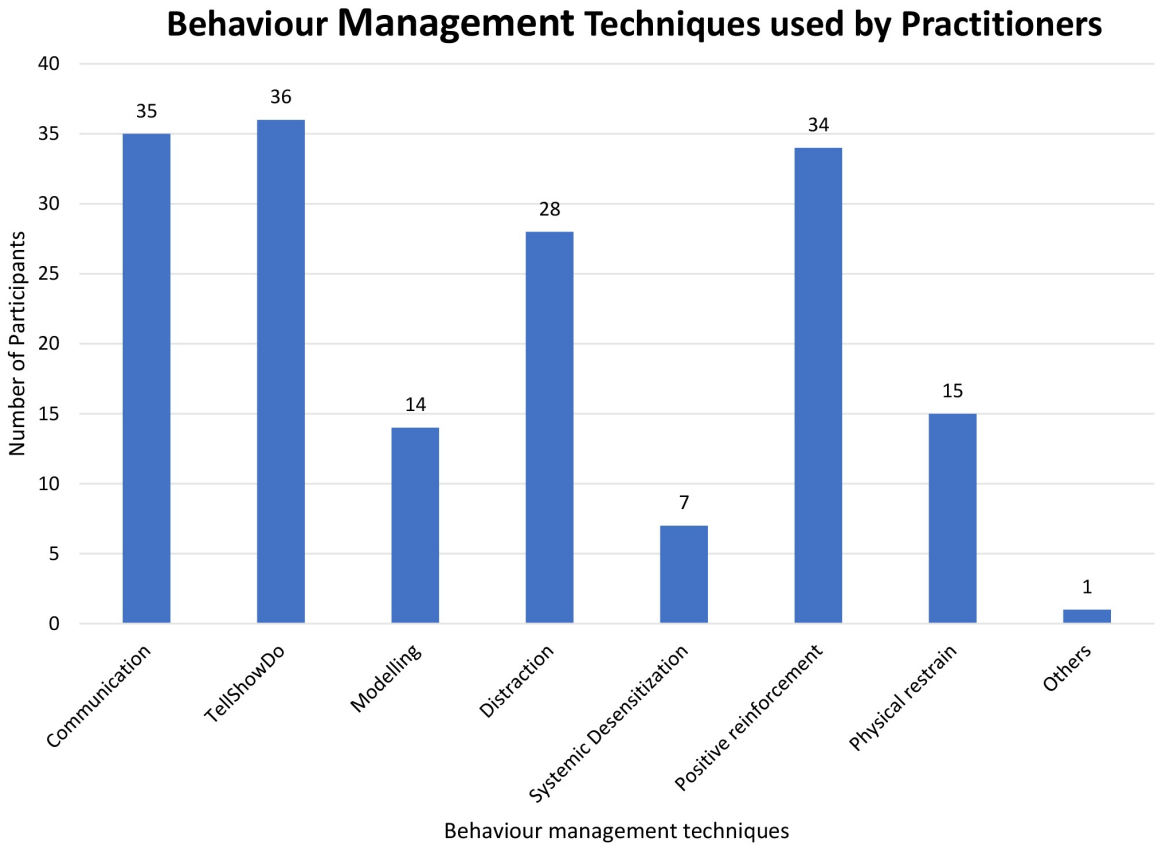

FIGURE 3. Behaviour management techniques used by dental practitioners.

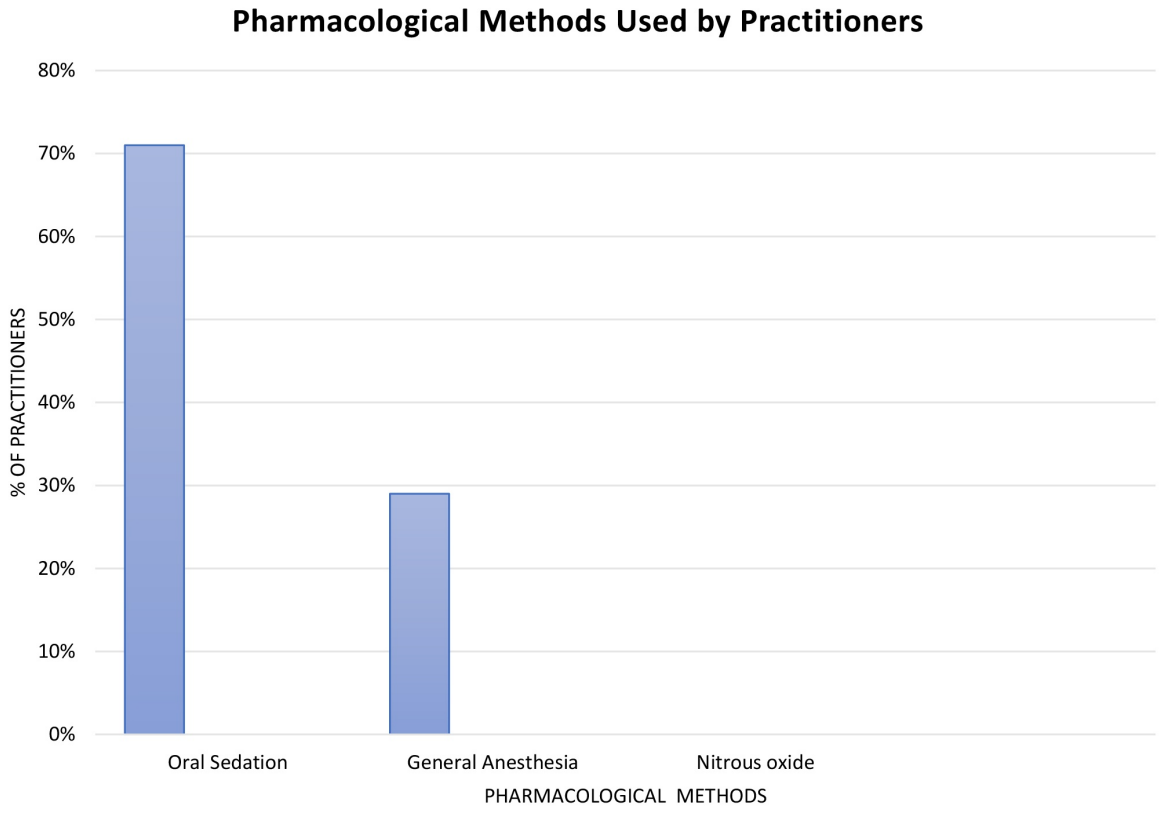

FIGURE 4. Pharmacological methods used by practitioners.

TABLE 2. Challenges encountered by dental practitioners in the dental management of anxious paediatric patients.

Challenging procedures in the management of anxious patients	Frequency (n)	Percentage (%)
Pre-treatment	3	3%
Doing oral examination (OE)	16	13%
Doing scaling	6	5%
Giving local anaesthesia (LA)	36	30%
Doing restorations	20	17%
Doing extractions	34	28%
Others	5	4%

TABLE 3. Recommendations by the practitioners to overcome the challenges.

Recommendations	Frequency (n)	Percentage (%)
Education/training	22	46%
Behaviour management	14	29%
Pharmacological management	10	21%
Other recommendations	2	4%

anxiety, advocating for early introduction of children to dental environments for routine check-ups, and proposing workshops aimed at enhancing the skills of local dentists in managing and preventing dental anxiety. Additionally, 29% of practitioners highlighted the efficacy of behaviour management techniques such as communication, positive reinforcement, and distraction in mitigating anxiety among young patients. Another 21% underscored the need for facility improvements, specifically advocating for increased availability of pharmacological methods like nitrous oxide and general anaesthesia to better cater to extremely anxious paediatric cases. The remaining 4% contributed varied suggestions beyond the questionnaire's scope to further enrich strategies in paediatric dental anxiety management.

4. Discussion

This survey serves as the primary investigation into the attitudes and practices of dentists in the Suva-Nausori area concerning the management and treatment of paediatric patients

with dental anxiety. The results indicate that most participants (79%) depended on observation-based methods for assessing dental anxiety, while a minority (5%) utilized self-report assessments. Research has suggested that self-report assessments may offer more precise estimates compared to relying solely on clinical observation [9]. This disparity underscores the underutilization of self-report tools in regular clinical practice, in line with prior studies that have highlighted their limited adoption beyond research environments [10].

The association between a clinician's assessment of a child's dental anxiety and the child's self-assessment varied from poor to moderate and was absent in highly dentally anxious subgroups [10]. According to Appukuttan[11], only 20% of dentists in the UK incorporated these questionnaires into their practice. This finding was highlighted in a literature review discussing strategies for managing patients with dental anxiety and phobia, emphasizing the low uptake of these tools among dental professionals in the UK. In cases where no assessment technique was employed, dental professionals likely relied on their experience and intuition, commonly referred to as "the clinical eye", to gauge a patient's level of dental anxiety [12].

This information is crucial for developing appropriate management strategies and identifying patients who require extended treatment durations. The majority of respondents (82%) primarily employed behaviour management techniques, with 18% utilizing a combination of pharmacological and non-pharmacological methods.

A study conducted in Sweden examining dentists' attitudes toward dental anxiety management strategies in children and adolescents revealed a prevailing preference for non-pharmacological approaches [13]. This finding aligns with the results of this study, where the majority of dental practitioners (82%) employed non-pharmacological strategies in inpatient treatment. The limited use of pharmacological approaches in paediatric management may be attributed to a lack of knowledge, training and skills in this avenue.

Behaviour management techniques, such as "Tell-Show-Do", were favoured by a majority of dentists in various countries, including Israel and India [14–16]. Effective communication emerged as a prominent behaviour management technique in this study, fostering open dialogues that enhance patient confidence and trust in dental care settings. In addition to communication, pharmacological interventions, such as oral sedation and general anaesthesia, were discussed, with a notable preference for oral sedation among practitioners due to its cost-effectiveness and ease of administration compared to general anaesthesia, which tends to be less accepted due to its invasive nature [17].

In a study by Sarah *et al.* [18], only 12 (6%) of the dental surgeons preferred to use nitrous oxide as a behavioural management technique. In contrast, another study showed that 159 dental surgeons (73%) were completely comfortable using the nitrous oxide sedation method [19]. Despite its routine use in American paediatric dentistry, none of the surveyed dentists in the Suva-Nausori area use nitrous oxide, due to a lack of facilities and training. Therefore, oral sedation remains the primary method of pharmacological behaviour management in these areas.

Challenges in managing anxious paediatric patients, particularly during procedures involving local anaesthesia and dental extractions, highlight the need for tailored approaches to reduce patient distress. These findings align with previous research indicating that more invasive procedures often heighten patient anxiety [20]. Practitioners have recommended educational initiatives for parents to introduce children to dental environments early and provide accurate information to alleviate anticipatory anxiety.

Additionally, training and workshops on paediatric behaviour management, including the use of nitrous oxide and conscious sedation, have been suggested to enhance practitioners' proficiency in this domain. Due to limited knowledge, training, and skills in pharmacological methods related to paediatric behaviour management, dental practitioners also recommended that the dental association conduct training in the use of nitrous oxide and conscious sedation. Specialist courses would be beneficial, as Fiji currently lacks paediatric dentists. Moreover, innovative approaches such as online training packages could help increase access to such courses [21].

Addressing dental anxiety in paediatric patients demands a multifaceted approach encompassing assessment techniques, behaviour management strategies, communication, and ongoing education for both practitioners and parents [22]. By implementing tailored approaches and enhancing training opportunities, dental professionals can enhance the quality of care and patient experience in paediatric dentistry [22].

5. Clinical significance

The clinical significance of this study lies in its implications for improving the management of paediatric patients with dental anxiety or phobia in the Suva-Nausori area of Fiji. Dental anxiety can lead to avoidance of dental care, resulting in poor oral health outcomes. Therefore, understanding how dental practitioners address this issue is crucial for ensuring the delivery of effective and patient-centred care.

By identifying the current practices and perceptions of dental practitioners in managing anxious paediatric patients, the study sheds light on areas where improvements can be made. For instance, the widespread use of behaviour management techniques indicates a recognition of the importance of addressing psychological aspects of dental care. However, the limited utilization of pharmacological techniques suggests potential gaps in providing comprehensive care options for these patients.

The finding that local anaesthesia is challenging for anxious children underscores the need for tailored approaches to address specific barriers to treatment. Improved strategies for administering local anaesthesia, such as the use of distraction techniques or alternative delivery methods, could enhance the overall experience for these patients and facilitate better cooperation during dental procedures.

Furthermore, the study underscores the importance of ongoing education and training for dental practitioners to expand their repertoire of techniques for managing dental anxiety/phobia in paediatric patients. By equipping practitioners with a broader range of skills, including the use of conscious sedation when appropriate, the quality of care provided to

anxious children can be enhanced, ultimately improving their oral health outcomes and overall well-being.

6. Conclusions

The study highlighted the limited use of techniques by practitioners, primarily relying on behaviour management and oral sedation for managing anxious children. The limited range of treatment options was attributed to a lack of education and training in advanced forms of behaviour management. Consequently, the most basic management techniques were frequently employed. This highlights the urgent need for further education and training of dental practitioners in the use of advanced techniques, such as conscious sedation, to ensure the provision of optimal management tailored to the individual needs of paediatric patients. Strengthening education in these areas is crucial for expanding treatment options and enhancing care outcomes in paediatric dentistry.

ABBREVIATIONS

TSD, Tell-Show-Do; OE, oral examination; LA, local anaesthesia.

AVAILABILITY OF DATA AND MATERIALS

The authors confirm that the data supporting the findings of this study are available within the article and its supplementary materials.

AUTHOR CONTRIBUTIONS

NL and KT—designed the research study. NL—performed the research. KT and VN—provided help and advice on analysing the data. NL, KT and VN—wrote the manuscript. All authors contributed to editorial changes in the manuscript. All authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

This study was low-risk, with participants recruited voluntarily and their anonymity maintained. The research followed the standard ethical approval processes at the college and national levels. It was first approved by the College Human Health Research Ethics Committee (CHHREC ID: 249.20), and then by the Fiji National Health Research Ethics Committee.

Confidentiality was prioritized throughout the research. Participants were informed that only the principal investigator and supervisors would have access to the data. To ensure anonymity, participants were identified by codes instead of names. Questionnaires were securely stored separately from other documents.

All ethical standards were upheld to protect participants' rights and privacy.

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This research received no external funding.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found, in the online version, at https://oss.jocpd.com/files/article/1852234913314422784/attachment/Supplementary%20material.docx.

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