



Distraction: An innovative approach for managing anxious pediatric dental patients

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Abstract

Behavior management is widely agreed to be a key factor in the care of children in pediatric dentistry. The American Academy of Pediatric Dentistry had outlined behavior management methods including voice control, tell-show-do, positive reinforcement, distraction and non-verbal communication, hand-over-mouth (HOM) technique, physical restraint and pharmacological interventions such as conscious sedation, nitrous oxide, and general anesthesia. Although, traditional techniques may be successful but the attitude of parents and dental professionals toward these techniques is changing. Nowadays non aversive techniques like distraction are becoming more popular. Distraction is an easily utilized method of reducing a patient's apprehension during the occurrence of uncomfortable sensations. Present review of literature discusses the various distraction tools available to manage anxious pediatric dental patients.

Keywords: pediatric dental patient, behaviour management, distraction

Introduction

"Although operative dentistry may be perfect, the appointment is a failure if a child departs in tears." (McElory, 1895) Dental anxiety among pediatric patients is a great challenge posed to pedodontist in everyday dental practice. The child's uncooperative behavior may hold down the effective delivery of dental care that may compromise the quality of dental treatment. Behavior management of the pediatric patient is an essential component of pediatric dentistry. Child who is not able to co-operate, the pediatric dentist has to rely on behavior management techniques as alternative to communicative management ^[1].

Behavior management is widely agreed to be a key factor in the care of children in pediatric dentistry. Indeed, if a child's behavior in the dental office cannot be managed then it is difficult to carry out any dental treatment that is needed. Behavior management is therefore one of the corner Stone's of the pediatric dental care ^[2]. The American Academy of Pediatric Dentistry had outlined various behavior management methods for uncooperative children that includes non-verbal communication, tell-show-do, modeling, positive reinforcement, voice control, distraction and hand-over-mouth (HOM) technique, physical restraint and pharmacological behaviour management technique such as conscious sedation, and general anesthesia ^[3]. Even though, conventional techniques are successful but the attitude of parents and dental professionals toward these techniques is changing. For example, immobilization in a papoose board, although effective, has been shown to be

unacceptable among a majority of patients. Regarding the pharmacological method of management parents hesitate because of the medical risk. So present trend advocates the use of non-aversive behavior management techniques which may be equally effective and more acceptable to parents, patients and practitioners ^[4]. These days' non aversive techniques like distraction are becoming trendier. Distraction is an easily utilized method of reducing a patient's apprehension during the occurrence of uncomfortable sensations. "Distraction" is a tactic designed to turn away child's attention away from their current behavior to focus their interest in something else ^[4, 5]. Present review of literature discusses the various distraction tools available to Manage anxious pediatric dental patients.

Types of distraction technique

Distraction techniques can be grouped into two main categories: physical methods and mental method. Both distraction techniques are equally effective and can be employed separately or in combination to other behavior management technique. Physical method includes cheek jiggling and leg rising. Other method include listening the music (songs, nursery rhyme, instrumental music) or recorded books through ear phone, playing video games, watching cartoon movies, or other recorded programs on monitors (laptop/mobile) or specially constructed glasses, rubbing the cheek of the patient or massaging the gums (during administration of local anesthesia) ^[6]. Mental method of distraction includes various mental exercises that

engage the child while the dentist is performing stressful parts of the procedure that includes asking the patient to count backward to themselves from hundred by threes, then fours, saying the alphabet backwards, solving mathematical long division or multiplication problems in head, or thinking about different event such as holidays or birthday celebrations ^[6].

Mechanism of distraction

Mode of action of distraction is based on the assumption that pain perception has a large psychological component in that the amount of attention directed to the noxious stimuli modulates the perceived pain. An individual should concentrate on the painful stimuli in order to perceive pain; consequently, perception of pain decreases when a person's attention is distracted away from the painful stimulus. Gate control theory suggested by Melzack KD and Wall JM (1965) simply explains that; distraction through the stimulation of the larger diameter type A and type B nerve fibers in a specified area using appropriate pressure or vibration, decreasing the perception of pain by closing a neural gate to nociceptive signals ^[7].

Different distraction technique used in management of anxious pediatric dental patients

- 1. Audio distraction:** Audio distraction (AD) is a non-aversive distraction technique in which patients listen to music (Songs, nursery rhyme) or stories during a stressful. AD reduce dental anxiety by two reasons. First, a child listening to music will tend to close his eyes to concentrate on the audio presentation thus screening out the display of dental operator. Second, the sound of music will get rid of unpleasant sounds of dental hand piece and these two advantages together with the effect of music will offer relaxation and allow the pedodontist to effectively manage the anxious patient. Jindal R *et al.* (2011) evaluated the efficacy of music distraction and found it very effective to reduce the level of anxiety during the invasive dental procedures ^[8].
- 2. Audiovisual distraction:** Audiovisual distraction (AVD) is a promising technique that offers an added non pharmacological mode of behavior management conceived to diminish the unpleasantness often associated with dental procedures in children. AVD is a powerful distraction tool because it takes control in an enjoyable way over two types of sensations, hearing and visual. At the same time it succeeds in partially isolating the patient from the sounds and the sight of the unfriendly dental environment. Prabhakar AR *et al.* (2007) compared the efficacy of audio and audiovisual distraction and found audiovisual distraction to be more effective than audio distraction ^[5].
- 3. Virtual reality distraction:** VR is one of the most recent distraction tool utilized in pediatric dentistry. The VR refers to a human-computer interface that enables the user to interact dynamically with a computer generated environment. VR uses sophisticated system such as head mounted eyeglasses, wide field of view, and three dimensional head mounted displays (HMD). This application may be superior to traditional distraction because it offers more immersive image due to the occlusive headsets that projects the image right in front of the eyes of the user

and depending on the model used, block out real world (visual, auditory or both) stimuli. Panda *et al.* (2017) evaluated the efficacy of virtual reality distraction technique in pain perception during LA administration in children and found it very effective ^[9]

- 4. Witaul distraction technique:** The WITAUL (Writing in the air using leg) technique is a novel distraction technique devised by Kamath PS *et al.* (2013). This technique involves lifting the right leg and using it to write in the air. Even though what is written with the leg is of no significance, the author has often chosen to inform the child to write his/her name, to make it appears more personalized. The WITAUL technique appears to be a simple and effective distraction tool and can be routinely used during administration of local anesthesia in pediatric dental patients ^[10].
- 5. Eye moment distraction:** Tirupathi S *et al.* (2019) introduced eye moment distraction technique to manage anxious pediatric patient. In this technique children were asked to close their eyes and perform deep breathing followed by rotation of eyes in alternative clockwise and anti-clockwise directions. The children were instructed to count the number of rotations with their fingers. Author found Eye movement distraction as a form of distraction can be used effectively in reducing the anxiety associated dental invasive procedure.
- 6. Video game distraction:** Video game (VG) playing has become very common activity in children. Children may be so occupied in playing VGs that they may become unaware to their surroundings or forget about verbal and tactile stimuli ^[12].
- 7. Stress ball compression:** In this technique patient are a then instructed to hold the stress ball in hand and squeeze it whenever they feel anxious or when they feel any discomfort during the treatment. Holding a stress ball has been found to reduce both pain and anxiety in patients undergoing for dental treatment. Furthermore, squeezing a stress ball during the treatment increase feelings of empowerment, given that patients have direct control over the object, which in turn may have a positive effect on anxiety and patient satisfaction without interfering with the dental procedure. Holding a stress ball is a safe, widely accessible, and inexpensive technique that may aid in decreasing patients anxiety related to treatment ^[13].

Conclusion

Behavior management is widely agreed to be a key factor in the care of children in Pediatric Dentistry. AAPD has outlined various behavior management techniques such as voice control, tell-show-do, positive reinforcement, distraction and non-verbal communication, hand-over-mouth (HOM) technique, physical restraint and pharmacological interventions such as conscious sedation. These days' non aversive techniques like distraction are becoming trendier.

Distraction is an easily utilized method of reducing a patient's apprehension during the occurrence of uncomfortable sensations.

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