



Knowledge and Attitudes of Dental Practitioners Regarding the Use of Behaviour Management Techniques for Paediatric Dental Patients

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Received: 14 Feb 2021 ♦ **Accepted:** 18 Mar 2021 ♦ **Published:** 28 Feb 2022

Citation: Shindova M. Knowledge and attitudes of dental practitioners regarding the use of behaviour management techniques for paediatric dental patients. *Folia Med (Plovdiv)* 2022;64(1):127-33. doi: 10.3897/folmed.64.e64416.

Abstract

Introduction: Understanding children's behaviour and development is crucial in managing and treating paediatric dental patients. Dental practitioners are expected to be aware of the behaviour management techniques which will facilitate routine dental treatment of the child dental patient.

Aim: The objective of the study was to investigate dental practitioners' awareness and use of non-pharmacological behaviour management techniques in attending paediatric dental patients in Plovdiv, Bulgaria.

Materials and methods: An anonymous, self-completed mailed survey was sent to 200 dentists. The recorded information included items on awareness and frequency of using different non-pharmacological behaviour management techniques, socio-demographic questions, working experience, specialty status.

Results: Survey response was 59% and 118 dental practitioners participated in the study. Tell-show-do, positive reinforcement, and stop signals were considered the most used techniques by more than 50% of participants. Less than 7% of the respondents reported the use of desensitization, cognitive restructuring, and latent inhibition.

Conclusions: Most of the dental practitioners had a medium level of awareness of the non-pharmacological behaviour management techniques. The lack of training in using these techniques, however, is of concern. There is a need to build awareness among the dentists associated with the child psychology and its application during treatment.

Keywords

behaviour management techniques, paediatric dentistry, survey

INTRODUCTION

Children exhibit a broad range of physical, emotional, intellectual and social development and a wide diversity of attitudes and temperament. Thus, understanding chil-

dren's behaviour and development is crucial in managing and treating paediatric dental patients. Dental practitioners are expected to be aware of behaviour management techniques (BMT) which will facilitate the routine dental treatment of the child dental patient. Furthermore, they

are encouraged to utilize BMT consistent with their level of professional education and clinical experience. Dentists must have a wide range of behaviour guidance techniques to meet the needs of the individual child and be tolerant and flexible in the implementation of these techniques.¹ The dentists must choose which anxiety reduction method to pursue, keeping in mind that some of these methods require specialized training or licensure. The American Academy of Pediatric Dentistry (AAPD) has issued a set of guidelines on behaviour guidance for paediatric dental patients. The successful implementation of these guidelines enables the oral health team to perform a quality treatment safely and efficiently, nurturing a positive dental attitude.² Over the recent years, it has been increasingly recognized that greater effort should be directed towards behaviour management and psychological interventions, which can reduce patient's dental anxiety in the long term without the need for pharmacological support.³ Dentists must rely on the behaviour guidance or management techniques as alternatives or adjuncts to communication in treating the uncooperative child. It is necessary to predict a child's behaviour and identify the children at risk of behaviour problems before such situation arises. It is essential to develop an appropriate management strategy during the first dental visit.⁴

Different authors have reported the application of BMTs in different countries. In the USA, the southern dentists used less aversive techniques and there was a reduction in the use of hand over mouth exercise (HOME). Significant differences by sex and age were seen in the use of non-verbal communication and advanced techniques. The most favoured technique was parental presence in the dental operatory, though older males were significantly less likely to allow parental presence for some procedures.⁵ In Israel, dentists used tell-show-do (TSD) and material reinforcement more than any other behaviour management strategies.⁶ Whereas in Australia, the most common strategies were permitting the child to exercise some form of control over the treatment, waiting rooms with playing materials and using TSD approach. Few Australian dentists used HOME. Younger dentists tended to use BMT more frequently than older ones. Women dentists more frequently spent more time with the child before entering the dental office, set shorter appointment sessions and permitted the child to hold a toy or mirror during dental treatment.⁷ In India, TSD was the most common BMT used and more aversive BMTs were rarely used in the dental office. Also, in Nigeria, the most frequently used BMTs are TSD followed by positive reinforcement, modeling, desensitization, restraints, and HOME.

No publications reporting the awareness or the use of BMT in Bulgaria were retrieved despite its importance in creating a positive attitude towards dentistry which should best begin during early childhood, subsequently creating a child's healthy oral environment and a future healthy adult.

AIM

Therefore, the objective of the study was to investigate dental practitioners' awareness and use of the non-pharmacological BMTs in attending paediatric dental patients in Plovdiv, Bulgaria.

MATERIALS AND METHODS

The cross-sectional study consisted of an anonymous, self-completed mailed survey. Potential subjects were sent an email describing the study and inviting their participation. Two hundred dentists were invited to participate in the study. The participants were randomly selected and only currently practicing dentists were included. 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 a three-week period. The study was conducted in September 2020 and consisted of two sections. Section I included demographic questions, including gender, age, work setting, experience, specialty status-general practitioner versus specialist. From section II, information concerning the awareness and frequency of using the different non-pharmacological BMT was collected. Ethical approval was obtained from the University of Plovdiv Research Ethics Committee before circulating the questionnaire (document No. P-1371/30.04.2018).

Statistical analysis

The obtained data were tabulated, processed and analyzed using a SPSS version 21.0 (IBM, USA). Descriptive statistics were generated to estimate demographic data and the frequency of using BMTs.

RESULTS

Out of the 200 surveys that were mailed, 118 subjects (59% response rate) were included in the statistical analysis for this study. The sample size was $n=118$ dentists. The demographic information about the responders and their practices is shown in **Table 1**. Overall, the mean age of 118 subjects responding to this item was 36.75 ± 9.16 years. The subjects were asked to indicate one of four categories of total years in practice (0-5 years, 5-10 years, 10-20 years, and over 20 years). The largest group had 5-10 years of clinical experience, while the other groups were reasonably well distributed. Female respondents outnumbered male respondents by 1.5 to 1. One hundred and thirteen dentists (95.8%) were working in urban located facilities. A large portion (81.4%) reported to have not received formal training on BMT.

Table 2 summarizes the awareness and usage of different BMTs by the subjects. Responses regarding the general

Table 1. Demographic and practice information of the investigated practitioners (n=118)

	n	Percentage of responders
Sex		
Male	47	39.8%
Female	71	60.2%
Total years in practice		
<5 years	23	19.5%
5–10 years	54	45.8%
10–20 years	26	22.0%
>20 years	15	12.7%
Specialty status		
General practitioner	69	58.5%
Other specialty, not including paediatric dentistry	40	33.9%
Paediatric dentistry	9	7.6%
Paediatric dentistry + other specialty	0	0
Location of facility		
Urban	113	95.8%
Rural	5	4.2%
Received formal training on BMT		
Yes	22	18.6%
No	96	81.4%

Table 2. Frequency of awareness and usage of BMT among the participants (n=118)

Techniques	Awareness of BMT by respondents			Usage of BMT by respondents		
	n	%	Mean	n	%	Mean
Nonverbal communication	44	37.29%	2.81	13	11.02%	1.89
Tell-show-do	77	65.25%	2.36	62	54.54%	3.12
Voice control	68	57.63%	0.82	36	30.51%	3.02
Positive reinforcement	97	82.20%	3.63	78	66.10%	2.89
Negative reinforcement	31	26.27%	0.67	7	5.93%	0.68
Distraction	64	54.24%	3.22	39	33.05%	3.05
Stop signals	92	77.97%	2.03	63	53.90%	3.38
Modelling	55	46.61%	1.33	17	14.41%	2.03
Desensitization	38	32.20%	0.58	9	7.63%	0.97
Cognitive restructuring	13	11.02%	1.77	5	4.24%	1.04
Parental presence/absence	61	51.69%	2.89	16	13.6%	2.01
Latent inhibition	7	5.93%	0.43	2	1.69%	0.93
Restraint	20	16.95%	1.92	-	-	-

use of BMT were as follows: nonverbal communication, TSD, voice control, positive and negative reinforcement, distraction and stop signals, modelling, desensitization, cognitive restructuring, parental presence/absence, latent inhibition, and restraint. More than half of the participants were aware of 6 of the 13 studied BMTs. The majority of respondents were familiar with the positive reinforcement technique (82.20%) and were comfortable using this technique (66.10%). The second most recognized techniques

were stop signals (77.97%) and TSD (65.25%), with 53.90% and 54.54% of the respondents, respectively, indicating they used them in the treatment of paediatric dental patients. The use of more time-consuming techniques, such as latent inhibition and cognitive restructuring, was less frequent. Latent inhibition was the least commonly recognized technique, only 7 (5.93%) respondents were aware of it, and few dentists found this technique effective for anxiety reduction. Interestingly, there are several well-recognized tech-

niques among the practitioners but they are rarely used in a routine dental practice, such as nonverbal communication, modelling, parental presence/absence. Techniques percentages, number of responses, and their means are illustrated in **Table 2**.

DISCUSSION

The response rate to this survey (59%) is an indication of the interest that dental practitioners have in the topic of behaviour management of child dental patients. Generally, the results of the present study show that dental practitioners had a medium level of awareness of BMTs which is an encouraging finding. With these results, providers have evidence to support or change their BMTs according to their practice characteristics as they continue to gain experience throughout their careers. To improve the quality of oral health in children, more training courses on BMT are needed. In the present study, practitioners' awareness of BMT varied, the highest being for positive reinforcement (82.20%), a technique which is simple and easy to be remembered and applied, and the lowest for latent inhibition (5.93%) which is not universally applied and time-consuming.

The great majority of respondents in our investigation employed communicative BMTs. TSD and positive reinforcement are two of the most successful yet simple basic BMTs which can be used with all paediatric patients regardless of their cooperation level.² In the present study, these two techniques were found to be the most popular techniques in clinical daily practice. A recent survey of members of AAPD reported similar popularity (99%) with both techniques.^{2,8} TSD is one of the most used technique as it is safe, non-invasive and is acceptable for both practitioners and parents.^{2,5,9,10} Positive reinforcement was reported as highly effective in the treatment of paediatric patients by the respondents in the present study, as the child derives from a sense of the industry and accomplishment during this stage of development. Peretz et al.⁶ also consider that receiving positive reinforcement facilitates positive dental attitudes in paediatric dental patients and promotes future dental attendance.

Although stop signals was reported as the most accepted BMT by children in an exploratory study investigating children's perceptions of dental BMTs in 2013, there is a dearth of literature reporting its use among dental practitioners.¹¹ Australian dentists were the only ones to report allowing the child to exercise some form of control over the treatment.⁷ It was utilized by the vast majority of the respondents in the present research which was associated with the benefits of its use – provision of control aiding patient's active role during treatment, relief of worry, distress, and physical discomfort.

Distraction is also a simple and effective BMT that could be used with any child regardless of their cooperation level.² The results of the current study are in line with other

reported surveys where the routine use of such technique is less than TSD and positive reinforcement.¹² In contrast, Adair et al. and Williams et al. demonstrated that distraction has been reported to be used by the majority of respondents during the treatment of children under 3 years.^{13,14}

Desensitization, cognitive restructuring and latent inhibition are useful techniques in the management of anxious children and those with specific dental phobias.¹⁵ 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.¹² These techniques usually involve multiple patient contacts which systematically help children overcome their fear or phobias, and multiple sessions prior to dental appointment. They require dentists to seek additional training or assistance from a professional familiar with that method. These factors may account for the number of dentists who were unfamiliar with latent inhibition in our research (5.93%). In 2016 Williams found that dental practitioners are least familiar with this technique, as it is a psychological technique that is not a traditional part of dental curricula.¹⁴

Voice control is classified as a basic BMT and appropriate training and application are crucial for the success of such technique and avoidance of unnecessary patient's distress. Although some authors in the USA and Arabian region reported high frequency use of voice control (92%), in the present study, only one third of the respondents selected it for anxiety reduction during treatment of paediatric dental patients.^{12,13} Our study corresponds with a clear trend indicating a decline in the use of the voice control technique among dentists.¹⁶ This is consistent with a continual decline in the acceptance of voice control as an appropriate BMT among parents.^{17,18}

In past studies, the use of physical restraint was reported by more than 80% of respondents.¹³ Restraint techniques are recommended in specific situations.² A study in the Arabian region showed a wide use of protective stabilization whose results are within the range reported by members of the AAPD (68%–73%).^{12,13} In line with the current study, the use of restraint has been reported as the least used technique amongst UK dentists.¹⁹ The British Society of Paediatric Dentistry and AAPD guidelines recommend that practitioners using such advanced techniques as restraint should obtain structured training through residency programmes, graduate programmes and/or extensive continuing education courses. Self-training might be acceptable with basic techniques such as TSD. Obtained informed consent, prior to the use of advanced BMTs, has been recommended for restraint.²

CONCLUSIONS

The results of the present study highlighted the use of a variety of non-pharmacological BMT among dental specialists. Most participants were aware of BMTs, although few acknowledged having adequate skills to apply the

techniques. Almost all respondents have rated the TSD, positive reinforcement, and stop signals as the most commonly used non-pharmacological BMTs. There is a need to build awareness among the dentists associated with child psychology and its application during treatment. The future exploration of BMT trends will be interesting as the profession begins adopting alternative caries management strategies that may decrease their use.

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Осведомлённость и отношение практикующих стоматологов к применению методов управления поведением у пациентов детского стоматологического отделения

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Дата получения: 14 февраля 2021 ♦ **Дата приемки:** 18 марта 2021 ♦ **Дата публикации:** 28 февраля 2022

Образец цитирования: Shindova M. Knowledge and attitudes of dental practitioners regarding the use of behaviour management techniques for paediatric dental patients. *Folia Med (Plovdiv)* 2022;64(1):127-33. doi: 10.3897/folmed.64.e64416.

Резюме

Введение: Понимание поведения и развития детей необходимо для проведения лечения пациентов детского стоматологического отделения. Ожидается, что стоматологи будут знакомы с методами управления поведением, которые помогут в рутинном стоматологическом лечении пациентов детского стоматологического отделения.

Цель: Целью исследования было изучить осведомлённость стоматологов и использование немедикаментозных методов управления поведением в лечении пациентов детского стоматологического отделения в Пловдиве, Болгария.

Материалы и методы: 200 стоматологам была разослана анонимная анкета для самостоятельного заполнения. Сообщаемая информация включала вопросы осведомлённости и частоты использования немедикаментозных методов управления поведением, социально-демографические вопросы, опыт работы, специальность.

Результаты: 59% заполнили анкету, в исследовании приняли участие 118 стоматологов. Скажи-покажи-делай, положительная поддержка и стоп-сигнал считают наиболее эффективными приёмами более 50% участников. Менее 70% респондентов сообщили об использовании обезболивания, когнитивной реструктуризации и латентного торможения.

Заключение: Большинство стоматологов имели средний уровень осведомлённости о немедикаментозных методах управления поведением. Но отсутствие обучения использованию этих методов вызывает беспокойство. Стоматологи нуждаются в знаниях о детской психологии и её применении во время лечения.

Ключевые слова

методы управления поведением, детская стоматология, опрос
