LUPINE PUBLISHERS

Interventions in Pediatric Dentistry Open Access Journal

DOI: 10.32474/IPDOAJ.2021.05.000220

ISSN: 2637-6636

Review Article

Brain Over Biceps- Say No to Restraints

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Received: February 04, 2021 **Published:** February 15, 2021

Introduction

Dental fear and anxiety lead to major obstacles and undesirable distresses such as avoidance of dental treatment [1]. Anxiety associated with the thought of visiting the dentist for preventive care and over dental procedures is referred to as dental anxiety. Fear is a reaction to a known or perceived threat or danger. It leads to a fight-or-flight situation. Dental fear is a reaction to threatening stimuli in dental situations. Children often are not able to deal with the threatening dental stimuli which manifest as behaviour management problems to the dentist.1 Both dental anxiety and fear evoke physical, cognitive, emotional, and behavioral responses in an individual [2]. Reduced cooperation and requirement of greater treatment time and resources makes the treatment of anxious patients stressful for the dentist. The pediatric dental professionals desire to treat their patients in an anxiety-free environment to achieve which various behavior management techniques have to be implemented.1 Behavior management in pediatric patient can be achieved by two techniques- either by pharmacological interventions or by psychotherapeutic interventions. Psychotherapeutic interventions are either behaviorally or cognitively oriented2. Blinkhorn et al. stated that, behavioural techniques though are more time-consuming, are more specific and can be customized for the psychological needs of the child [3]. The behavioural management approach is largely based on principles of cognitive-behavioural therapy, a widespread and important method used in psychology and psychiatry, among children as well as adult patients. This approach aims at behaviour modification and sometimes – depending on a child's age – modification of cognitions, or in other words, thoughts, and ideas [4]. Behavior-modification therapies involve changing unacceptable behaviors through learning, relaxation, distraction, desensitization, and modeling. The practitioner should aim at alleviating the anxiety and fear in such a way that these patients are positively motivated on a long-term basis for future dental visits [2]. This review gives an overview of various behavior management techniques practiced by pediatric dentists to manage fearful and anxious children.

Tell Show Do

It was introduced by Addelston in 1959. Here the pediatric patient is familiarized with the dental environment , equipments and the procedure to be performed on them using simulators to reduce the level of their anxiety [5]. There are three steps in TSD hierarchy: Tell component is the basic explanation given to the child about the procedure to be performed in a language appropriate to the child's cognitive development level. Show step involves demonstrating the procedure utilizing tactile sensation and as many other sensory modalities as possible. Do step involves performing the procedure on the child without further delay [6]. This technique has the ability to reduce anticipatory anxiety in cases of emergency pediatric patients and these findings are also supported by the work of Koeningsberg and Johnson as well as Greenbaum et al who reported that the child's anxiety level fell if their uncertainty had been reduced using TSD technique. Blinkhorn et al. stated that TSD should be the main stay for all pediatric patients especially when acclimatizing them to a new dental situation [3].

Modeling

One of the most commonly used behavior management technique, based on "the social learning theory by Albert Bandura" in 1969 [7]. Modeling relies on the theory that behaviors can be learned from observing and imitating others and it benefits 4–9-year-old children the most when introducing them to the dental environment or to new dental procedures [4,8,9]. Once the

child observes a suitable model, he can learn complex behavior patterns that can help him cope and approach dental treatment without fear [4]. It can be performed in two ways : live or filmed [10]. The use of an appropriate model is critical to success, as it is most effective when models are of similar age or are perceived to have prestige or similar to the child, exhibit the desired behavior with minimal anxiety [4,8,11,12].

Distraction

This is the psychological procedure of diverting the patient's attention from any threatening stimuli . According to Corah and Lahmann, visual and auditory stimuli can be useful in modifying behavior, particularly in patients mild or moderate traits of anxiety in the dental chair. These distractions can be used in the waiting area or during the dental procedure [13]. These techniques aim to engage child's attention away from unpleasant stimuli, which help in managing their procedural anxiety, distress and pain and promoting more positive behavior pattern [1]. According to Filcheck et al., the display of attention-grabbing videotaped material had an effect in distracting the children from the fearful stimuli and that it was considered as one of the most attractive methods for modifying behavior during treatment [14]. According to Prabhakar et al the use of AV distraction during dental treatment was more effective in managing the children than using audio distraction only [15]. Urvi Shah and Rupinder Bhatia concluded that both AV and TPD may be considered a good alternative method in management of anxious pediatric patients in dental clinic and are worth practicing. Audiovisual eyeglasses also become a technical obstacle at times, limiting the access to child's mouth. Efforts to ensure correct positioning of the eyeglasses hampers accessibility to the teeth [1].

Magic Tricks

Magic tricks address the right hemisphere of brain without allowing mediation through the left hemisphere which is associated with rationality and analysis. For some children magic can be challenging to their intellect (left hemisphere) and may awaken their curiosity . Here the dentist is perceived as an ally-a playful and approachable figure who quickly draws the attention of the child away from dental situation. The most common trick performed is making objects and people disappear. It is a very useful technique in dealing with strong willed behavior in dental operatory. According to B. Peretz and G. Gluck , magic trick helps in bringing the child into the dental chair and enables the dentist to take radiographs more easily [16].

Changing Control / Temporary Escape

It allows a patient to have some degree of control over their dental situation and enables them to communicate when they are in pain and require rest and wants the dentist to stop [17]. Raising of hand for stop signal is a common way of doing it [6]. Enhancing control incorporates an empathetic approach in recognizing the need for escape and acknowledging the emotions and perspective of the child [18]. Small cohort studies have found that taking regular breaks in treatment results in less reported pain from patients and a reduction in disruptive behavior during treatment [19].

Systematic Desensitization

It aims to reduce anxiety through a gradual presentation of anxiety or fear inducing stimuli while the child is either in a relaxed state or in the presence of a neutral or positive stimuli, thus modifying child's response [4,20]. The four steps involved in systematic desensitization are:

a) Identifying the problem and its history.

b) Introducing relaxation techniques.

c) Creating a ranked inventory of fear or anxiety inducing stimuli.

d) Exposing the patient to stimuli from the inventory while practicing relaxation techniques.

It is of importance that the dentist doesn't progress to the next stimuli unless the behavior has improved and is either neutral or relaxed towards the prior stimuli [20]. This method is highly beneficial for the patient but is not always considered as a cost-effective use of time and need a psychologist to teach relaxation techniques and address the origin of specific fears.6

Tell Play Do

In TSD technique, the dentist uses the dental equipments for demonstrating the procedure to the child, in TPD rather than explaining , demonstrating, or observing a model, the child is made to play with the dental imitating instrument toys, and this provides a more explanatory concept. With this concept TSD was modified into TPD using the theory of "learning by doing" [10]. According to Urvi Shah and Rupinder Bhatia, TPD is equally effective as AV distraction technique to control 4-7 years old children's anxiety and to achieve cooperative behavior during dental treatment [1].

Voice Control and Other Non- Verbal Communication

Pediatric patients in the preoperational age group do not have a good command and understanding of verbal communication and are acutely responsive towards non-verbal communication, commands, and voice control. They rely on nonverbal cues, changing facial expressions and body language [11,17,21]. A gentle touch on the shoulder can relax and reassure a child more than verbal communication , facial expression when used with voice control are critical to communication of message and avoidance of aversive behaviors [12,21,22].Voice control is modulation of tone, volume, pace, and pitch of voice to control and guide behavior. It

can suppress adverse or disruptive behavior effectively within two seconds and last upto two minutes, whereas the use of soft tones and cadences has the ability to relax a patient and reduce anxiety [23].

Relaxation Training

Relaxation training can be useful for reducing children's anxiety in anticipation of and during procedures. The relaxation techniques are based on the hypothesis that a person cannot be anxious at the same time as they are physically relaxed [24]. When regularly practiced it not only lowers stress and anxiety levels but also enables an individual to cope with the symptoms of anxiety. This can be achieved by both deep breathing and muscle relaxation [2]. Deep breathing has been found to be efficacious for reducing children's pain behaviors and self-report of pain. Teaching deep and controlled breathing is fairly straightforward and can be done in a matter of minutes. It is easier to accomplish these breathing techniques if children use imaginative cues, such as picturing themselves blowing up a big balloon. Children can also be engaged in blowing bubbles or a pinwheel. The bubble breath exercise is a deep breathing exercise that has been used as a distraction strategy to manage pain in very young children [25,26]. Relaxation training also includes teaching children to engage in progressive relaxation of muscle groups [25]. Multiple relaxation techniques have been proposed, such as Ost's applied relaxation technique, Jacobsen's progressive muscular relaxation, functional relaxation, etc. [2] In most of the techniques, the child begins with the toes and methodically moves up the body, which allows children to control their own body and to notice the difference between tightened and relaxed muscles [25].

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DOI: 10.32474/IPDOAJ.2021.05.000220