

Behavior Guidance in Pediatric Dentistry - A Review

Review Article

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Abstract

There are many behavior guidance techniques used in pediatric dentistry which can be used separately or combined, the main purpose of these techniques is to help the pediatric patients to accept the dental procedures, and to feel comfortable and satisfied about it. Although some of these techniques seem intuitive and may be used offhandedly by untrained dentists, consciously practicing them can help develop skills with children.

The dentist should formulate a behavior guidance plan for the total patient's comfort which compatibles with child personality and treatment plan.

The review concentrates on the behavior Guidance techniques , classifications ,alternatives, and mechanisms.

Introduction

For some pediatric patients, dental treatment represents an unwanted event, and generally involves pain, fear, and anxiety [1]. The techniques that guide behavior and reduce anxiety are very important for achieving the safe and effective treatment [2].

It is important for dentist to gain familiarity with his pediatric patient before treatment, which helps improving the child's experience. At least the dentist should ask about previous dental visits and the child's behavior at these visits. Rejection behavior and dental anxiety in the dental situation are significantly associated with the previous traumatic experiences and previous extraction [3, 4].

The behavior guidance is not a process involves only the dentist and the child, but it is systematic techniques in which the success depends on the dentist's ability to communicate with parents, child, and staff [5].

The dentist needs experience and training to choose the most appropriate technique for each child, according to his fears, personality and previous experiences, there are several questionnaires and surveys can helpgathering information about the child fear, anxiety, and temperament, but their clinical efficacy is still undefined.

A simple facial image scale has shown a validity in determining the dental anxiety [6]. The dental subset of the Children's Fear Survey Schedule has been used to determine the younger children's fears [7], and the Emotionality, Activity, and Sociability (EAS) Temperament Survey can define the temperament types that more prone to distress, particularly shyness [8]. Also watching child actions in the waiting room, especially his/her interact with parents, and respond to dental personnel can give extra information [9, 10].

The dentist's appearance should be neat, and no need to change the traditional white coat, because some studies showed that parents and children prefer it [11, 12], In addition, personal protective equipments had not been shown to increase children fear [13].

Most behavior guidance techniques have been listed in AAPD guidelines, and classified to basic and advanced techniques [2]. According to the AAPD recommendations the communication techniques don't require any specific consent, while any others require informed consent from parents or legal guardian before treatment beginning, which must be documented in the patient's record [2].

Basic Behavior Guidance Techniques

Communication and Communicative Guidance

The communication represents the foundation for entire basic

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behavior guidance techniques, all requests and commands have to be literal, direct, brief, and suitable for the child's level of comprehension [14], the dentist must avoid "Don't" commands, especially for toddlers and preschoolers because of lack of development in language processing skills. These commands may motivate unwanted, negative, non-cooperative behavior [15].

To achieve successful cooperation, the dentist should find open lines of communication with the child, keeping them all over the appointment [16], the directive communicating with children requires a relaxed tone of voice, without any extended explanations which are ineffective [17].

Tell-Show-Do (TSD)

(TSD) is one of the most popular behavior management techniques [16], the patient in which is introduced to the dental office as a non-threatening environment in a way that can be understood. First the child is told about the procedure and instrument in a child-friendly manner. For example, the curing light may be called a "Flashlight." Next the child is allowed to see, touch, or smell the material or instrument, Finally, the child undergoes the procedure. This technique is recommended with children capable of communication [18, 19].

Positive Reinforcement

Positive reinforcement is a way to promote positive behavior by rewards, and it is universally accepted. Social positive reinforcement is most effective when it concentrates on the cooperative behavior, such as "Thank you for sitting so still and opening your mouth so wide." Like this focused comment would motivate the child to continue the wanted behavior [16].

Nonverbal Behavior Guidance

It is the technique that depends on reinforcement and guidance of behavior by appropriate contact, facial expressions, body language, and posture [2]. The attentive practitioner can use this communication form to help shape ideal behavior in the child [22]. Eye contact, smiling, and an upbeat tone of voice convey to a child that the dentist is confident that the child will enjoy the visit. A practitioner must remember that personal protective equipment (PPE) like the medical mask and eye protection may hide the dentist's facial expressions and should take off (PPE) when welcoming the child. Children between 7 and 10 years who were patted on the shoulder showed less fidgeting behavior than the children who didn't receive this touch; they also reported more acceptance of the visit [24]. Very young children may misinterpret nonverbal cues, a study reported that the 3-year patients were significantly less accurate than (6-9) year patients at correctly identifying emotions related to facial expressions, in addition, 3-year patients were more likely to confuse happy and angry for sad [25].

Distraction

Among all the behavior guidance techniques in pediatric dentistry, distraction has the most research that supports its effectiveness. A Cochrane review of psychological interventions for needle-related procedural pain in children found strong evidence supporting distraction [26]. Conversation is the basic form of distraction, and physical distraction can be useful like asking a child to rotate his

feet during the injection [16, 22]. The dentist may enlist the assistants or parents in distracting the patient, either by storytelling or playing a game, there is a study used posters and stories by the auxiliary and found decreases in disruptive and anxious behavior [27]. There are studies that tested the audio-visual devices such as wrap-around eyewear and reports that are effective in promoting cooperative behavior [28-30], may success of these types of devices due to the ability to block out upsetting stimuli.

Voice Control

Voice control is a means that the dentist in which modulates voice tone and/or volume to gain the patient's attention and cooperation. In voice control, commands should be firm with facial expression mirroring the message [31]. Although voice control can be effective at normal volume, (Greenbaum et al) found that the loud voice was most effective at reducing disruptiveness [32].

Positive Pre visit Imagery

A new technique added to the AAPD guidelines [2]. This technique involves showing children positive images of dentistry before dental visit [33]. Two researches have shown that exposing children to positive images about dentistry significantly minimized anxiety compared to neutral pictures [33, 34] while another study found no significant difference [35].

Direct Observation

Direct observation depends on modeling concept and social learning by allowing the child to observe a cooperative child patient undergoing dental treatment [2]. Modeling is better to use with children who had no previous dental experience [36]. The observation could be live or by video display, Melamed et al. found significantly less negative behavior when children watched a video of interested child during dental appointment and is rewarded [37, 38].

Parental Presence/Absence

The child's desire for parental presence may become a significant factor for behavior management. For young children aged 41-49 months it is not recommended to separate them from their parents [39, 40]. According to Kamp et al. the separation got rid of several behavioral problems, because excluding the parent allows the dentist to develop a rapport with the child without any interference [41]. During initial visits child should not be separated from parents as their presence may help in the prediction of a future child's behavior [42].

Current trends appear to emerge in the direction of the growing desire of pediatric dentists to permit parents' presence for all their child visits [43].

Memory Restructuring

Memory restructuring has been suggested as a technique to prevent fear and anxiety after an aversive dental experience [44]. This technique has four specific elements: visual reminder, verbalization, concrete examples, and the sense of accomplishment [16, 44]. Pickrell et al. in a study of 6-9 year patients, found this technique improved child behavior and changed negative memories [44].

Nitrous Oxide Sedation

(N₂O/O₂) sedation is inhaled pharmacological technique improves child behavior that have mild to moderately anxious. It is important to use N₂O/O₂ accompanying with communicative behavior guidance techniques such as TSD, positive reinforcement, and distraction [45]. Nelson et al. found that children with high effortful control were more successfully sedated with nitrous oxide [46], usually N₂O/O₂ is easily accepted by parents [47].

Alternative Communicative Techniques

Escape

Typically escape is the cessation of action in the mouth cavity, without getting up from the chair, there are two types of escape; contingent and noncontingent [16]. The most used form is "If you can stay still till I count to 10, we can take a break. Allen et al. have demonstrated success with this procedure in preschool-aged disruptive children [48, 49].

Desensitization

Desensitization is exposure to fear-invoking stimuli in a progressive manner, starting with the least disturbing [50]. Patients' self-identify their fears, are taught relaxation techniques, and are gradually exposed to the situations that they identify, this technique is effective long term in reducing dental fear [51, 52].

Deferred Treatment

An often overlooked alternative is to simply defer treatment. When a patient's behavior represents an obstacle to effective and safe care, with no emergency needs, deferring appointment would be valid alternative [2].

Advanced Behavior Guidance Techniques

Sometimes the basic behavior guidance techniques are not enough to achieve perfect, safe dental care. This may be due to the young age of the child, special needs, excessive defiance, or extreme fear. In these cases it is necessary to engage the parents to discuss the possible alternatives of advanced behavior guidance so that they can make an informed decision.

Protective Stabilization

Protective Stabilization is defined as "any manual method, physical or mechanical device, material, or equipment that immobilizes or reduces the ability of a patient to move his / her arms, legs, body, or head freely" [53]. It is used to avoid injuries during dental procedures, and classified to active and passive [54]. In the active type, the parent, dentist, or assistant helps stabilize the child patient, the active stabilization is typically used for short periods especially when the unexpected disruptive behavior occurs [55]. The passive stabilization depends on using a device to restrict patient movement, such as (Papoose® board Posey straps®, Velcro® straps, seat belts). All advanced techniques require the clinical training, specific documented informed consent [54].

Sedation and General Anesthesia

Sedation is a pharmacologic behavior management technique, there are three levels of sedation; Minimal Sedation is a drug-induced state during which patients respond normally to verbal commands with no affection on ventilatory and cardiovascular functions, Moderate Sedation is partial depression of consciousness and patients respond purposefully to verbal commands, while Deep Sedation is a controlled state of unconsciousness in which the patient is not aroused easily, with a degree of protective reflexes absence [56].

The routes of sedation administration are inhalational (Nitrous Oxide), enteral (oral or rectal), and parenteral (intramuscular, subcutaneous, submucosal, intranasal, or intravenous) [56].

In some cases, dental treatment under general anesthesia (GA) is the most practical and cost-effective type of treatment [57]. A certain patients who can't tolerate traditional dental treatment can only be treated under GA, such as very young children, or who suffering physical, mental, cognitive or emotional immaturity or disability or those with extreme anxiety who need extensive rehabilitation are treated using GA [58].

Conclusion

We can summarize the dentistry requirements for children by stating that "the task of dentists is the same as it was a generation ago: to provide perfect dental care for children whose behavior may range from cooperative to hostile to defiant."

Behavior Guidance is the art of recognizing the complexities of children's and dentists' temperaments, parents' attitudes, and varying treatment needs to establish an optimal treatment plan to best address the child's needs.

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