

BEHAVIOUR GUIDANCE DURING DENTAL TREATMENT IN 3-6-YEAR-OLD CHILDREN

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Abstract

Aim: To investigate the dental practitioners' use of non-pharmacological behaviour guidance techniques in attending 3-6 years old paediatric dental patients.

Material and methods: An anonymous, self-completed mailed survey was sent to 200 dentists. The recorded information included items on the frequency of using different non-pharmacological behaviour management techniques during dental treatment of 3-6 years old children.

Results: The most frequently used behaviour guidance technique was Positive reinforcement (62.71%). Tell-Show-Do and Stop signals were selected by about half of the participants to be used for 3-6 years patients. No one reported the use of Restraint as a non-pharmacological technique. Less than 3% of dental practitioners used Latent inhibition and Cognitive restructuring for behaviour management.

Conclusion: Dental specialists used a wide variety of non-pharmacological behaviour management techniques among paediatric dental patients. Due to the specific indications, preparation and time consumption, cognitive behaviour guidance was not suitable for use in 3-6-year-children. Further research is required to investigate the dental practitioners' use of pharmacological techniques in this age group.

Keywords: *behaviour management techniques, 3-6-year-old, paediatric dentistry*

Introduction

The child's behaviour on each dental visit depends on the variables such as age, parental behaviour, parental anxiety, medical history, type of dental procedure, behaviour guidance/management and the procedural techniques followed by the dentist [17].

The preschooler can describe emotions and the situations eliciting them. 3-6 years is a time of self-identity development outside the family and inquiry for detailed information about his environment. The imaginary play during this period enables social-emotional and cognitive growth and the child develops school readiness including curiosity and intellectual skills. To guide the child's behaviour during dental treatment successfully, it is necessary to understand his or her intellectual level and how thought processes work associated with the relevant age period [4,8].

Dentists have a wide range of behaviour management techniques (BMTs) to meet the needs of the individual child [9]. The American Academy of Pediatric Dentistry (AAPD) has issued a set of guidelines on behaviour guidance for paediatric dental patients [3]. BMTs have been classified as pharmacological and non-pharmacological, communicative (universally accepted) and advanced BMTs, or common sense techniques and formal relaxation techniques [10,18].

In contrast to the recommendations of the many professional dental organizations across the world, the results of recent studies showed that the mean age of children at their first dental visit was 3.79 years [2,14,19]. Dental practitioners' knowledge, attitude, and awareness of the use of BMTs are important factors and a key component to preventing dental fear and anxiety for future dental visits.

Therefore, the objective of the study was to investigate the dental practitioners' use of the non-pharmacological BMTs in attending 3-6-year-old paediatric dental patients.

Materials and methods

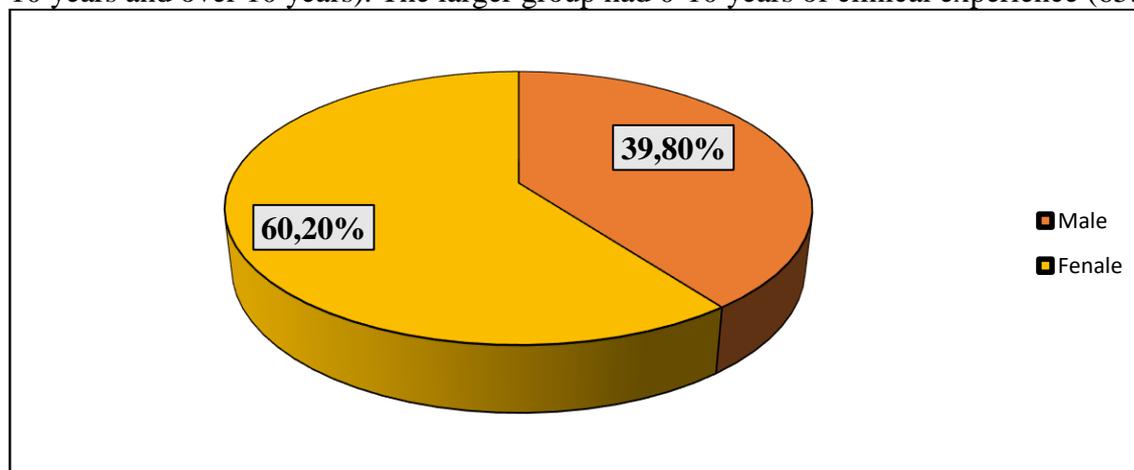
A cross-sectional study was approved by the Committee for Scientific Research Ethics, Medical University of Plovdiv, Bulgaria (Document No.P-1371/30.04.2018). It consisted of an anonymous, self-completed mailed survey. Subjects were sent an email describing the study and inviting their participation. The participants were randomly selected from the official register of the Bulgarian Dental Association in Plovdiv, Bulgaria. Two hundred dentists were invited to participate in the study, extrapolated using a randomization program from the complete email list of the scientific society's members. The mail included a brief cover letter explaining the purpose of the survey. It stressed the anonymity of the survey and that the responses would be aggregated. The surveys were mailed within three weeks. The study was conducted in September 2020 and consisted of two sections, including multiple-choice and close-ended questions. Section I included demographic questions, including gender, age and working experience. From section II information concerning the use of the different non-pharmacological BMTs during dental treatment of 3-6-year-old children was collected. To limit the survey to dental practitioners who provide dental care to children, the first question was 'Do you provide dental care to children at your dental practice?'. In case of a negative answer, the respondent was excluded from the study.

Statistical analysis

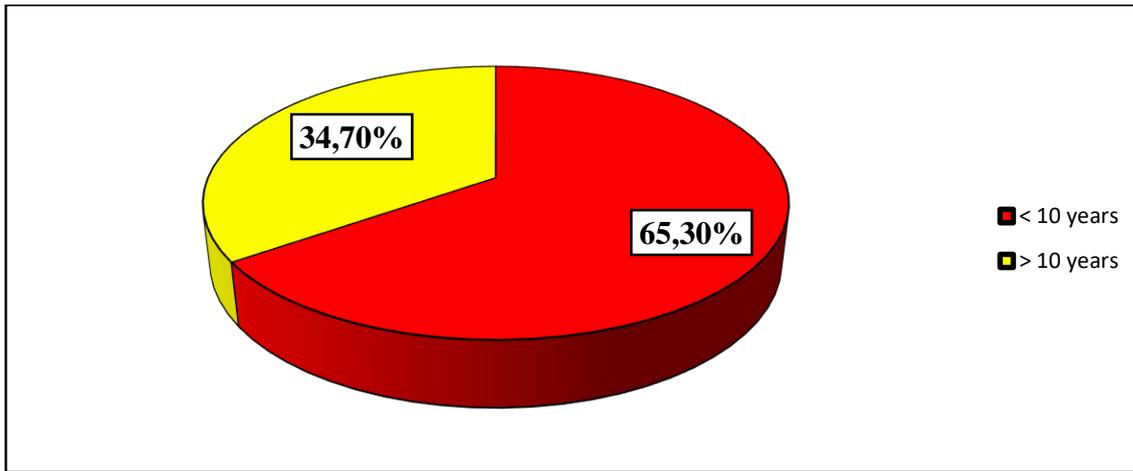
The obtained data were tabulated, processed and analyzed using SPSS (Statistical Package for Social Science software) version 21.0 (IBM, USA). Descriptive statistics were generated to estimate demographic data and the frequency of using BMT. The significance level is considered <0.05 .

Results

The overall response rate across the investigated group of respondents was 59.01% (out of the 200 surveys that were mailed, 118 subjects were included in the statistical analysis for this study). The sample size was $N=118$ dentists. Demographic information about responders and their practices is reported in Figure 1. Overall, the mean age of 118 subjects responding to this item was 36.75 ± 9.16 years old. The subjects were asked to indicate one of the two categories of total years in practice (0-10 years and over 10 years). The larger group had 0-10 years of clinical experience (65.3%).



1a. Gender distribution of dentists



1b. Distribution of dentists according to the total years in practice

Figure 1a-b. Demographic and practice information of survey practitioners, N=118

The most frequently used behaviour guidance technique was Positive reinforcement (62.71%). Tell-Show-Do (TSD) and Stop signals were selected by about half of the participants to be used for 3-6 years patients. No one reported the use of Restraint as a non-pharmacological technique. Less than 3% of dental practitioners used Latent inhibition and Cognitive restructuring for behaviour management (Figure 2).

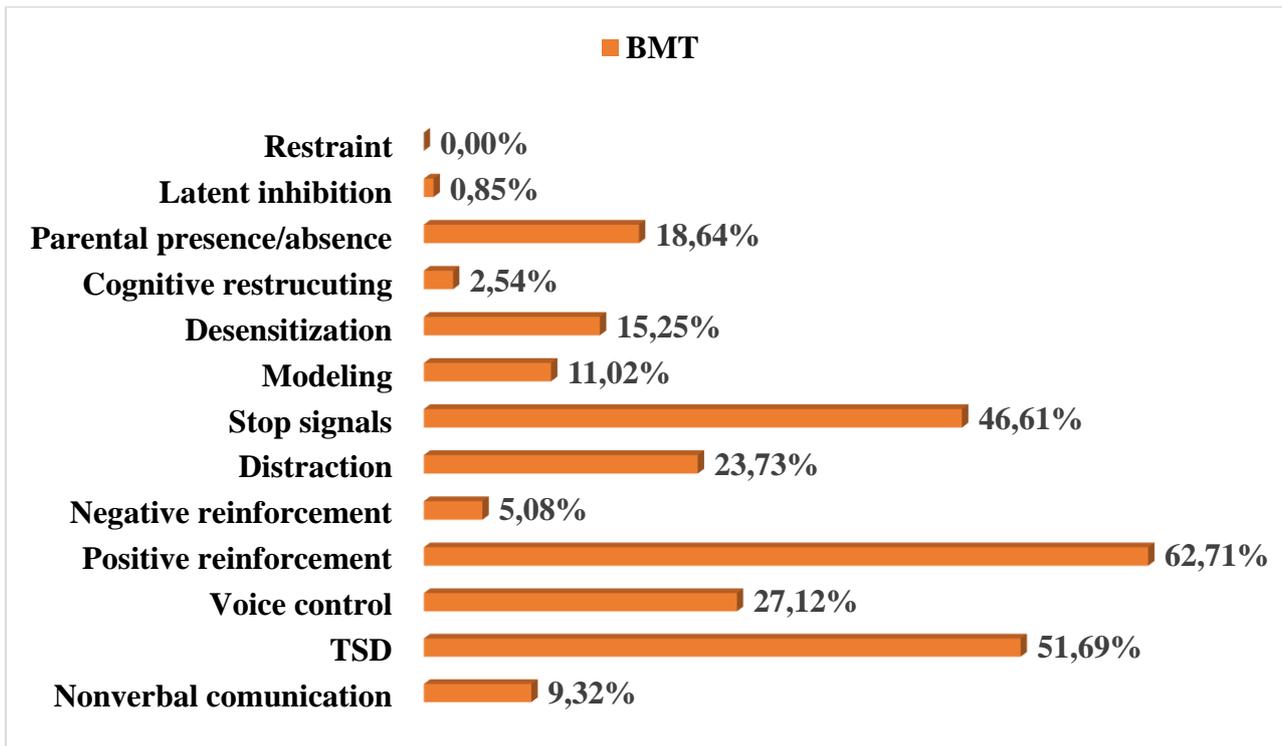


Figure 2. Frequency distribution of practitioners' use on BMTs, N=118

Discussion

The interpretation of data obtained in our study refers to the patients` age which is a time of representing objects symbolically and attaining imaginary means of thinking. Adair et al. stated that when children reach the period of 3-6 years, they are intensely curious about the dentist`s office and

eager to learn about the new and unusual things around them [1]. Moreover, explaining the treatment and allowing them to handle and test the instruments for work would be a motivating factor in managing these children [22].

The results of the current study are in line with other reported surveys where Positive reinforcement has been demonstrated to be used by most respondents during the treatment of children in the USA [3,13,20]. Positive reinforcement is an effective technique to reward desired behaviours during a dental visit and, thus, strengthen the recurrence of those behaviours. It is a universally accepted behaviour management technique when providing dental care to children and is based on longstanding psychological principles that have been consistently demonstrated to be effective [7,11]. AAPD indicates this technique as the most successful, yet simple basic BMT which can be used with all paediatric patients regardless of their cooperation level [3]. Peretz et al. also considered that receiving Positive reinforcement would facilitate positive dental attitudes in paediatric dental patients and promote future dental attendance [16]. The results of past studies for the effect of Positive reinforcement as a behaviour management technique have received a significant evaluation, confirmed by a study among UK paediatric patients in 2013 [7,11]. However, a theme related to the suitability and the personal value attached to receiving Positive reinforcement emerged. The authors consider as a compulsory requirement the child to appreciate the value of the prize [16].

TSD took second place after Positive reinforcement for behaviour guidance of 3-6-year-old patients, as it is safe, non-invasive and being acceptable among practitioners and parents [3, 6, 12, 18]. The technique involves verbal explanations of the procedures in phrases appropriate to the developmental level of the patient (tell); demonstration for the patient of the visual, auditory, olfactory and tactile aspects of the procedure in carefully defined, non-threatening setting (show); and then, without deviating from the explanation and demonstration, completion of the procedure (do). In line with the present study, Rajasekhar et al. reported that 43.1% of participants in their study opted for TSD for building rapport with children of age 4-7 years [17]. TSD has shown to be efficacious in reducing anticipatory anxiety in new child patients and it is less useful with previous dental experience [3, 18]. As the age of the first dental visit of children in Bulgaria is the preschool period (ages 3 to about age 6), more than half of the respondents in the present study reported it as one of the most effective strategies in behaviour guidance.

Another technique is the use of signaling or the so-called 'Stop signals technique' which gives the patient a means to communicate with the dental practitioner during the procedure to which the dentist is sure to respond. In our survey, it was determined as the third most used and most effective BMT in the treatment of children during the preschool age. In line with these results, Australian dentists were the only ones to report allowing the child to exercise some form of control over the treatment. As benefits of its use, the authors considered the provision of control aiding patient's active role during treatment, relief of worry, distress and physical discomfort treatment [22].

No one reported the use of Restraint as a non-pharmacological technique. Restraint is the act of physically limiting the body movements of the child in order to facilitate dental procedures and to decrease possible injuries to the child and/or the dentist. In line with the current study, the use of restraint has been reported as the least used BMT amongst UK dentists [1,5]. However, our findings do not correspond with past studies' results reporting the use of physical restraint by more than 80% of respondents [1]. The controversial results are due to the restriction of the use of physical restraint in Europe, while in the USA and Australia the process of restraint is acceptable [21].

The present results showed that Latent inhibition and Cognitive restructuring have been used by very few practitioners (less than 3%). The specific indications, preparation and time consumption required for such techniques are likely reasons for the low frequency of use reported in the current and a previous study [15].

Conclusion

Dental specialists used a wide variety of non-pharmacological behaviour management techniques among paediatric dental patients. Due to the specific indications, preparation and time consumption, cognitive behaviour guidance was not suitable for use in 3-6-year-children. Age-related developmental changes in general cognitive abilities are crucial for the successful use of communicative BMTs. Further research is required to investigate the dental practitioners' use of pharmacological techniques in this age group.

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