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Exploring Parental Perspectives: Acceptance and Experiences of Different Behavior Management Techniques Used in Pediatric Dentistry

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ABSTRACT
Background. Dental anxiety is a highly prevalent condition that negatively affects children's oral health and quality of life. Many behavior management techniques (BMTs) have been recommended for addressing this case. As there is a lack of studies that evaluate how parents experience different BMTs, this paper aims to explore parental acceptance and perspective of cognitive behavioral therapy(CBT), auricular plaster therapy (APT), and tell-show-do (TSD) for treating their children's dental anxiety.
MethodsSixty children with preoperative dental anxiety received either CBT, APT, or TSD techniques to manage dental anxiety. After the dental appointment, parentsrated their acceptance and satisfaction with the intervention their child received using a five-point Likert scale. Statistical analysis was done using the Chi-square test.
Results The percentage of parents who rated CBT, APT, and TSD as highly acceptable was 95%, 10%, and 50% respectively. None of the participating parents rated CBT and TSD as a highly unacceptable technique. However, 5% of parents considered APT as a highly unacceptable approach to reducing the state of child anxiety.
ConclusionThe results show that the majority of parents had positive experiences with CBT and its outcome as their children's anxiety status was effectively reduced by this technique, followed by TSD. APT was the least acceptable technique.
KEYWORDS: Parental acceptance**,**cognitive behavioral therapy, auricular plaster therapy, tell-show-do, dental anxiety.

I. INTRODUCTION

Oral health care for children has an important impact on their overall health; however, dental anxiety can be a major obstruction to children receiving dental treatment. (1) Therefore, children with dental anxiety often suffer from oral health problems and bad oral health-related quality of life. (2) Treating children with dental anxiety or behavior issues involves a twofold objective: first managing the child's dental anxiety using appropriate behavior management techniques (BMTs); and second, treating the dental problem the child is experiencing. (3)

Children's anxiety management could be achieved by pharmacological and non-pharmacological approaches. No one approach will be applicable in all situations, but the appropriate management technique(s) should suit the child's needs and his/her anxiety level. (4) Since the safety concerning the use of pharmacological techniques remains controversial, there are continuous recommendations to explore new nonpharmacological BMTs that are easy and cost-effective. (5)

Cognitive behavioral therapy (CBT) is a nonpharmacological technique that focuses on changing negative thoughts and behaviors. It is based upon the principle that learning to think differently would enable children to feel and act differently. With CBT, anxiety is managed by restructuring negative thought patterns, teaching relaxation techniques, and finally changing problematic behaviors. (6)

Auricular plaster therapy (APT), another nonpharmacological technique, is a non-invasive approach of Traditional Chinese Medicine. The technique is based upon the concept of Qi (meaning "life force, energy flow"). The Qi in the body is collected at specific points, spreading out from head to toe. This treatment manipulates the flow of Qi in various ways to generate a therapeutic effect. It was found that stimulating these points by applying pressure changes how the nervous system releases neurotransmitters and hormones such as b-endorphin, serotonin, and adrenocorticotropic.

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These reduce the level of heart rate and cortisol hormone in the blood, thereby improvingmood, and decreasing anxiety. [7]

Tell-show-do (TSD) is a basic method and one of the most commonly used BMTs. It includes a verbal explanation in suitable words to the child's cognition; followed by a demonstration of all aspects of the procedure, and finally performing the procedure immediately. This traditional technique aims to establish communication and enhance the cooperationof the child. [8]

Understanding parental perspective towards various (BMTs) is essential in pediatric dentistry as it encourages parental trust, thusenhancing optimal dental treatment for children. [9]There is limited researchon how parents experience different BMTs in dentistry. Authors in dentistry seldom inquire about parents' subjective treatment experiences. It was reported that only 5.3% involve parents' views toward the behavior management approaches. [10]

The purpose of this study is to explore the parents' experience and acceptance of CBT, APT, and TSD for managing their children's dental anxiety.

II.MATERIALS AND METHODS

The present study was designed as a cross-sectional questionnaire survey to rate parental acceptance and experience of different behavior management techniques used to manage their child's dental anxiety. It was conducted at the Department of Pediatric Dentistry, Mansoura University, Egypt, and received formal approval from the university's ethical committee (Approval No. A0503023 PP). Parents were assigned toa written informed consent was before enrolling children.

The study included sixty anxious children of 4 to 7 years of age who were treated using CBT, APT, and TSD (N=20 in each technique) for their dental anxiety. One of their parents was asked about their opinion and satisfaction with the behavior management approach used, using a five-point Likert scale. In the scale titled "**How acceptable you are of the method used to treat your child's anxiety?",** parents rated each therapy as highlyacceptable, acceptable, uncertain, unacceptable, or highly unacceptable.

Parents claimed that their children had had negative dental experiences related to dentistry as the main reason for anxiety. The reasons for these experiences varied. These and the level of children's anxiety status were identified by using a (CFSS-DS) questionnaire survey filled out by parents. The framing of the survey question "How afraid is your child of [different items in dentally related situations,]?" [11] The majority of parents claimed that their children are afraid the most of intraoral injections. To verify the level of each child's anxiety status that was claimed by parents, his/her anxiety status was observed and rated according toVenham Clinical Anxiety Scale (VCAS) [12], the higher the VCAS score, the more anxious the child is. Children fulfilling the criteria of anxious children according to this scale were involved in the study and randomly assigned to one of these groups (CBT, APT, and TSD).

Children managed using CBT

CBT is a multi-component therapy that gathers multiple interventions that the dentist can modify to manage childhood dental anxiety. The following techniques were used to employ CBT in a row: 1. The dentist played with the children 15 minutes before starting the dental appointment to establish rapport between them. 2. Children watched an animated video modeling that stimulated the actual dental office environment. 3. Children were taught a relaxation technique using the stress ball, they were informed that by squeezing the stress ball, all of his/her fears and concerns would empty and the negative feelings would transfer to the ball. 4. Throughout the dental procedure, children listened to audio music according to their choice. 5. Finally, positive emotions were reinforced verbally to each child. These techniques have been used effectively to manage children's anxiety during the dental appointment.[13-16]

Children managed using APT

Seeds that have an adhesive backing were stuck onto children's ears at four anxiety-reducing points for 7 days before the dental appointment. The participants pressed the acupressure points with the seeds three times per day for 20 seconds under parental supervision. The participants were given a sticker chart as a daily reminder to awaken them to press the seeds 3 times a day.[17]

Children managed using TSD

The dental procedure was verbally explained in a suitable language to the child's understanding; followed by a demonstration of all aspects of the procedure, and finally, the dental treatment was performed immediately without delay.

After Submitting those interventions parents were asked about their acceptance rate of the efficacy of these techniques to reduce the anxiety status of

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their children. The acceptance rating was determined on a five-point Likert-type scale ranging from 1 (highly acceptable) to 5 (highly unacceptable).

Statistical analysis

Data were collected, tabulated then statistically analyzed using the Statistical Package of Social Science (SPSS) program for Windows (Standard version 26). Qualitative data were described using numbers and percentages. The association between categorical variables was tested using the Chi-square test. A P-value level less than or equal to 5 is considered significant.

Table 1| Parental acceptance of different behavior management techniques

Parental acceptance	CBT group (no=20)	APT group (no=20)	TSD group (no=20)	Test of significance	P value
Highly acceptable	19 (95 %)	2 (10.0%)	10 (50%)	χ^2=36.27	≤0.001* (S)
Acceptable	1 (5 %)	11 (55%)	10 (50 %)		
Uncertain	0 (0 %)	6 (30%)	0 (0 %)		
Unacceptable	0 (0 %)	0 (0 %)	0 (0 %)		
Highly Unacceptable	0 (0 %)	1 (5%)	0 (0 %)		

χ^2: Chi square test, *significant p ≤0.05.

III. RESULTS

Statistical analysis revealed no significant differences in age and gender distributions between the studied groups. The mean age of CBT, APT, and TSD was (5.40, 5.35, and 5.50 respectively), and the percentage of the participating female children was (45.0%, 60.0%, and 40.4% respectively).

All parents invited to participate agreed to complete the questionnaires (100% compliance). The parental acceptance of three different types of therapy to manage their children's dental anxiety is described in **Table 1**.

The table indicates that 95% of parents rated CBT as a highly acceptable technique and 5% of them considered it as an acceptable technique to manage CDA. Also, 50% of the parents rated TSD as highly acceptable and 50% as acceptable. None of the parents rated CBT or TSD as uncertain, unacceptable, or highly unacceptable.

It is further indicated that only 10% of the parents rated APT as highly acceptable, while 55% considered it an acceptable approach, 30% were uncertain of the therapeutic effect, and 5% as highly unacceptable.

IV. DISCUSSION

Despite the significant advancements in dental, materials, and techniques, childhood dental anxiety (CDA) persists unchanged. There are continuous recommendations to explore new anxiety management approaches that are easy and without adverse effects**.** Dentists cannot use them unless they obtainparents' approval as they are legally responsible for their children. [18] Hence, understanding parental perspectives regarding various BMTs is considered an essential approach in pediatric dentistry.

Many children avoid going to the dentist because of their anxious feelingstoward dental appointments. This can worsen oral health status and raise the cost of treatments later on. To manage this condition, clinicians must diagnose the state of the child's dental anxiety, have a clear understanding of why these children experience this feeling, and treat this condition. The age group of this study was 4 to 7 years of age because dental anxiety was found to be more prevalent in those of a younger age and declined as children became older. [19]

Our choice to investigate the parental perspective of dental treatment was motivated by the lack of research regarding parents' subjective experiences of BMTsfor their children in dentistry. Parents' experience of behavior management interventionsimpacts children's responsiveness, whichinfluences the quality of therapy. [20] According to research on depressed children,

parents' positive attitudes toward their children's treatment encouraged treatment outcomes. [21]

The results showed that 95% of parents categorized CBT as a highly acceptable method to manage dental anxiety. These results are in accordance with a previous qualitative study by Shahnavaz et al. (2015), [22] where parents were questioned on emotionsand experiences related to the CBT technique, as children experienced an improvement in their ability to handle the dental procedurefollowing CBT. The results confirmed that parents perceived CBT as a positive event.

APT was the least acceptable therapy, with only 10% of the parents rating it as highly acceptable, 55% as acceptable, 30% as uncertain, and 5% as highly unacceptable. To the best of our knowledge, this study is the first that focuses on parents' experiences of APT in dentistry. APT was found to be an effective approach to treating anxiety, but it is new in pediatric dentistry. Thus, there is a need for more and more scientific studies to confirm the promising outcomes of this approach.

A semi-structured interview was done with parents in the APT group. As mentioned before, children pressed the ear seeds three times per day for 7 days. During these days, parents who rated APT as highly acceptable and acceptable noticed that their children became quieter at home and had an improvement in their periods of sleep. In comparison, others were uncertain whether the reduction of anxiety status was influenced by the ear seeds themselves. They claimed that the improvement of child behavior is related to the child being managed with patience.

To our knowledge, this is the first study to evaluate the APT approach on children from aMiddle Eastern region. Parental perspectives on this therapeutic modality may be influenced by the diverse cultural backgrounds inherent in this intervention.

V.CONCLUSION:

CBT was the most highly acceptable technique according to parents' evaluation followed by TSD, while APT was the least acceptable approach.

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