

Dentists' Approaches to Children and Current Basic Behavior Management Guideline: A Review

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ABSTRACT

Behavior guidance techniques are psychological techniques for creating a positive dental attitude in the child, performed by the dentist and dental staff so that pediatric patients can be treated effectively and adequately. It is aimed at strengthening the child's coping skills, completing the dental treatment in a willing and accepting way, and reducing the child's perception of dental interventions as a dangerous situation by applying different behavior management techniques. When the current literature and clinical guidelines on the subject are examined, it has been seen that new non-pharmacological behavior management techniques that can be used in pediatric dentistry have been defined. The purpose of this review is to provide a guide for updated behavior management techniques that can be used by dentists during the treatment of pediatric patients and in atraumatic treatment sessions.

Keywords: Clinical Practice Guideline, Child Behavior, Pediatric Dentistry

INTRODUCTION

Dentists are expected to be knowledgeable about dental problems and oral diseases seen in childhood and to be competent in their treatments. In the safe and effective treatment of these problems, the attitude of the child and the family towards the treatment must be understood and changed by intervening from time to time. Behavior guidance ensures the safety of the dentist and the child during the administration of medically necessary treatment, as well as the continuity of communication involving the dentist and his team, the patient, and the parent. The aims of behavior guidance are:

- Communicating with the child,
- Alleviating the child's fear and anxiety of the dentist,
- Increasing the awareness of the child and parents about the process of good oral health,
- Regulating the child's behavior to improve his/her oral health,
- Leading the formation of a safe relationship between the dentist/staff and the child/parent,
- Providing quality oral health care in a comfortable, minimally restrictive, safe and effective manner.¹

Behavior guidance techniques range from communicating and stopping unwanted behavior to developing new practice methods that can increase the child's cooperation. The cooperation of pediatric patients is very important during the application of treatments, especially in the pedodontics and orthodontics disciplines working with the pediatric patient group.² Behavior guidance should not be a punishment for the patient's inappropriate behavior, use of force, or be painful, embarrassing, or humiliating. For correct application, an understanding of the scientific importance of behavior guidance techniques and skills in communication, empathy, tolerance, cultural sensitivity, and flexibility are required.¹

The aim of this review is to include more basic behavioral methods in dental practice in order to reduce the need for advanced behavior management methods such as sedation and general anesthesia in pediatric patients, and to present to the readers basic behavioral guidance techniques expanded in the updated American Academy of Pediatric Dentistry (AAPD) guide.¹

Basic Behavior Guidance Techniques

Because children develop physically, intellectually, emotionally, and socially, it is important for dentists to have a wide range of behavior guidance techniques to be tolerant and meet

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each child's needs. Behavior guidance is a comprehensive and ongoing method that aims to improve the relationship between the patient and the dentist, rather than dealing with children individually. Some of the behavior guidance techniques listed below aim to maintain communication, while others aim to eliminate inappropriate behavior and establish communication. A specific, individualized behavior guidance technique should be applied to each child.¹

1. Communication and communicative guidance:

In pediatric dentistry, communicative management and appropriate use of authority are applied jointly in children with and without cooperation. At the beginning of a dentist appointment, asking the child questions and actively listening to their answers can help establish an atmosphere of trust. The dentist can create teacher/student roles to establish an informed patient profile and deliver dental treatment safely. Interaction with the child at the beginning of the session helps establish trust and rapport with the dentist.³ After the treatment procedure begins, bilateral communication should be maintained and the dentist should be seen as an active participant in their health and care. With this two-way exchange of information, the dentist can also provide one-way behavioral guidance through directives. Using descriptive assertiveness techniques (e.g., "I need you to open your mouth so I can check your teeth.", "I need you to sit still so we can take an x-ray.") tells the child exactly what is needed. The dentist may ask 'yes' or 'no' questions which the child can answer by pointing or disapproving. It is also necessary to observe the child's body language to confirm that the message has been received and to assess the level of comfort and pain.

Patient compliance can be achieved through the integrated use of several specific communicative behavior guidelines. Rather than being a collection of singular techniques, communicative guidance is an ongoing subjective process that becomes an extension of the dentist's personality. This process includes showing positive visuals before the dentist visit, showing examples, tell-show-do, ask-tell-ask, voice control, non-verbal communication, positive support and praise by explaining, various distraction techniques (e.g. auditory, visual, imaginative clinical designs), the shaping of memory in response to the clinical environment and procedures, parental presence/absence, enhanced control, anxiety, or individuals with special care needs. When selecting specific communicative guidance techniques, the dentist must consider the patient's development as well as the presence of other communication deficits (e.g., hearing impairment).¹

Wurster et al.⁴ examined communication patterns between senior dentistry students and their patients to support the point that trust is an important component in communicating with pediatric patients. Interactions were videotaped and evaluated during regular treatment appointments. Behavioral patterns used by dentists have been shown to lead to a certain type of behavior in the child. It has been determined that if the communication model is appropriate, the desired behavior is most likely achieved. In another study, when considering the dentist's level of trust, results showed that less confident dentists were responsible for 95% of coercive behavior, 86% of permissive behavior, and 87% of uncooperative behavior.⁵

2. Positive pre-visit imagery:

In this method, patients are shown positive images about dentistry and dental treatment before their dentist appointment.

The objectives of displaying positive visuals before the visit are to:

- Provide visual information to children and parents about what they can expect from a dentist visit,
- Provide an environment for children to ask questions about the functioning of the clinic before dental procedures begin.

Read story books prepared for children's age groups to help them adapt more easily to the clinic environment and the dentist they have just met.

Indications: Applicable to all patient populations.

Contraindication: None.¹

In a study conducted by Alsaadoon et al.⁶ they showed that reading a dentistry storybook before dental treatment in children aged 6-8 years reduced dental anxiety and positively affected the child's behavior during treatment.

3. Direct observation:

Patients are shown a video or allowed to directly observe a young, cooperative patient receiving dental treatment.

The objectives of direct observation are:

- To familiarize the patient with the order and steps of a treatment procedure,
- To give the patient and parent the opportunity to ask questions about the dental procedure in an environment where they feel comfortable.

Indications: Applicable to all patient populations.

Contraindication: None.¹

It has been observed that live modeling or watching a 10-minute video recording is as effective as the 'tell-show-do' method in routine dental check-up and preventive dentistry practices in children aged 7-9 years.⁷

4. Tell-show-do:

The technique involves verbal explanations of procedures in phrases appropriate to the patient's developmental level (tell); demonstrating visual, auditory, olfactory, and tactile aspects of the procedure to the patient in a carefully defined, non-threatening environment (show); followed by an explanation and completion of the process without deviating from what is shown (do). The tell-show-do technique is used with communication skills (verbal and non-verbal) and positive reinforcement.

The objectives of the tell-show-do method are as follows:

- Teaching the patient the importance of visiting the dentist and introducing the patient to the clinic layout and equipment,

- Shaping the patient's response to procedures through desensitization and well-defined expectations.

Indications: Applicable to all patient populations.

Contraindication: None.¹

In a study conducted on the subject, it was determined that the most preferred behavior guidance technique by parents was tell-show-do.⁸ In a study evaluating parental attitudes towards different management techniques used during children's dental treatment, after showing parents a video cassette depicting various behavioral management techniques, positive reinforcement, effective communication, tell-show-do, distraction, modeling, and non-verbal communication were seen as the most accepted techniques.⁹

5. Ask-tell-ask:

This technique involves finding out (asking) the patient's thoughts about the upcoming appointment and planned treatments; It includes the stages of explaining the planned treatments with representations appropriate to the patient's level of understanding and in a non-threatening language (tell), and questioning whether the patient understands the treatment and what he/she feels for the purpose of reinforcement (ask). If the patient's concerns continue, the dentist can evaluate them and, if necessary, change the planned steps or behavioral guidance techniques.

Objectives:

- To measure anxiety that is at risk of causing maladaptive behavior during treatment,
- To inform the patient about the planned treatment,
- Confirming that the patient is satisfied with the treatment before continuing the treatment.

Indications: Applicable to all patient populations.

Contraindication: None.¹

With the development of communication techniques, a study conducted with the participation of 70 children under the age of 12 showed that the ask-tell-ask technique was among the most accepted techniques by parents.¹⁰

6. Voice control:

Voice control is the intentional manipulation of the volume, tone, or rate of sound to influence and direct the patient's behavior. While a change in voice cadence can be easily accepted, the use of an assertive voice can be off-putting to some parents who are not familiar with this technique. Explanation to the parent before use can prevent misunderstanding.

The objectives of volume control are:

- To attract the patient's attention and increase the degree of compliance with the treatment;

- To prevent behaviors that are incompatible or avoidance of treatment,

- To create compatible adult and child roles.

Indications: Applicable to all patient populations.

Contraindication: None.¹

In a study conducted with 4th-grade dentistry students, where the level of understanding of this technique was measured, it was shown that the behavior guidance techniques most frequently used by the students in pediatric patients were reinforcement and desensitization. When the same study was administered to students after their clinical training course, statistically significant increases were observed in the use of voice control and modeling techniques.¹¹

7. Non-verbal communication:

Non-verbal communication is the reinforcement and guidance of behavior through appropriate contact, posture, facial expression, and body language.

The objectives of non-verbal communication are:

- To increase the effectiveness of other communicative guidance techniques,
- To gain or maintain the patient's attention and compliance.

Indications: Applicable to all patient populations.

Contraindication: None.¹

In a systematic review and meta-analysis study evaluating parents' attitudes towards behavior guidance techniques used in dentistry, it was determined that the most accepted behavior guidance technique with 91% was non-verbal communication.¹²

Researchers have shown that voice control can be one of the most effective behavior guidance techniques when combined with non-verbal indicators.¹³

8. Positive reinforcement and descriptive praise:

It is very important to provide appropriate feedback in the process of establishing the desired patient behavior. Positive support/encouragement strengthens desired behaviors and increases the likelihood of these behaviors being repeated. Social reinforcers include motivating tone of voice, facial expression, verbal praise, and appropriate displays of affection by the dentist and assistants. Expressive praise emphasizes specific cooperative behaviors (e.g., "Thank you for sitting still.") rather than general appreciation (e.g., "You did a good job."). Non-social supports include toys.

Objectives: The purpose of positive reinforcement and praise is to reinforce the desired behavior.

Indications: Applicable to all patient populations.

Contraindication: None.¹

It has been shown that the most frequently used technique (89.3%) by dentists in the USA and Canada in pre-doctoral training after the 'tell-show-do' technique (100%) is the communicative behavior guidance technique.¹⁴

9. Distraction:

It is a technique of attracting the patient in a different direction from the situation that can be perceived as an unpleasant procedure. The direction of attention can be replaced by using the imagination (e.g., stories), the design of the clinic, and the auditory (e.g., music) and/or visual (e.g., television, virtual reality glasses) effects.

Objectives: The objectives of distracting are as follows:

- To eliminate the understanding of unpleasant situations,
- To eliminate the negative situation or the attempt to avoid that situation.

Indications: Applicable to all patient populations.

Contraindication: None.¹

Studies have shown that audio-visual distractors effectively reduce the pain reported during local anesthetic injections.¹⁵ A study has shown that it is more effective to watch cartoons during local anesthesia in children aged 5-12 years.¹⁶ During a stressful procedure, a break may be an effective way to distract more advanced behavioral orientation techniques before performing a procedure, thereby providing a smoother transition for the child into necessary dental treatments with minimal anxiety and discomfort. In a study conducted with 45 children aged 6-9 years in need of dental treatment, it was seen that the restructured memory of the event in the control session applied before the second treatment session decreased and the memory of fear changed compared to the control group. In a study conducted with 45 children aged 6-9 years in need of dental treatment, it was observed that those in the intervention group had a significant change in their memory of the fear and pain experienced during the first treatment, recalling these as less intense compared to their initial reports.¹⁷

Kumari et al.¹⁸ conducted a study with 200 children aged 6-12 years who required local anesthesia for various dental procedures. They were divided into two groups: one group used immersive virtual reality (IVR) to play interactive games while the other group watched cartoons in a non-immersive virtual reality (NIVR) setting. The study found that children in the IVR group, who were actively engaged in playing video games in a 3-dimensional, 360-degree interactive environment, experienced significantly less pain and anxiety compared to those in the NIVR group, who passively watched cartoons. This suggests that immersive virtual reality, with its multi-sensorial engagement, is more effective than non-immersive methods like watching cartoons in reducing pain perception during dental procedures in children. The study also indicated that children in the IVR group, evaluated with Frankl 3 and 4 behavioral scores for their cooperation with the dentist,

showed more effective engagement and response during treatments requiring attention. This was attributed to their active participation using 3-dimensional virtual reality glasses with a controller, demonstrating a higher efficacy in managing their behavior compared to those who watched cartoons in the NIVR setting.

10. Memory restructuring:

Shaping of the memory is a behavioral approach in which a negative moment (e.g., first dentist visit, local anesthesia application, restorative treatment procedure) is converted into positive memories using recommended tips. This approach was used in children with changes in their fear and behavior related to local anesthesia during the first restorative dentist visit under local anesthesia and subsequent visits. Shaping includes four factors:

- (1) Visual reminders,
- (2) Verbally positive support,
- (3) Explaining sensory details with concrete examples,
- (4) A sense of success.

An example of a visual reminder is a photo capturing the child's smile during their first visit, serving as a positive memory before any challenging experiences. Positive support through verbal expression may be to ask the child's parent if he did not say how well he did in the last appointment. The child is encouraged to recount their positive experiences from the last appointment to their parent and dentist, reinforcing the positive aspects of their visit. The concrete examples of explaining sensory details include praising the child for positive behaviors known to everyone, such as holding his hands in his arms or opening his mouth wide. Later, the child is asked to exhibit these behaviors, which leads to a sense of success in him.

Objectives: The objectives of reshaping memory are as follows:

- Reshaping negative dentist experiences,
- To improve patient behavior in future dentist appointments.

Indications: Applicable to all patient populations.

Contraindication: None.¹

11. Desensitization to dental settings and procedures:

Systematic insensitivity is a psychological technique that can be applied to change the behavior of patients with anxiety in the dental clinic environment. It is a process that reduces emotional response after gradual exposure to a negative, deterrent, or positive stimulus. Not to take part in the guide in 2015,¹⁹ In this technique, which increases its use in clinical practice with the emphasis on the importance of the guide published in 2020, patients are gradually exposed to the components of the dental appointment that worries them. Patients can obtain information about the dental examination and environment at home with a booklet or video or by examining the website of the practice. Parents can model the actions (e.g., open

the mouth and touch the cheeks) and practice with the child using a mouth mirror at home. Another visit to the practice to explore an office tour and environment during non-clinical hours is one of the successful approaches. After each step is successfully completed, an appointment can be made with a dentist and personnel.

Objectives:

- Continuing dentist controls with the successful overcoming of getting used to the environment and exposure to the environment,
- Defining their fears,
- To increase relaxation techniques for these fears,
- Using advanced techniques is a gradual exposure to situations that reveal their fears and cause a decrease in their reactions.

Indications: Fearful stimuli can be used in patients with anxiety and/or neurodevelopmental disorders (e.g., autism spectrum disorder).

Contraindications: None.¹

In a study of parents of children with autism spectrum disorder, parents stated that they need a routine adapted to their needs to minimize their children's anxiety and to make them accustomed to the new environment.²⁰

12. Enhancing control:

This technique, which was not included in the previous behavior routing guide, has taken its place in the guide published in 2020 with the change in dentists' understanding of behavior orientation. Control development is a technique used to enable the patient to play an active role in dentistry experience. The dentist defines a sign for the patient to use if he is uncomfortable or if he wants to be interrupted for a short time. The patient should try this movement before he starts treatment in order to comprehend that the dentist can make a limited sign away from his working area. When the patient uses a sign during dental procedures, the dentist should immediately pause the treatment and take into account the patient's concern. The increasing control of the patient has been shown to be effective in reducing pain during the operation.

Objectives: The aim is to ensure that the patient has some control during treatment to control the emotions and abandon uncontrolled behavior.

Indications: It can be used in patients who can communicate.

Contraindications: There are none, but when used early, the patient's fear may increase due to a concern about the upcoming procedure.¹

13. Communication techniques for parents (and age-appropriate patients)

Since parents are legal representatives of children, successful bidirectional communication between the dentist/staff and

the parent is essential for the effective direction of the child's behavior. The socioeconomic situation, stress level, marital incompatibility, dental attitudes compatible with a different culture, and language skills can offer difficulties for clear communication. Communication techniques such as Ask-Tell-Ask and Motivational Interview indicate that the dentist/staff is interested in a patient/parent-centered approach.

Parental presence/absence:

The presence or absence of the parent can be used to ensure cooperation during treatment.

There is a wide variety of views on the attitude of children about the presence/absence of parents during dental treatment. While a dentist control at 12 months old increases the acceptance of a regular dentist's visit, parents will want to be with their children during treatment. It is seen that the management of the health services of parents and their children has changed in a remarkable way today. Although parents want to be with their children during their treatment, this does not imply a lack of trust in the dentist; rather, it may stem from their need to visually reassure themselves of their children's safety. Although they want to protect their children, it is important to pay attention to the emotional needs of parents because of the formation of a hidden but natural feeling. Dentists should adapt to parents' questions and concerns about their children. Dentists should take into account the wishes and desires of the parents and be prepared to change their perceptions.

The objectives of the presence/absence of parents for parents are as follows:

- Participating in examination and treatment,
- Providing physical and psychological support,
- To be convinced by observing the treatment of your child.

Objectives of the presence/absence of parents:

- Attracting the patient's attention and increasing the compliance of treatment,
- Preventing negative behaviors or avoidance movements,
- Creating a compatible dentist-child environment,
- Developing effective communication between the dentist, child, and parent,
- Reducing anxiety and obtaining a positive dentist experience
- Providing rapidly informed approval for changes in treatment or behavioral guidance.

Indications: Applicable to all patient populations.

Contraindications: Parents who cannot provide reluctant or effective support.¹

In a study where parents wanted to be in the clinic during the procedure, most participants (76%) preferred to be with their

children during dental treatment. On the contrary, it was seen that the parents who accepted the separation were less (24%). It has been reported that the main reason for this preference is to improve the behavior of their children among the parents who accept the separation of parents.²¹

It has been shown that children with disabilities and non-disabled people accept behavioral guidance techniques, but have higher acceptance rates in the use of basic techniques than advanced techniques.²²

In addition to patients with anxiety or special care needs

14. Sensory-adapted dental environments (SADE):

With a better perception of the nature of anxiety and fear, which was not mentioned in the 2015¹⁹ guidelines, has taken its place in the 2020 guidelines. This intervention involves an adaptation of the clinical environment to provide a calming effect (e.g., moving projections such as dim lighting, ceiling animals or bubbles, and soothing background music).

Objectives: The technique aims to ensure the relaxation of the patient and to prevent negative or avoidance behavior.

Indications: Conditions such as Autism Spectrum Disorder, Sensory Integration Disorder, or other related disability.

It can be used in patients with dental anxiety.

Contraindications: None.¹

15. Animal-assisted therapy (AAT):

With the addition of this technique to the updated guide, it has been found to be useful in various fields, including dentistry clinics. It is a step towards the purpose that adding a trained animal to the treatment environment to increase communication or reduce the patient's anxiety, pain, or stress. The difference from animal-supported methods (e.g., having a pet for patients in the waiting area) appointments are planned for a period determined to include an animal with good training and a certificate. The animal, which is ready to be a companion during the dentist appointment, helps overcome the obstacles in communication and eliminates the anxiety caused by treatment by making the patient feel safe and comfortable. The targets and results of the intervention during the appointment should be recorded. The health and safety of the animal and caregiver should be ensured. The studies show that although a high level of satisfaction is observed in the use of this technique, it is necessary to work more meticulously in order to prove its effectiveness in increasing collaborative behavior in children.²³

Objectives:

- Strengthening the communication between the patient and the dentist team,
- To control the patient's fear or anxiety,
- To prevent a situation that can create stress by distracting the patient's attention,

- Reducing the perception of pain.

Indications: It can be used as an auxiliary technique to reduce the patient's anxiety, pain or, emotional distress.

Contraindications:

Contraindications for the child:

- Allergy to animals or different medical conditions (e.g., respiratory disorders, weak immune system),
- The therapy animal does not attract the attention of the child or create fear.

Contraindications for the parent: There may be risky conditions for the parent's own health or safety.¹

16. Picture exchange communication system (PECS)

It is a technique applied in patients with limited verbal communication capabilities, especially individuals with autism. The individual chooses a symbol known to everyone to describe his own thoughts. In this system, objects, humans, and concepts have a counterpart, so that the uncertainty in communication is reduced. The patient can start communication himself and the recipient does not need to receive a special training to understand it. It was emphasized that this technique was not included in the previous guide¹⁹ and mentioned in the 2020 guide.

Objectives: The aim is to help individuals whose oral communication capabilities are limited to transfer their wishes or thoughts by using symbols. The dentist can create a specially prepared template for an appointment and express the steps required for treatment (e.g., an oral mirror, hand tool images) visually. The patient can identify icons (e.g., a stop sign) to show that he needs a break during the procedure.

Indications: It can be used as an approach that will facilitate the work of individuals whose verbal communication capabilities are limited.

Contraindications: None.¹

CONCLUSION

Nowadays, the aims of basic behavior management techniques are to communicate well with the patient, to alleviate the child's fear and anxiety of the child and to increase the awareness of the patient and parents of oral health care. Over time, the concept of behavioral management has developed to establish a relationship that focuses on meeting the needs of the child, the parent, the dental environment, themselves and the child's oral health needs. This update on the behavior guidance guide in pediatric patients reflects the examination of the most up-to-date techniques for child patients' behavioral guidance. In this respect, it is seen that the use of various techniques such as virtual reality practices and animal-supported treatment, which gives more importance to patient communication related to behavior management.

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