Enhanced/Modern Behavior Guidance Techniques

Geliştirilmiş/Modern Davranış Rehberliği Teknikleri

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ABSTRACT In this study, several contemporary behavior guidance approaches aimed at reducing anxiety and pain perception in pediatric patients are discussed. In this context, noncontingent escape, the pediatric quiz game, scenario-based behavior guidance, and the dental home approach are examined. The primary objective of these methods is to make the dental treatment process more understandable and predictable for children, thereby increasing their sense of control, promoting cognitive engagement, and helping them develop a more positive treatment experience. These approaches represent modern behavior management strategies that aim to facilitate children's adaptation to the dental environment, enhance their participation in treatment, and reduce both anxiety and perceived pain during dental procedures.

Keywords: Pediatric dentistry; behaviour control

ÖZET Bu çalışmada, çocuk hastalarda anksiyete ve ağrı algısını azaltmayı amaçlayan güncel davranış rehberliği yaklaşımlarından bazıları ele alınmaktadır. Bu kapsamda koşulsuz mola yöntemi (noncontingent escape), pediatrik soru-cevap oyunu, senaryo temelli davranış rehberliği ve diş evi yaklaşımı incelenmiştir. Bu yöntemlerin temel amacı, çocukların dental tedavi sürecini daha anlaşılır ve öngörülebilir hale getirerek kontrol algısını artırmak, bilişsel katılımı desteklemek ve tedavi sırasında daha olumlu bir deneyim yaşamalarını sağlamaktır. Söz konusu yaklaşımlar, çocukların dental ortama uyumunu kolaylaştırmayı, tedaviye katılımını artırmayı ve anksiyete ile ağrı algısını azaltmayı hedefleyen çağdaş davranış yönetimi stratejileri arasında yer almaktadır.

Anahtar Kelimeler: Çocuk diş hekimliği; davranış kontrolü

Behavior guidance is a fundamental component of pediatric dental practice and plays a critical role in ensuring successful treatment outcomes. Children frequently experience dental anxiety and fear, which may negatively influence cooperation and the quality of care delivered. Traditional behavior guidance techniques, such as tell-show-do, positive reinforcement, and distraction, have long been used to help children adapt to the dental environment. However, increasing emphasis on patient-centered care and psychological aspects of pain and anxiety management has led to the development of more advanced approaches. Recently, enhanced behavior guidance techniques have been introduced to further improve children's cooperation by incorporating elements such as perceived control, cognitive engagement, and interactive communication. These contemporary strategies aim not only to reduce anxiety and pain perception but also to empower children and actively involve them in the dental treatment process.

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NON CONTINGENT ESCAPE

The concepts of noncontingent escape and perceived control are closely related, as both aim to provide the child with a sense of control during dental procedures. By allowing

the child opportunities to pause or briefly escape from the procedure, these approaches reduce anxiety and improve cooperation by enhancing the child's perception of control over the situation.

In the dental setting, noncontingent escape can be implemented by allowing the child to signal the clinician to stop whenever discomfort is experienced. This approach shifts the locus of control toward the child and contributes to more effective behavior management during procedures such as local anesthesia. Children can communicate their needs through various signals, including raising a hand, using a signaling device, or vocalizing. Encouraging children to actively communicate during treatment not only strengthens their sense of control but may also serve as a distraction mechanism, helping to reduce the perception of pain.[1]

Allen and Wallace conducted a clinical study to evaluate the effectiveness of noncontingent escape as a general behavior management strategy in a pediatric dental setting.[2] Noncontingent escape refers to the provision of brief breaks from dental procedures at predetermined intervals, regardless of the child's behavior. The rationale behind this approach is that many disruptive behaviors in children are motivated by the desire to escape from unpleasant or anxiety-provoking dental procedures. By providing scheduled opportunities for short breaks, the child's motivation to engage in escape-related behaviors may be reduced.

The study was carried out in a pediatric dental clinic and included children who demonstrated uncooperative or disruptive behavior during dental treatment. The researchers implemented a noncontingent escape procedure in which children were given brief pauses during dental procedures at regular intervals. During these breaks, the dental procedure was temporarily stopped, allowing the child to rest before treatment resumed.

The results of the study showed that the use of noncontingent escape was associated with improved patient cooperation and a reduction in disruptive behaviors during dental treatment. Children who received scheduled opportunities to pause the procedure were better able to tolerate dental interventions compared to those who did not receive such breaks. The authors suggested that providing predictable opportunities to interrupt treatment may reduce anxiety and decrease the need for escape-motivated behaviors.

PERCEIVED CONTROL

The beneficial effects of enhanced or perceived control in the dental environment were first demonstrated by Corah in 1973.[3] In his study, children were given a signaling device that allowed them to indicate when they wished the dentist to pause the procedure. Those who received this device showed significantly lower galvanic skin responses during the most stressful moments of treatment, reflecting reduced sympathetic activation and improved physiological regulation. In contrast, children without this control option displayed stronger autonomic stress reactions. Corah's results suggest that when children believe they can influence or interrupt a dental procedure, their emotional and physiological stress responses diminish, leading to better coping and greater cooperation during treatment. Importantly, this study provides early and convincing evidence that even a minimal or partially symbolic sense of control can meaningfully reduce treatment-related distress in pediatric patients.

A more recent neuroimaging study by Wiech and colleagues (2006) provided robust evidence that perceived control influences both emotional distress and the sensory experience of pain.[4] In the experiment, adult volunteers received identical painful electrical stimuli, administered under two conditions: one in which they believed they controlled the onset of the stimulus, and another in which the onset was determined externally by a computer or an observer. Although the stimuli were physically the same, participants reported significantly lower pain intensity ($p=0.01$) and reduced pain-related anxiety when they believed they had control. Functional MRI revealed increased activation in the anterolateral prefrontal cortex, a region associated with higher-order cognitive processes and the regulation of aversive experiences. These findings indicate that perceived control engages cortical systems involved in reappraising and modulating nociceptive input. Clinically, this suggests that supporting a child's sense of control during dental procedures may meaningfully reduce intraoperative pain by influencing central pain-processing pathways.

Building on the effects of perceived control, Wiech et al. also emphasize its close relationship with self-efficacy, defined as an individual's belief in their capacity to manage challenging or stressful situations. Their results show that perceived control and self-efficacy work together: When people feel capable and believe they can influence what happens to them, their brains activate regions (such as the anterolateral prefrontal cortex) that help them

manage pain and stress more effectively. However, the study also found that individuals with high self-efficacy experience more difficulty when they lose control-because their usual coping strategy becomes disrupted. These findings demonstrate that perceived control strengthens self-efficacy, and together they help reduce pain and anxiety. This connection is especially important in clinical settings, where supporting a child's sense of capability and control can improve cooperation and reduce pain perception.[4]

The effects of developing self-efficacy or self-efficacy enhancement on coping in stressful situations like third-molar surgery were evaluated by Litt et al. In this randomized study, first-time third-molar extraction patients received four different preparatory interventions designed to enhance relaxation and perceptions of control. The findings demonstrated that interventions aimed at increasing coping self-efficacy -particularly relaxation-based approaches and relaxation combined with efficacy-enhancing feedback- were more effective than standard preparation alone (local anesthesia and extraction) or pharmacological premedication.[5] Increases in coping self-efficacy were significantly associated with lower pre-operative anxiety, reduced peri-operative distress, and improved behavioral coping during surgery. Moreover, the relaxation plus self-efficacy enhancement condition produced the greatest reductions in anxiety and distress. Notably, patients in the self-efficacy enhancement group received false biofeedback indicating successful relaxation performance, a strategy deliberately used to strengthen self-efficacy perceptions by transforming initially low-confidence individuals into more confident and capable copers. The authors concluded that beliefs related to self-efficacy and perceived control can be intentionally modified, and that these beliefs play a critical role in determining how effectively individuals cope with stressful dental procedures.

Overall, the findings indicated that noncontingent escape can be an effective behavior guidance strategy in pediatric dentistry, particularly for children who exhibit anxiety or behavioral difficulties during treatment. The study highlights the importance of incorporating behavioral principles into dental practice in order to improve treatment compliance and create a more positive dental experience for pediatric patients.

PEDIATRIC QUIZ GAME

In educational settings, "ice-breaker" games are commonly used to create a relaxed and supportive learning environment. Marneni et al. reported that ice-breaker activities in English language classrooms contributed to a more relaxed atmosphere and improved language skills among children.[6] Similarly, studies in healthcare and early childhood education have highlighted the role of ice-breaking activities in enhancing communication.[7] Chao and Fan further demonstrated that ice-breaking board games reduced communication anxiety in English classes.[8] Drawing from these observations, ice-breaker strategies may also be beneficial in reducing anxiety among children attending dental clinics, particularly during their first visit.[9,10] Unwilling responses to dentists' communication attempts, avoidance of initial dialogue, crying, or tantrums in the waiting room are commonly encountered in pediatric dental practice. Peretz and Gluck demonstrated that the use of a magic trick improved cooperation compared with conventional behaviour guidance techniques.[11] In this context, "The Pediatric Quiz Game" was developed as a non-pharmacological behaviour guidance technique to enhance communication with anxious children.

This technique is based on initiating communication between the dentist and the child in the waiting room with the aim of reducing anxiety by enhancing the child's sense of self-efficacy. To achieve this, the child is asked simple questions related to familiar topics such as colors, fruits, and animals. When necessary, cues are provided to facilitate responses. Correct answers are reinforced with verbal praise in order to strengthen the child's sense of self-efficacy and reduce anxiety. Following the initiation of communication in the waiting room, the dental examination and the planned procedures are introduced to the child using the conventional tell-show-do technique.

SCENARIO BASED BEHAVIOR GUIDANCE

In recent years, scenario-based and experiential preparation techniques have been proposed as innovative behavior management approaches designed to improve children's adaptation to dental procedures. These techniques typically involve exposing children to simulated dental scenarios before the actual treatment through structured activities such as role-playing, storytelling, interactive demonstrations, or guided simulation of dental procedures. By allowing children to observe or experience a simulated dental environment, these interventions help them become familiar with dental instruments, treatment sequences, and the clinical setting, thereby reducing uncertainty and anticipatory anxiety. Liu, et al. demonstrated that scenario-experiential behavior management techniques significantly reduced dental fear and improved cooperative behavior in preschool children undergoing dental treatment.[12]

Similarly, simulation-based approaches have been used to recreate real-time dental scenarios in a controlled and structured environment. In such methods, simulated clinical situations enable participants to rehearse behavioral responses and coping strategies before encountering the actual dental procedure. This experiential exposure may improve emotional preparedness, enhance understanding of the treatment process, and facilitate more effective management of dental anxiety during real clinical encounters.[13] Taken together, these findings suggest that structured preparatory interventions based on simulated or scenario-based experiences may represent effective adjuncts to conventional behavior guidance techniques for improving children's cooperation and reducing dental anxiety in pediatric dental settings.

Beyond chairside behavior guidance techniques, children's cooperation and adaptation to dental treatment are also shaped by broader environmental and familial influences. While approaches such as perceived control, preparatory games, and scenario-based interventions primarily target the child's immediate emotional responses within the clinical setting, long-term behavioral adaptation is strongly influenced by parental attitudes, previous experiences, and continuity of dental care. In this context, the concept of the dental home has gained importance as a family-centered model that supports early positive dental experiences and promotes cooperative behavior over time.

DENTAL HOME

Parents play an important role in shaping their child's behavior during dental visits. Parents who have positive attitudes toward oral health care are more likely to establish a dental home for their child at an early age. Early preventive dental care is associated with reduced dental disease, fewer treatment needs, and a lower likelihood of negative dental experiences. In contrast, parents who have experienced dental anxiety or unpleasant dental treatment may unintentionally transfer their fears to their children, which can influence the child's attitude toward dental care and cooperation during treatment.

Parental life circumstances may also affect children's behavior. Stressful experiences during a parent's own childhood, as well as ongoing social or economic difficulties, may contribute to behavioral problems in children, including increased hyperactivity or aggression. Long-term financial hardship can lead to parental depression, anxiety, irritability, substance misuse, or family conflict, which may further influence a child's emotional and behavioral development. Parental depression may also result in changes in parenting practices, such as reduced supervision, caregiving, and discipline, placing children at greater risk for emotional and behavioral adjustment difficulties. Through empathetic communication and supportive care, dental professionals can help parents feel more confident and comfortable, which may positively influence children's behavior during dental treatment.

The concept of the dental home, as defined by the American Academy of Pediatric Dentistry, emphasizes the establishment of an ongoing relationship between the dentist and the child that includes comprehensive, continuously accessible, coordinated, and family-centered oral health care. The dental home model supports early prevention, risk assessment, and timely intervention to promote optimal oral health outcomes in children. According to the AAPD, establishing a dental home at an early age facilitates preventive care, improves access to dental services, and contributes to better long-term oral health.[13] Collectively, contemporary behavior guidance approaches in pediatric dentistry -including noncontingent escape, perceived control strategies, self-efficacy-enhancing communication techniques such as the Pediatric Quiz Game, scenario-based preparatory interventions, and the establishment of a dental home-aim to reduce dental anxiety, improve cooperation, and promote positive dental experiences through child-centered and family-oriented care.

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