SUPPORTING ANXIOUS CHILDREN THROUGH DENTAL CARE

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AIM

The aim of this paper is to augment existing understanding around non-pharmacological behaviour management of children in a dental setting with a focus on Trauma Informed Care.

LEARNING OBJECTIVES

Readers should be able to:

- Discuss the factors contributing to dental anxiety in children.
- State the strategies for engaging children and their guardians in the dental care process.
- Explain the principles of Trauma Informed Care (TIC) and how it can be applied in a dental context to support healing and reduce re-traumatisation.
- Identify non-verbal and behavioural cues indicating increased distress in children and describe techniques for de-escalating distress and maintaining a positive patient-clinician relationship.

LEARNING OUTCOMES

By the end of this article, readers will be able to:

- Explain the relationship between dental anxiety and avoidance of dental care.
- Recognise signs of distress in children during dental consultations and apply appropriate strategies for de-escalation.
- Evaluate their skills to engage both guardians and children effectively for successful interventions in paediatric dentistry.
- Apply the principles of Trauma Informed Care (TIC) with an understanding of its relevance in paediatric dentistry.

Aligned to GDC development outcomes: *A,C,D*

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ABSTRACT

The causes of child dental anxiety are likely to be complex and multi-factorial, including previous medical/dental experience and environmental/situational factors. Dental clinicians working in paediatrics, particularly dental therapists, require the dual skills of engaging both guardians and the child for successful interventions. Should the dental team be successful in providing prevention and chairside management for these children, this could have long lasting dental and psychological benefits.

Background

Dental caries is a serious concern for children within the United Kingdom, most severely affecting those living in deprivation and from minority backgrounds. The Oral Health Survey of five-year-olds 2022 found the prevalence of caries in England to be 29.3% nationally, rising to 38.7% in the Northwest[1]. The interaction between dental caries and anxiety is well-established with children more likely to experience dental anxiety compared to adults[2]. Moderate anxiety affects 63% of 12-year-olds and 54% of 15-year-olds, with self-rated anxiety higher in girls than boys[3].

Dental anxiety

The causes of child dental anxiety are likely to be complex and multi-factorial, including previous medical/dental experiences[4] and environmental/situational factors[5]. The 'vicious cycle' of dental anxiety and avoidance of the dental surgery often prevents engagement with routine care, thereby reducing access[6]. Delayed appointments allow dental caries to progress, therefore when treatment is finally sought, this is likely to be more invasive. Providing treatment to an anxious child in pain can reinforce and perpetuate anxiety if not managed carefully. It is likely that guardians[7] and dental clinicians[8,9] impact on the development and management of support in children developing dental fears. As such, it is vital for dental clinicians to have skills to address dental distress early in the child's dental journey to reduce the chance of this vicious cycle. If this anxiety is not addressed early, it can be carried into adulthood and subsequently impact on lifelong dental health[10].

Dental clinicians working in paediatrics, particularly dental therapists[7], require the dual skills of engaging both guardians and the child for successful interventions[11]. Should the dental team be successful in providing prevention and chairside management for these children, this could have long lasting dental and psychological benefits.

Trauma informed care

Trauma Informed Care (TIC) involves the design and delivery of services to support healing and reduce the chance that engaging with health services is re-traumatising for children[12,13]. TIC is highly relevant in a dental context due to some of the inherent factors which could impact on a child's sense of powerlessness and safety[12,14]. The ideas and suggestions in this paper are informed by TIC as they position child and guardians' reactions in the context of the dental system, thereby encouraging changes in practice by dental clinicians[15].

The aim of this paper is to augment existing understanding around non-pharmacological behaviour management of children in a dental setting with a focus on TIC. The authors represent experience across both paediatric dentistry and dental psychology in tentatively providing suggestions for choosing different interventions to reduce the chance of distress and de-escalate distress if it occurs.

It is important to keep in mind that highly anxious, neurodiverse, or pre-cooperative children may need further input and should be referred onto specialist services appropriately to prevent a negative experience and the development of further anxiety[16].

Linking psychological theory to child dental distress

Figure 1 graphically depicts distress within a dental consultation, showing a process of escalation and de-escalation over time. It suggests strategies that can be used by clinicians aiming to reduce the escalation of emotions, and as a basis to inform clinical decision making around dental anxiety interventions before and during a child's dental visit.

Part One: Approaches to help reduce the development of distress

1. Preparation and information giving

Studies highlight that giving children information preparing them for dental treatment can help to reduce distress and increase engagement[17]. Information is often categorised as either procedural or sensory[18] and can include sending information in appointment letters to detail what to expect, and helpful behaviours or language to use when speaking to the child[19]. This could include links to video walkthroughs of the practice or explaining we will be "counting their teeth".

Sensory information is likely to be most helpful if it explains physical sensations positively, so children do not anticipate unpleasant sensations, such as "you will feel something cool", rather than you will feel a "sharp scratch". Videos of children undergoing examinations or simple treatment (modelling) have also been shown to improve behaviour at initial and subsequent dental visits [19,20]. In line with more technology-driven approaches, utilising virtual reality (VR) has been demonstrated as effective in reducing anxiety preoperatively in children when used as a preparation and distraction tool, and has a significant role in exposure-based acclimatisation[21].

However, other research has found that giving preparation information increases anticipatory anxiety, especially in younger children who are already cautious about visiting the dental surgery[22]. As outlined in Table 1, guardians and children are the best sources to aid clinicians' decisions when enquiring how much preparation information to provide[23]. Furthermore, asking a guardian's perspective can help contain and reassure them regarding their role in the process, reducing their anxiety[24].

A good rapport with patients is key for preventing the escalation of distress. Using age-appropriate vocabulary and humour can be beneficial in developing the patient-

Figure 1: Graph depicting the distress curve and appropriate timings for specific anxiety reduction and soothing strategies.

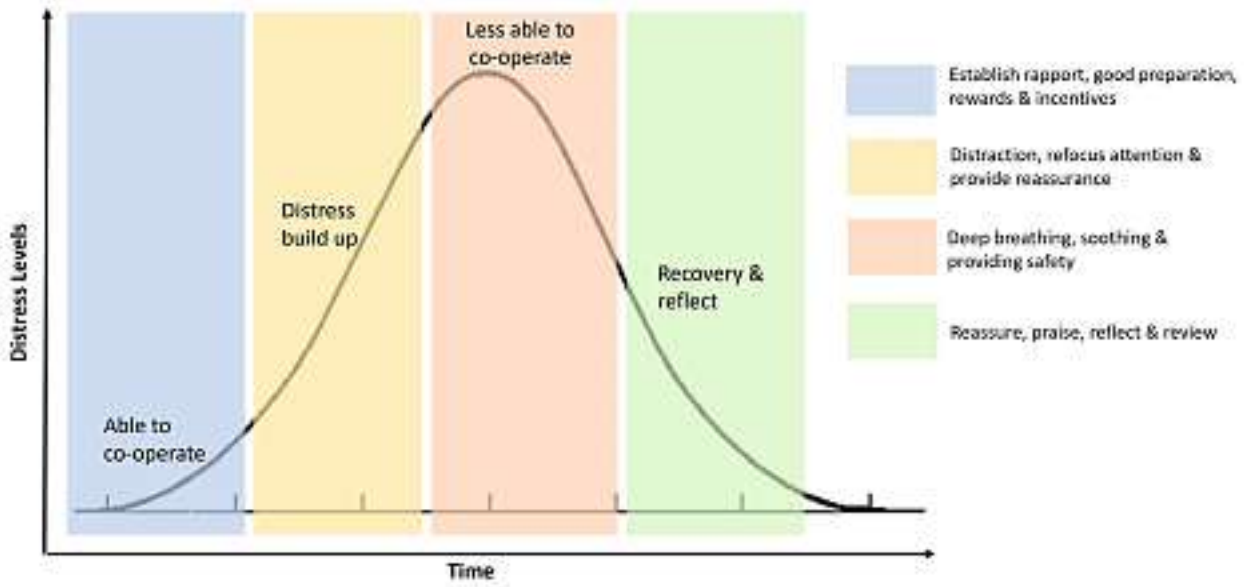

Table 1: Decision-making on information-giving for child patients

	Example questions
Amount of preparation advice to give	• Would you like to know more about what we hope to do today? • When you have been to the dentist before, was it helpful to find out what was going to happen? • Does finding out what we will do make a difference to you?
Learning from previous experience	• When you have been to the dentist before, did they do anything that was helpful? • Did they do anything that was less helpful?
Review at the end	• Is there anything I did today that was helpful? • Is there anything I did you would prefer me to do differently? • What did you do today that helped you do so well?

clinician relationship; simple techniques such as 'peek-a-boo' or guessing games, through to plays on words and jokes for older children[19,25]. Preparation information is also beneficial within the appointment using techniques such as 'Tell Show Do'. Here the procedure is explained in age-appropriate terms, demonstrated on an inanimate object or the patient's hand, before being performed to allow the experience of sensations in a more controlled manner. Children may also benefit from watching in a patient mirror[19].

2. Increasing sense of control

Research demonstrates the importance of helping children to feel in control during medical procedures[26]. This can be achieved by asking children about how they want the consultation to progress (Table 1). Asking this directly may be difficult to answer, therefore, asking about previous relevant experiences can create a helpful template with which to support the child to feel more confident.

The use of stop signals including raising a hand can be practised before the procedure, possibly as part of 'Tell Show Do'. Defined breaks from dental treatment after a set length of time have been shown to reduce less cooperative behaviour[27]. This could involve setting a timer or simply counting out loud. Allowing the child to choose the length of time will increase their autonomy and perception of control. Incorporating other choices can help with this, for example, "do you want to do the left or right today?".

At the end of the consultation, making time to review can help the clinician develop a personalised understanding of the child and family, help with future preparation and increase the child's self-efficacy (Table 1).

3. Praise/Rewards/Incentives

Focus on rewards can be used to help motivate children during treatment before they become emotionally distressed. Rewards can be provided by dental teams and families, but whoever provides this should make verbal rewards behaviourally specific, for example praise for opening wide or staying still as opposed to more generic comments such as "you did really well today"[28]. It should also be given in the moment, as close to the desirable behaviour as possible as part of intermittent reinforcement. It is important to tailor this reward to the child and what they value.

Behavioural shaping, where progressively more desirable behaviours are rewarded and reinforced, can be used over a number of consultations to support a child to engage with dental care[29].

Instead of offering rewards for completing treatment, a contracting approach can be adopted to avoid the dilemma of offering a reward but treatment not being completed. For instance, the development of a fear hierarchy starting with the dental behaviours where the child is most confident and getting progressively more challenging. It is acceptable to pause, or stop, if the child is demonstrating levels of distress that could result in longer-term emotional harm.

Part Two: Approaches when distress is building up/progressing

Emotions, including fear and anxiety, are defined as brief states which include physiological, expressive and subjective experiences. These have multiple functions including the avoidance of pain or harm[30,31]. Research suggests emotional intensity escalates in the context of specific triggers, these can be external such as seeing dental equipment, or internal such as anticipating pain. When someone feels threatened, they experience a high level of emotion which impacts on their ability to listen, think or soothe[32]. Figure 1 indicates alternative strategies for supporting a child may be required if they become distressed. Importantly, research regarding emotions of threat, including anxiety, would suggest that strategies including rational and clear thinking are helpful prior to an escalation of emotion, however, soothing and validating strategies are helpful when emotion is higher[33].

1. Detecting changes in emotion: the build-up

Alongside the strategies mentioned above, it can be helpful to have awareness of non-verbal/behavioural cues to indicate distress (anxiety, fear or disgust)[31]. Table 2 outlines some changes in behaviour that could indicate increased distress. However, it is important to acknowledge individual differences when working with young people, in the context of how they demonstrate specific emotions. For example, some children may feel anxious, but act angry. In line with principles of TIC, talking about any of these changes with a child and their guardians may give the clinician useful feedback and help encourage a shift in communication to better manage distress before it reaches 'crisis point'.

2. Escalation of distress

As clinicians notice increases in distress, they may encourage a change of focus for the child using distraction techniques. Distraction techniques can be very helpful, especially if discussed prior with the family so that the child's preferred distraction resources are brought to the appointment and

Table 2: Non-verbal cues as they relate to increase in negative emotions[34]

Emotion	Typical behaviours
Anxiety / Fear	• Wide eyes • Eyebrows raised and pulled together • Raised upper eyelids, tensed lower eyelids • Jaw dropped open and lips stretched horizontally backwards • Hand wringing
Disgust	• Eyes screwed up • Lowered eyebrows • Wrinkling on the side and bridge of the nose • Upper lip is raised into an inverted 'U' • Lower lip raised and slightly protruding

are easily available. Audio and audio-visual distraction techniques, as detailed in Table 3, have been demonstrated as effective in reducing distress during dental treatment, are clinically feasible, safe and do not introduce significant training needs.

Awareness of the accompanying adult's reactions to their child's escalating distress can be beneficial to the clinician[29]. Guardians may be attuned to previous difficult experiences, and this could influence their reactions in the moment. The use of reassurance and modelling to both parties may help. For example, offering the child a break, engaging the guardians and child in a conversation or being curious about whether there is anything the guardians or child would find helpful at this moment. Noticing how children respond to these distractions can guide the clinician in whether they can proceed. If the child appears able to 'make sense' of the discussion, the clinician may want to return to preparatory information.

3. High distress/escalated emotions

If distress increases, these earlier interventions may become less effective. As symptoms of distress become physiological, it is helpful to use interventions that target physiological arousal. Strategies used should be tailored to the child. Therefore, we recommend asking guardians what soothes and de-escalates increasing distress.

Unlike adults, children typically express emotion behaviourally. Therefore, clinicians can identify increases in anxiety through behaviours such as becoming tearful, irritable, or 'clingy', stomach and/or headaches. Deep breathing exercises, such as diaphragmatic breathing could be beneficial, but can be abstract concepts for children. Therefore, if this is the preferred technique, it can be tailored to meet the cognitive needs of the young person; for example, "hot chocolate breaths" and "balloon belly breathing" use more developmentally appropriate language and concepts[37,38].

Table 3: Examples of audio and audio-visual distraction techniques[35,36]

Type of Distraction	Examples of Distractions
Audio	• Listening to music; to include headphones to allow a deeper immersion • Listening to stories
Audio-visual	• VR Technology • Watching cartoons, or other videos such as YouTube videos

Integrating relaxation techniques may be more appropriate, considering the child's preference. This could include progressive muscle relaxation, guided visual relaxation and safe place imagery. Visual imagery is a useful technique in children as they often have a more active imagination[38]. It is an easy way to tailor approaches to the child by incorporating the experiences they enjoy most such as playing with a pet or visiting a specific location[19]. It may be preferential for children who struggle with nasal breathing, as difficulties breathing through one's nose during deep breathing exercises can increase anxiety.

Part Three: Approaches to recovery and reflection

It is helpful for clinicians to be assured that feelings of distress and anxiety return to baseline levels, as demonstrated in Figure 1. Regardless of the dental outcome, time should be given to allow the child's and guardian's emotions to de-escalate; on a neuropsychological level, this would mean that their threat system becomes less triggered, allowing them to be able to think more clearly again[22]. Clinicians can allow the child and guardian to reflect on this experience by using questions mentioned in Table 1.

Considering our language and labels is important when asking families any questions, and when having discussions about the child's experiences in the dental chair. For example, saying "they are an anxious person", or "they never do what they are told" is negative. Putting the child's emotional reactions into context of what has happened that day may be more beneficial, such as rephrasing to "today you noticed feeling nervous, what made that worse?", or "today we agreed to stop, what do you think about trying again next time?".

Conclusions

The preceding discussion demonstrates that there is an array of non-pharmacological techniques which can be utilised to manage varying levels of paediatric distress in the dental setting. Ideally, these approaches should be integrated into a broad and comprehensive approach to patient management. Children demonstrating higher levels of distress may need more time and may require the dental team to utilise a combination of techniques and preparation to manage their distress. Of course, what works for one child may not work for another. Therefore, there is a need for flexibility when dealing with distressed children due to their unique individual needs and historical experiences.

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