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Cognitive behavior therapy in pediatric dentistry – basic strategies and techniques

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Когнитивно-поведенческа терапия в детската дентална медицина – основни стратегии и техники

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Abstract

Cognitive-behavioral interventions are a general name for psychotherapy practices based on evidence and cognitive psychology. Cognitive psychology is used to help children identify negative thoughts through behavioral exercises. Cognitive Behavioral Therapy (CBT) is a non-pharmacological approach that incorporates both behavioral and cognitive strategies to help manage behavior during dental treatments for children. This structured psychological method involves behavior analysis, psychoeducation, exposure therapy, cognitive restructuring, assertiveness training, and home exercises. The cognitive-behavioral therapy is a psychological intervention that has been applied to various health-related issues including psychiatric illnesses such as depression and anxiety, various phobia as well as physical symptoms such as pain. It has been applied to help children overcome dental phobia. The therapy focuses on personalized techniques that help children develop healthier emotional and mental responses to stress during dental visits.

Keywords: *dental anxiety, cognitive behavior therapy, psychoeducation*

Резюме

Когнитивно-поведенческата терапия (КПТ) представляват общо наименование на психотерапевтични практики, базирани на доказателства и когнитивна психология. Когнитивната психология се използва за да помогне на децата да идентифицират негативни мисли чрез поведенчески упражнения. Когнитивно-поведенческата терапия (КПТ) е нефармакологичен подход, който съчетава както поведенчески, така и когнитивни стратегии за управление на поведението по време на дентално лечение при деца. Този структуриран психологически метод включва анализ на поведението, обучение, терапия чрез излагане на страховите стимули, когнитивно преструктуриране, обучение за увереност и домашни упражнения. КПТ е психологическа интервенция, която се прилага при различни здравословни проблеми, включително психиатрични заболявания като депресия и тревожност, различни фобии, както и физически симптоми като болка. Тя се използва и за преодоляване на денталната фобия при деца. Терапията се фокусира върху персонализирани техники, които помагат на децата да развият по-здравословни емоционални и умствени реакции на стреса по време на посещения при дентален лекар.

Ключови думи: *дентална тревожност, когнитивно-поведенческа терапия, психологическо образование*

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Introduction

Children often find various strategies to avoid dental visits, leading to missed or failed appointments. Their uncooperative behavior can make treatment challenging, resulting in longer appointment times and increased stress for dentists. This ultimately contributes to inadequate dental care [1].

Delays in seeking treatment can render conservative approaches ineffective, often necessitating more complex procedures involving pharmacological interventions. Psychological behavior management techniques aim to minimize reliance on excessive or potentially unsafe medication use. These methods are designed to reduce fear and anxiety related to dental procedures while improving children's ability to cope. In contrast, pharmacological techniques fail to address these psychological aspects, emphasizing the importance of prioritizing psychological behavior management over pharmacological methods [2].

Cognitive-behavioral therapies (CBT) are psychotherapeutic approaches designed to address maladaptive thought patterns and behaviors [3]. Unlike older therapies such as psychoanalysis, which focus on unconscious influences and past experiences, CBT is concerned with present problems from negative thoughts and behaviors [4]. Cognitive-behavior theory is based on the idea that cognitive distortions and dysfunctional behaviors mediate and maintain psychological disorders. The primary aim of CBT is to enhance emotional regulation by helping individuals develop effective coping strategies and improve their ability to process information [5, 6].

CBT is based on Beck's cognitive model: the individual's subjective perspective of an event is more closely related to their emotional reaction than the event itself [6, 7]. CBT relies on two core principles; psychological problems are primarily based on unhelpful patterns of thinking and behaving, and individuals are capable of unlearning maladaptive cognitions and behaviors [8]. CBT sessions generally involve recognizing, challenging, reevaluating, and changing unhelpful thoughts, gaining a better understanding of others, learning problem-solving skills, and developing confidence in one's abilities to cope with issues. CBT sessions also involve addressing maladaptive behavioral patterns by facing fears, using role-playing to prepare for future interactions, and learning to relax the mind and body [9].

CBT sessions are distinct from other types of psychotherapy because they follow a structured format. In the initial session, the psychologist and patient collaborate to identify specific issues and establish objectives that guide the course of therapy. Together, they decide on the topics for upcoming sessions and review conclusions from prior discussions, which may include homework assignments. CBT is typically a short-term approach, often lasting between five and ten months [10, 11].

Dentists use a variety of behavior management techniques, such as "tell-show-do," stop signaling, modeling, graded exposure, and systematic desensitization, to help reduce dental anxiety in children and adolescents [12]. While these basic psychological approaches may be sufficient for adolescents with mild dental anxiety, more advanced psychological interventions based on Cognitive Behavioral Therapy (CBT) principles may be necessary for those with moderate or severe anxiety. Cognitive behavioral therapy ranges from low-intensity self-help type programs via online resources or books, up to therapy delivered by a CBT therapist for more complex or severe cases.

This therapy has proved successful in reducing dental anxiety. The basic premise of therapy is based on the idea that physical or emotional problems are difficult to change directly. Thus, this therapy focuses on changing cognitions and behaviors that contribute to physical and emotional problems [13]. There are several types of techniques: relaxation, exposure and cognitive and behavior restructuring.

Relaxation

Relaxation techniques are frequently integrated into cognitive-behavioral therapy (CBT) protocols for individuals experiencing dental anxiety. Methods such as progressive muscle relaxation (PMR), stretching-based relaxation, deep breathing, and autogenic training can be systematically taught and practiced. These techniques, introduced during therapy sessions, are subsequently practiced independently by patients at home. Mastery of these methods, which are associated with symptomatic improvement, enable patients to feel they have some control of the disease. Progressive muscle relaxation involves straining a muscle group for a few seconds and the passive focus on how the tensed muscle feels, the muscle is then released and the patient is asked to concentrate on how the muscle feels during relaxation. With regard to deep breathing, this technique is a relaxation technique that focuses on slow, modelled abdominal breathing [14].

Exposure

It is a technique to improve the reactions of fear by the fact that patients are not allowed to use avoidance behaviors that could help to reduce fear in the short term. In dental pathology, exposure is used in patients with dental anxiety. These patients are afraid of dental procedures, including sitting on the treatment chair, opening the mouth, clinical examination using a mirror or injecting local anesthesia [15].

Cognitive restructuring

Cognitive restructuring is the process by which clinicians help patients to recognize, evaluate, and if necessary, modify maladaptive or otherwise unhelpful thinking. Cognitive behavioral therapists apply cognitive restructuring to situation-specific thoughts that arise in times of stress or adversity (called automatic thoughts) as well as to negative underlying beliefs. There are studies in the literature that have reported positive results in the use of cognitive strategies for reducing dental anxiety in adults even for one session [16].

The first step involves helping the child recognize the specific negative or fearful thoughts they have about dental visits. Once the negative thoughts are identified, the therapist or dentist helps the child assess the accuracy of these thoughts. Questions like “What evidence do you have that this will happen?” or “Have you had a dental procedure before that was not as bad as you thought?” are used to help the child critically evaluate their fears [17].

After challenging the negative thoughts, the child is guided to reframe or replace them with more positive and realistic alternatives. For example, the thought “The dentist will hurt me” might be replaced with “The dentist will help me keep my teeth healthy, and if I feel uncomfortable, I can ask for a break.” Over time, with practice, these more balanced and positive thoughts can replace the child’s earlier fear-driven beliefs. For instance, the child might begin to believe, “Going to the dentist is not as scary as I thought, and I can handle it.” [18].

By changing negative thoughts, children are less likely to experience overwhelming anxiety when they think about dental visits. Children who feel more in control of their thoughts and emotions are often more cooperative during dental procedure [19]. This technique empowers children to challenge and control their own fears, helping them become more confident in managing their anxiety in future dental visits and other situations beyond the dental office, promoting resilience in the face of future challenges [20, 21].

Behavioral activation

Behavioral activation (BA) is often a component of broader treatment for depression or anxiety with cognitive behavioral therapy (CBT). But it has also been shown to be effective as a stand-alone treatment approach. BA is appropriate for children ages 7 and up, based on the individual child’s development and readiness. Readiness includes

their ability to commit to engaging in treatment. Typically includes something called a functional behavioral analysis (FBA). That's a technique for analyzing things the child is avoiding – things they need to do, like going to the dentist office to see what may be contributing to the avoidance. By understanding the function of the behavior, the therapist can make a plan to help change it [22].

The implementation of cognitive-behavioral therapy (CBT) may face challenges due to extended waiting times and associated costs [23]. A very small number of dental practitioners have confidence in the effectiveness of this therapeutic approach. Various digital tools, such as videos and audio recordings, can also facilitate CBT. While studies indicate that these methods can be as effective as therapist-led CBT, there are presently no adequately suitable programs for children with dental anxiety [24]. In children, studies have been conducted in Sweden of psychologists providing face-to-face CBT or guided online CBT as part of a paediatric dentistry care pathway [25]. In the UK a self-help resource based on the principles of CBT, called 'Your teeth are in your control' has been specifically designed for dentally anxious children to be delivered by dental teams. This resource, which is aimed at young people aged 9-16 years with mild to moderate dental anxiety, has been developed by a team of young people, parents, dental team members and psychologists [26].

There are some limitations of CBT as it is requiring special training by the dentist or presence of a psychologist who is adept in CBT. CBT approach may not be suitable for all children, particularly those who have poor cognitive abilities or who are unwilling to engage with the guided self-help CBT approach. For children with more severe dental anxiety, guided self-help CBT alone may not be enough and pharmacological approaches should be used [27].

Parents involvement in CBT

Some researchers propose that involving parents in child-focused CBT may enhance treatment outcomes [28]. This is because certain parental behaviors – such as being overprotective, overly controlling, limiting autonomy, critical, or rejecting, as well as reinforcing avoidant behavior – are believed to contribute to the development and persistence of anxiety in children. Some authors found that adolescents with social phobia viewed their parents as more overprotective compared to their peers without social phobia [29]. Overprotective behavior may prevent children from exhibiting age-appropriate behavior and being exposes to new stress situation they could not develop skills for coping by error learning [29].

The common techniques of therapy with parental involvement are psychoeducation, contingency management, cognitive restructuring, reducing parental anxiety, improving parent-child relationship, and relapse prevention. Parental psychopathology, parental inappropriate expectations and family dysfunctions are important difficulties derived from parents in CBT with anxious children.

An important component of child-focused therapy with parental involvement is improvement of the parent-child relationship, in order to reduce the level of conflict between parents and children and to facilitate communication and problem-solving skills. Positive communication patterns, such as active listening, eye contact, empathy, and restating and summarizing, instead of criticizing, blaming, and interrupting, can improve communication between parents and children [29]. Playing together and joint social activities can help improve a damaged parent-child relationship, and are considered ways to develop the experience of love and warmth between parents and children. Parents should be guided in reconstructing their relationships with their children rather than engaging in competitive, corrective and controlling behaviors [30].

Research on parents' understanding of Cognitive Behavioral Therapy (CBT) and their involvement in their child's treatment has primarily focused on qualitative studies, particularly in contexts where parents deliver CBT or participate in

parent-training modules. Initially, many parents report being surprised to learn about the negative effects of accommodating their child's anxiety. They also often experience feelings of guilt when engaging in strategies such as selective ignoring or facilitating exposure exercises to help their child face their fears [31].

Psychological therapies involve offering effective, low-intensity treatments is guided parent-delivered CBT (GPD-CBT), where a therapist supports parents in applying CBT strategies in their child's daily life [31]. Research shows that GPD-CBT is comparable in effectiveness to traditional CBT for treating childhood anxiety disorders but requires significantly less therapist involvement and fewer resources [32, 33]. Additionally, it has been demonstrated to be a cost-effective option compared to other brief psychological therapies for child anxiety. Long-term studies have also shown that most children who recover with GPD-CBT maintain their improvements over time, with minimal relapse. As a result, GPD-CBT is well-suited for a stepped-care approach, offering low-intensity treatments for mild-to-moderate anxiety, while reserving intensive interventions for severe cases or those unresponsive to initial treatments [33].

It has been proposed that involving parents in CBT for children with anxiety disorders may aid in setting therapeutic goals. This can be achieved by identifying factors that influence the therapy process, such as levels of parental pathology and parenting styles, and by providing opportunities to apply therapeutic techniques outside the clinical setting [34]. Although it is commonly believed that parental involvement enhances treatment outcomes in child-focused CBT, comparative studies do not consistently support this assumption. Research in this area has primarily focused on diagnostic evaluations and assessments of children's anxiety levels. It has been suggested that incorporating evaluations of negative family dynamics, such as conflict levels and parental pathology, alongside diagnostic assessments, would offer a more comprehensive approach. Parental involvement in CBT is thought to help determine how parents contribute to and sustain their child's anxiety, while also providing insight into how CBT can effectively promote positive behavioral changes in both children and parents [34].

There is a lack of extensive understanding regarding how children and their caregivers view CBT within dental settings. A study explored the emotions, thoughts, and experiences of children and parents related to CBT, as well as their expectations of the therapy's outcomes [35]. The study revealed that children reported improved ability to cope with dental procedures and reduced anxiety after undergoing CBT. Both children and their parents regarded CBT as a beneficial experience [35].

Conclusion

Cognitive Behavioral Therapy (CBT) is a widely used psychological treatment that focuses on identifying and changing negative thought patterns and behaviors. It is based on the idea that how we think (cognition), feel (emotion), and act (behavior) are interconnected, and that changing one can influence the others. Patients managed with psychological techniques often show significant improvements in their conditions when compared with other techniques. This is because the strategies enhance trust, feelings of control and the development of coping skills in both the child and professionals. These interventions can be successfully implemented in clinical dental settings.

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