

Review: Behavior Management Technique in Pediatric Dentistry

¹Dr. Pallavi Sharma, Assistant Professor, Department of Pediatric and Preventive Dentistry, Career Dental College, Lucknow

²Dr. Saarika Suresh, Assistant Professor, Department of Pediatric and Preventive Dentistry, Maharana Pratap Dental College, Kanpur

Corresponding Author: Dr. Pallavi Sharma, Assistant Professor, Department of Pediatric and Preventive Dentistry, Career Dental College, Lucknow

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Abstract

Anxiety and fear remain the primary emotion of a child entering a dental office. The greatest challenge faced by a dentist while treating a pediatric patient is uncooperative behavior. Behavior management techniques are a set of procedures aimed at enhancing the child’s useful coping skills; achieve complete willingness and acceptance of dental care.

Keywords: Anxiety, fearful Child, Disruptive behavior, behavior Shaping

Introduction

Pediatric dentistry has been identified for decades as the specialty which is responsible for the development, research, and expertise in the area of behavior management associated with the dental care of children in dental settings. Despite the advances in this field, visiting the dentist remains stressful to many children which affect their behavior during treatment.^[1] Anxiety and fear remain the primary emotion of a child entering a dental office.^[2]

Disruptive behavior can interfere significantly with providing quality dental care, resulting in increased delivery time and risk of injury to the child. These difficulties have lead to the development of a well-established child behavior management armamentarium for dentists.^[3]

Behavior management methods are about communication and education. The relationship between the child, the child’s family, and the dental team is a dynamic process. It may start before the patient arrives in the surgery and can involve written information as well as dialogue, voice tone, facial expression, body language, and touch.^[4] The goals of behavior management in dentistry are to establish effective communication, to alleviate patient fear and anxiety, and to build a trusting relationship with the child that will ultimately allow the dentist to deliver quality dental care and promote in the child a positive attitude towards dental care and oral health.^[2]

Variables influencing children's dental behaviors

A fearful or anxious child who anticipates an unpleasant visit is more likely to have such an experience than is a child who has a low level of fear or anxiety. Anxiety or fearfulness affects a child's behavior and, to a large extent, determines the success of a dental appointment. **Stephen Wei** explained that many other variables affect the child in a dental office like socioeconomic status, culture, sex, sibling relation, number of children, presence of a parent, and attitude of the dentist.^[1]

Parental Influences on Child Dental Behavior

Parental influences play a major part in how a child copes with the stresses and stimuli of dental treatment [Bailey et al.1973]. Freeman and others have discussed the various models of parent/child dyads [Barlow and Parsons, 2003; Freeman, 2008]. They pointed out that if dentists were aware of some particular relationships they would be forewarned of potential difficult child behaviors and possible consequences if the parent were to be actively involved with, or actively excluded from, the treatment session.^[3]

Classification of behavior management technique

Communication and communicative guidance

Communicative management and appropriate use of commands are applied universally in pediatric dentistry with both cooperative and uncooperative children.^[5]

Communication (i.e., imparting or interchange of thoughts, opinions, or information) may be accomplished by several means but, in the dental setting, it is affected primarily through dialogue, tone of voice, facial expression, and body language.^[6]

Tell Show Do

The objectives of tell-show-do are to:

1. Teach the patient-important aspects of the dental visit and familiarize the patient with the dental setting,

2. Shape the patient's response to procedures through desensitization and well-described expectations.^[7]

Tell: Words to explain procedures in language suitable to the level of acceptance for each child

Show: Exhibition of the procedure in a watchfully defined, non-threatening setting.

Do: Complete the procedure with no deviating from the clarification and demonstration.^[8]

Contingency Management

It is based on the “**Operant Conditioning theory**” by **Skinner**. It is of 4 types:

Positive reinforcement: Presentation of a pleasant stimulus to bring about the desired behavior this process is named behavior shaping. It consists of a definite series of steps towards model behavior

Negative reinforcement: Removal of unpleasant stimulus that brings about the desired behavior. Ex- the sight of white apron, facemask, injection, or sharp instruments scares the child

Omission: Removal of pleasant stimulus to bring out the desired behavior.

Punishment: Presentation of unpleasant stimuli like hand over mouth technique (HOME) and Protective stabilization.^[9]

Modelling

It is based on the “**Observational learning theory**” by **Bandura** given in 1969.

Assessing another parallel aged child or elder siblings having dental treatment fruitfully can have an encouraging influence (1980, Stokes and Kennedy) on an anxious child. This technique is more helpful in those aged between 3 and 5 years.^[10]

Distraction

Distraction intends to move the attention of the patient attention away from the treatment procedure. This could be in the form of cartoons, books, music, or stories. An

additional well standard method is for dentists to speak to patients as they work so that patients pay attention to them rather than focusing on the treatment procedure.^[10]

Voice Control

Voice control is a controlled alteration of voice volume, tone, or pace to influence and direct the patient's behavior.^[6] This technique is very effective in getting the desired behavior from the willful or resistant child, rather than the fearful child. However, the child should not be hurt, shamed, or belittled.^[7]

Contraindication- Patients who are hearing impaired.^[11]

Memory Restructuring

Restructuring involves four components:

- (1) Visual reminder
- (2) Positive reinforcement through verbalization
- (3) Concrete examples to encode sensory details and
- (4) Sense of accomplishment

A visual reminder could be a photograph of the child smiling at the initial visit (ie, before the difficult experience)^[12] Positive reinforcement through verbalization could be asking if the child had told her parent what a good job she had done at the last appointment^[13]. Concrete examples to encode sensory details include praising the child for specific positive behavior such as keeping her hands on her lap or opening her mouth wide when asked. The child then is asked to demonstrate these behaviors, which leads to a sense of accomplishment.^[10]

Desensitization

The child's existing anxieties are dealt with by exposing him or her to series of dental experiences, presented in an order of increasing anxiety evocation, progressing only when the child can accept the previous one in a relaxed state.[Wolpe, 1958; Machen and Johnson,1974]

Objectives

- To help the child overcome dental anxieties.

- To expose the child to a graduated series of potentially anxiety-inducing experiences.^[26]

Protective stabilization

The broad definition of protective stabilization is the restriction of a patient's freedom of movement, with or without the patient's permission, to decrease the risk of injury while allowing safe completion of treatment. The restriction may involve another person(s), a patient stabilization device, or a combination thereof.^[14]

Indications

- A patient who requires immediate diagnosis, urgent care, and/or limited treatment and cannot cooperate due to emotional or cognitive developmental levels, lack of maturity, or mental or physical conditions;
- Sedated patients to help reduce untoward movement.^[3]

Contraindications

- Cooperative non-sedated patients
- Patients who cannot be immobilized safely due to associated medical, psychological, or physical conditions.^[15,16]

Physical Approach

Home Technique

The HOME technique was introduced by Evangeline Jordan. Here child's mouth is covered with hand until the desired behavior is presented. On presentation of appropriate behavior, the child is praised.^[17]

Indication

- A healthy child who can understand and cooperate but who exhibits defiant or hysterical behavior to dental treatment.

Contraindications

- Immature child
- When it prevents a child from breathing.^[18]

Physical restrain

The physical restraining force may be of human origin (so-called "active" restraint where the hands of a parent or dental assistant are used to restrain the child) or provided by mechanical adjuncts ("passive" restraint such as the use of a Papoose board, Pedi-Wrap or a combination thereof).

Indications. In a review of restraint used in various healthcare settings, **Connick et al [2000]** distilled five salient points.¹⁹

- It should only be used when necessary,
- The least restrictive alternative should be chosen,
- It should not be used as punishment,
- It should not be used solely for the convenience of the dental team
- Staff should closely monitor its use.

Pharmacological Management

Sedation

Conscious sedation is a combination of medicines to help to relax and block pain during a medical or dental procedure. Although behavioral management may need to be augmented with conscious sedation for some anxious children, pharmacological agents are not substitutes for effective communication and the persuasive ability of the operator.^{19]} In conscious sedation, verbal contact and protective reflexes are maintained, whereas in general anesthesia these are lost.

Recording of blood pressure is a part of the assessment process of all patients having intravenous, oral, transmucosal sedation. The drugs used for conscious sedation are inhalational agents, Benzodiazepines, Midazolam (oral sedative), laughing gas (nitrous oxide sedative), and fentanyl (intravenous), Sublimaze (injection).^{20]}

Nitrous Oxide Nitrous oxide (N₂O) is a non-irritating respiratory tract gas, which presents fast action on induction as well as during recovery (these effects occur within a few minutes).^{21]} Machines intentionally designed

for the administration of inhalation sedation in dentistry should be used and be capable of administering N₂O to a maximum limit of 70% with not less than 30% of oxygen in volume, even though in the majority of cases, adequate analgesia is achieved with concentrations of N₂O that do not exceed 50% in volume.^{22]}

Midazolam (oral sedative)

Midazolam is rapidly absorbed in the gastrointestinal tract, produces its peak effect in a relatively shorter time of about 30 minutes, and has a short half-life of about 1.75 hours.^{23]} When given in doses between 0.5 to 0.75 mg/kg of body weight, oral midazolam is a useful sedative agent for pediatric dental patients. Midazolam has also been shown to enhance anterograde amnesia when used preoperatively in pediatric patients.^{20]}

Pediatric dosage of midazolam

Midazolam has been used orally at doses between 0.2-1.0 mg/kg with the onset of action between 20-30 minutes. Oral midazolam in a dose of 0.5 mg/kg is a suitable premedication for child patients during short dental procedures.^{23]}

Contraindications: Predisposing medical and/or physical conditions which would make sedation inadvisable.

General Anesthesia

General anesthesia is an inhibited state of unconsciousness escorted by a loss of protective impulses, including the capability to maintain an airway separately and respond decisively to physical stimulation or verbal instruction.^{24]}

The various Techniques and Agents for Induction of Dental GA

Mask induction, rectal induction, oral route or nasal transmucosal agents, IM or IV injections are various techniques for induction of anesthesia. Due to fear of injections, inhalation anesthesia induced by halogenated

volatile anesthetics is routinely used in child patients. Nitrous oxide, isoflurane, desflurane, and sevoflurane are inhalation agents. Due to pleasant odor, low blood/gas partition coefficient, and less respiratory problem, sevoflurane is the choice of induction agent.^[18]

Indications

- Patients who cannot cooperate due to a lack of psychological or emotional maturity and/or mental, physical, or medical disability
- Patients for whom local anesthesia is ineffective because of acute infection, anatomic variations, or allergy^[25]

Contraindications

- A healthy, cooperative patient with minimal dental needs;
- Predisposing medical conditions would make general anesthesia inadvisable.^[20]

Conclusion

Behavior management is broadly agreed to be a key factor in supplying dental care for children. A wide variety of behavior management techniques are available to pediatric dentists which must be used as appropriate taking into account cultural, philosophical, and legal requirements in the country of the dental practice of every dentist concerned with dental care of children, solely for the benefit of the children.

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