

TRABAJO DE FIN DE GRADO

Grado en Odontología

EVOLUTION OF THE BEHAVIOUR MANAGEMENT

TECHNIQUES FOR THE DENTAL PAEDIATRIC

PATIENT

Madrid, curso 2020/2021

Número identificativo

174

ABSTRACT

Introduction:

Dental fear and anxiety are common occurrences among patients in paediatric dentistry. To combat this, behaviour management techniques (BMTs) are utilised for a successful treatment outcome. Society and attitudes towards children are changing. Parents are taking more interest in their child's treatment. The use of certain BMTs have been reevaluated.

Objectives:

- Describing the ways in which different behaviour management techniques in paediatric dentistry have changed throughout the years.
- Describing how parents and changes in attitudes towards children in society have had an impact on how they are treated by dental professionals in the clinic.

Methodology:

Electronic databases were conducted (UEM Biblioteca CRAI Dulce Chacón online, PubMed, ResearchGate).

Keywords: evolution behaviour management techniques, paediatric, dental, parental, attitudes, history.

29 papers found. Languages considered were English and Spanish.

Discussion:

Many BMTs have their basis in cognitive psychological theories from the early 20th century. Children's rights laws also began adoption around this period. As more rights were adopted and society changed, the more BMTs evolved. Parents are also becoming more involved in the treatment than before, also influencing which techniques are utilised.

Conclusion:

Shifts in society and the adoption of children's rights have had an impact on which BMTs are preferred in the dental clinic. Parents are becoming more involved in treatments and have also influenced which techniques are utilised. Throughout the decades, there has been more focus on communicative techniques, replacing controversial physical techniques. More studies are needed as it is an area in paediatric dentistry which updates itself along with the changes in society.

RESUMEN

Introducción:

El miedo y la ansiedad dentales son ocurrencias comunes en odontología pediátrica. Para combatir esto, se utilizan técnicas de manejo de conducta (TMC) para un tratamiento exitoso. La sociedad y las actitudes hacia los niños están cambiando. Los padres se están interesando más en el tratamiento de sus hijos. Se ha revaluado el uso de ciertos TMCs.

Objetivos:

- Describir las formas en que las diferentes TMCs han cambiado a lo largo de los años.
- Describir cómo los padres y los cambios en las actitudes hacia los niños en la sociedad han tenido un impacto en la forma en que son tratados por los profesionales en la clínica.

Metodología:

Se realizaron bases de datos electrónicas (UEM Biblioteca CRAI Dulce Chacón, PubMed, ResearchGate).

Palabras clave: técnicas de manejo de conducta evolutiva, pediátrica, odontológica, parental, actitudes, historia.

29 artículos encontrados. Los idiomas considerados fueron inglés y español.

Discusión:

Muchas TMCs tienen su base en teorías psicológicas cognitivas de principios del siglo XX. Las leyes de derechos del niño también comenzaron a aprobarse en este período. A medida que se adoptaron más derechos y cambió la sociedad, más TMC evolucionaron. Los padres

también se están involucrando más en el tratamiento que antes, y también influyen en las técnicas que se utilizan.

Conclusión:

Los cambios en la sociedad y la adopción de los derechos del niño han tenido un impacto en TMC se prefieren. Los padres se involucran más que antes en el tratamiento, lo también influye en los tratamientos que se utilizan. A lo largo de las décadas, se ha prestado más atención a las técnicas comunicativas, en sustitución de las controvertidas técnicas físicas. Se necesitan más estudios, ya que es un área de la odontología pediátrica que se actualiza junto con los cambios en la sociedad.

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INTRODUCTION

1. Why are behaviour management techniques used in dentistry?

The role of the paediatric dentist is not only to provide the best treatment for the patient, but also to provide it in an environment where the child feels secure and is able to cooperate with an understanding of their surroundings(1). To be able to build trust between the patient and dentist, behaviour management techniques are used. It is mandatory for all paediatric professionals to have training in these techniques, so that the child is treated to highest standard of care(2)(3).

To understand why behaviour management techniques are used in paediatric dentistry, we must know the concepts they are based upon. It is not uncommon for children to visit the dentist with anxiety; the emotions of children in the dental clinic can range from nervousness to complete uncooperation, due to fear or stress, with these emotions arising from previous experiences, the thought of the unknown, family situations, etc(4). To be fearful is a primal concept, and the typical reaction is an increase in heart rate and breathing rate(5). The sympathetic nervous system triggers the adrenal gland to release adrenaline into the blood, which is a hormone responsible for the “fight or flight” response in our body(5). Generally, *fear* is a reaction to immediate danger, something which is real and not an idealised concept. *Anxiety*, which produces similar but not the same bodily reactions to fear, is a reaction to potential danger, and the anxious will typically worry, stress, and be apprehensive. In a dental setting, fear can be caused the anaesthetic needle or the dental

drill, and on the other hand anxiety can be formed by the patient's own thoughts of the unknown or previous unpleasant experiences, all while they are sat in the waiting room of a dental clinic(4).

Dental fear and anxiety (DFA) can happen to any patient of any age, however it is more common in children(6). There are several factors that are cause for this:

- Age: it is one of the main factors of DFA(7), and is more prevalent especially in younger children. The development of a child's cognitive skills influences this, as the younger the child, the less developed their understanding of their surroundings and environment(6).
- Gender: many studies have shown DFA being more prevalent in girls(4)(8)(9), yet contradicting research shows that gender has no influence(6).
- Ethnic/cultural background: in European and American societies, children are generally freer to express their emotions, compared to African cultures where self-endurance is inspired, or Arab culture, which encourages boys from an early age to be brave(6).
- Previous dental experience: a past traumatic experience at the dentist can influence a child greatly(10), and can also lead to some avoiding going to the dentist entirely in adulthood(11).
- Dental caries: it is found that children with high levels of caries will tend to have higher levels of anxiety towards visiting the dentist, as they are more aware of the implications of the procedure(6)(10). This would also lead to avoidance in visiting the dentist, further increasing the number of caries(6) and risk of future extractions(12).

- Socioeconomic background and education levels: parents with lower economic statuses are less likely to bring their child to the dentist, due to obvious reasons, but lower education levels in the parents will also lead to reluctance in dental visits(10). This is to the lack of understanding in parents of the importance of dental procedures(10). This can lead to the child not knowing about the dentist, and developing irrational fears about certain procedures(6)(10).
- The clinic itself: the general atmosphere of the dental clinic has been shown to have an impact on anxiety levels in children, this can be including the long waiting time before an appointment, or the sound of the dental drill during procedures(6).
- Parental anxiety: the parents can have an impact on how children perceive the dental environment(6)(13). If a parent is highly anxious about a certain procedure, this will likely influence how the child copes(13). The social learning theory by Albert Bandura describes how social behaviours are often imitated by others(14), and in this case, children in the clinic recognising anxiety in their parents.
- Parental absence from the clinic area: separation anxiety is a common occurrence, particularly in children younger than 4. Past this age, it has been found that parental presence/absence made little difference to the child's levels of anxiety, however it was helpful in cases when treating difficult children(15).

2. Different behaviour management techniques

There are a range of ways to combat dental fear and anxiety; these techniques are known as behaviour management techniques (BMT), compassing from simply raising the tone of

one's voice to sedation or general anaesthesia. There are three phases of management, each with their own techniques, and the dental professionals will usually follow them in order; when techniques from the first phase have not been successful, the second phase will come into action, and so forth(1). The three phases from the first to last are communication, modification, and physical restraint or pharmacological management(1)(4). Communication techniques involve changing the way we communicate with the child; Modification is a more psychological approach, in which the child is taught to view the dental experience as something positive; and physical restraint refers to restraining the child's mobility through various methods, to prevent harm to themselves or others. Some techniques, particularly in the last phase, are considered controversial(13)(16)(17).

Below is a list of commonly used behaviour management techniques used in paediatric dentistry:

2.1. Communication techniques:

Tell-show-do:

- Description: a simple yet effective technique where the child is introduced to the procedure, ensuring they understand every step beforehand, before carrying out each step. "Tell" is explaining the procedure in a way that the child can understand, "show" is the demonstration of how the instruments are used, and "do" is then carrying out said procedure(13). In other words, explaining precisely the steps of the procedure (tell), demonstrating how the procedure is carried out (show), then completing said treatment (do)(1).
- Objectives: to allow the patient to become familiar with the treatment plan(1).

- Indications: new child patients, low-level anxiety(4).
- Contraindications: none(1), but very anxious patients may not be willing to listen(4).
- Pros: useful for communicative patients who show interest in the procedure(4); positively received by parents(18).
- Cons: not useful for highly-anxious patients or those unwilling to cooperate(4).



Figure 1. Explaining fissure sealants through tell-show-do(4).

Ask-tell-ask:

- Description: involves asking the patient if they have any feelings towards the procedure (ask), explaining to them what is to be expected (in simple, non-threatening language)(tell), and asking them again if they understand and how they feel knowing

about the upcoming procedure(ask)(2) or simpler, asking the patient how they feel (ask), carefully explaining the steps of the procedure (tell), and asking them again how they feel (ask)(1).

- Objectives: to make sure the patient is comfortable and understands the procedure(1).
- Indications: patients able to communicate(1).
- Contraindications: none(1), but very anxious patients may not be willing to listen(4).
- Pros: allows dentist to evaluate anxiety and emotions of the patient(1).
- Cons: not useful for highly-anxious patients or those unwilling to cooperate(4).

Voice control:

- Description: used when the child is distracted or mischievous, it involves changing the tone of one's voice to gain the child's attention. The child notices the change in tone and facial expression and understands they are in a professional environment and the dentist is a figure of authority(19). It is a *controlled* alteration of the tone, volume, or pace of the voice, sometimes used alongside change in facial expression(13).
- Objectives: used when the child is misbehaving; also used to gain attention(19).
- Indications: particularly disruptive patients, or children who are easily distracted(19).
- Contraindications: children with hearing impediments(2).
- Pros: useful when the child is young, and responds to changes in tone rather than what is actually being said; good for inattentive children(4).
- Cons: parents may find it disagreeable(2); not appropriate for children with emotional and behavioural disabilities(4).

Positive pre-visit imagery:

- Description: patients are shown positive images of the dental environment before entering the clinic area(1).
- Objectives: the child can understand and have a concept before starting treatment(1).
- Indications: any patient, especially new patients(1).
- Contraindications: none(1).
- Pros: children and their parents are introduced and allowed to ask any questions beforehand(1).
- Cons: none(1).

Non-verbal communication:

- Description: the child is encouraged through positive body language, such as smiling, happy tones, kneeling to reach the eye level of the patient(4).
- Objectives: gain patient's trust and attention; reinforce good behaviour(1).
- Indications: any patient(1).
- Contraindications: none(1).
- Pros: encourages child; enhances effectiveness of non-physical BMTs(4).
- Cons: none(4).

Child lingo:

- Description: using child-friendly vocabulary to describe instruments and procedures, e.g. calling topical anaesthetic "magic ice cream"(4).

- Objectives: changing the child's perception to make the dental environment seem less frightening(4).
- Indications: very young children; patients with learning difficulties(4).
- Contraindications: older children(4).
- Pros: the patients views the clinic as something positive(4).
- Cons: older children may take insult to being spoken to in child-friendly vocabulary(4).

2.2. Modification techniques:

Desensitization:

- Description: the child is exposed to a series of dental procedures, each more complicated than the previous(13). An example would be performing an intraoral exam using a mirror and probe until the child is not afraid, then moving on to the radiographs. This technique is used in children who are already anxious or used generally to prevent a phobia from occurring. The child should be gradually introduced from low-level fearful stimuli to high-level; the dentist can only move on to the next stimuli once the child is comfortable with the previous one(4).
- Objectives: to allow gradual exposure of anxiety-raising dental instruments(4); to help the child overcome hypothetical or existing dental anxieties(13).
- Indications: highly anxious patients(13).
- Contraindications: patients with difficulties communicating(4).
- Pros: the patient's existing anxieties are attended to(13).
- Cons: may take several appointments to introduce each stimuli(4).

Modelling:

- Description: another person is used as a model of “good behaviour” in the dental clinic so the child sees and imitates their actions. The model can be another patient, the parent, or even the dentist themselves. Usually the scenario consists of the model who was also anxious when visiting the dentist learning to overcome their fears. From a psychological point of view, children growing up will tend to learn and copy from others, and this technique bases its principle on this theory(4)(13). The can patient observe a “model” in the form of another patient or video recording experiencing the dental environment and “overcoming” their fears(4).
- Objectives: to draw off a child’s natural cognitive function of observing and imitating, and use this to allow the child to naturally accept the dental environment(13).
- Indications: almost all patients who can communicate; inquisitive patients(4); 3-5 years of age(19).
- Contraindications: children with already preconceived negative ideas about the treatment(13).
- Pros: it is a form of indirect learning; recorded models are time economical(13).

- Cons: may not work on children with prelearned negative misconceptions of the dental clinic(13).



Figure 2. Modelling used to demonstrate the placement of bitewings. In this scenario, the dentist is the model(4).

Positive reinforcement:

- Description: this is a technique where good behaviour is encouraged by positivity, rather than negative basis', such as voice control. The child is commended for complying with the dental treatment through verbal encouragement, or sometimes physical rewards are given such as prizes. Rewarding prizes for good behaviour is enhancing management

technique adds ways to condition good behaviour. Prizes can be in the form of stickers, toys, stationery, toothbrushes, etc(4)(13).

- Objectives: to reinforce good conduct and ignore unwanted actions(4).
- Indications: children who identify the awarding of positive actions(4).
- Contraindications: none(4).
- Pros: reduces disruptive and unwanted behaviours(13).
- Cons: may be seen as a way of “bribing”(4); not every child responds to the same reward – it may be necessary to evaluate the child’s temperament beforehand(13).

Negative reinforcement:

- Description: an alternative to positive reinforcement is the technique of negative reinforcement. It is not a punishment as the name suggests, but a form of conditioning, where a negative stimulus is removed if the child displays a disliking to it. Good behaviour is reinforced by removing the negative stimulus(4).
- Objectives: not a punishment; it is similar to *positive reinforcement* in that good behaviour is rewarded(17).
- Indications: patients with some dental experience; moderate anxiety levels(4).
- Contraindications: new patients; patients with difficulty communicating(4).
- Pros: positive concept; can work with almost any patient(4).
- Cons: may cause younger patients more anxiety than necessary(4).

2.3. Physical management techniques:

Hand-over-mouth (HOM):

- Description: used when the child is acting disobedient and defiant, the dentist or nurse will place a hand over their mouth. This is to prevent the child from speaking and to also gather their attention to the dentist. The hand is removed once the dentist feels the child is ready to comply(13); the nose must never be covered(19).
- Objectives: to halt said behaviours(2).
- Indications: to protect the patient and professional; when treatment is urgent and the child is not cooperating; can be used alongside *restraint*(13); children aged between 4-9 being unobliging(19); with parent's consent(19).
- Contraindications: mentally disabled patients or those with impaired emotional and communicative function(13).
- Pros: gains attention of the child; prevents injury to patient and dentist; halts disruptive behaviour(13).
- Cons: controversial technique and can be seen as cruel; can make the child even more stressed(13).

Protective stabilization:

Description: restriction of patient's movement by the assistant or dentist, or using a stabilization device(1).

Objectives: to lower risk of harm while completing the treatment(1).

Indications: each patient must be evaluated before considering its use; sedated patients who may produce involuntary movements; special patients; parent's consent(1).

Contraindications: if at any point parent objects to its use, it may be halted(19).

Pros: protects patient and professionals during treatment(1).

Cons: may result in physical harm or psychological trauma; may limit respiration; the drawbacks generally outweigh the benefits(1).

Restraint:

- Description: the child is physically restrained at the arms and legs by the professional or using a stabilization board called a Papoose board – this is a form of *whole-body restraint*. Restraint is used to provide treatment in a safe manner and to avoid injury. This technique can also be used in combination with sedation and is normally indicated for handicapped patients(13). Physical restraint can be performed by the dentist or by the assistant(17).
- Objectives: to control flailing movements by the child and therefore prevent injury(13).
- Indications: children displaying disruptive behaviour; to control involuntary movements that occur during sedation; can be used alongside *HOM*(13).
- Contraindications: mentally disabled patients or those with impaired emotional and communicative function(13).
- Pros: prevents injury; allows continuation of treatment(13).
- Cons: the child may become more anxious(13).

Whole-body-restraint:

- Description: the patient is restrained using a Papoose board(13).
- Objectives: used to prevent involuntary flailing of the arms and legs, and jerking head movements(13).

- Indications: physically and mentally handicapped patients who have a lack of control of bodily movements; as an alternative to sedation in young children(13).
- Contraindications: without parent's consent(13); illegal in Scandinavia(2).
- Pros: can be used with sedation to prevent involuntary movements(2).
- Cons: is controversial and seen as one of the least accepted techniques(4).

2.4. Other non-pharmacological behaviour management techniques:

Other behaviour management techniques should also be mentioned. One is the *parental absence/presence* in the dental clinic(20)(15)(21). This technique has shown to be particularly effective in children under the age of 4 and in those children suffering separation anxiety, but past this age, is more useful when treating difficult behaviour(15):

- Description: the parent is present in the treating area(15).
- Objectives: to prevent stress in children suffering separation anxiety; to achieve good behaviour as the parent is in close proximity to the child(15).
- Indications: patients with separation anxiety; children between 5-9 years behaving badly during treatment(15).
- Contraindications: when communicative BMTs have not yet been applied in children with low-level anxiety(4).
- Pros: creates a good rapport with the child and parents also; allows easier treatment(15).
- Cons: some dentists may find having parents present a hindrance(15); some parents may emit their own anxieties to their child(4).

Another technique is *distraction*, where the child is mentally distracted during the dental procedure by means of a cartoon, music, toys, etc(4). Creating a play area in the waiting room is also considered a form of the distraction technique(20):

- Description: pulling the child's attention away from the procedure momentarily; it can be through having a chat with the patient while injecting local anaesthesia, or using music or television to distract(4).
- Objectives: to lower the sense of pain and unpleasant perception(1); to divert attention away from the treatment itself(19).
- Indications: patients with low-level anxiety(4).
- Contraindications: highly anxious patients(4).
- Pros: gives the patient a temporary distraction from an unpleasant experience(1).
- Cons: some patients may realise that the distraction is only a short delay from the procedure(2).

Performing a "*magic trick*" or even making a glove puppet using the dental gloves can be used as distraction devices(4). This technique is similar to the "daydream" method, where the practitioner encourages the child to visualise a dream, or to imagine they are in an alternative scenario, away from the dental clinic(4):

- Description: the child is shown a magic trick before the procedure starts, then every aspect of the treatment is referred to as magic, e.g. "magic" buttons which lower the chair; the "magic" theme is continued in following appointments(4).
- Objectives: used to settle in new patients(4).
- Indications: first visit, young patients(4).

- Contraindications: older patients(4).
- Pros: helps build a good bond between child and dentist(4).
- Cons: professional needs to be quite adept for the trick to work(4).



Figure 3. Showing a magic trick book(4).

Mouth props can be used when the child refuses to close their mouth, however, it is not seen as negative, as they can also be used if the child falls asleep during a procedure(17):

- Description: a device made of rubber silicone is placed in the patient's mouth(17).
- Objectives: to keep the mouth open while the dentist is treating(17).
- Indications: child that falls asleep during the procedure; patient refusing to open their mouth(17).

- Contraindications: cannot be used without signed parent's consent(2); physical management technique, so should be used as BMT when previous have failed(2).
- Pros: useful in patients with difficulty keeping mouth open for extended period of time(17).
- Cons: form of physical management technique(2); can be seen as negative(1).

2.5. Pharmacological behaviour management techniques:

Pharmacological approaches to behaviour management are also applied, with the use of anxiolytics or nitrous oxide. These come in the form of *sedation*, where levels of consciousness are still maintained, or *general anaesthesia*, where there is a loss of consciousness.

Sedation:

- Description: there are three types of sedation, in order of higher to lower levels of consciousness: minimal, moderate, and deep. Minimal sedation is when the level of consciousness is minimised through pharmacological method, but the child is still responsive and has the airways and cardiovascular function free. With moderate sedation the child may have a purposeful response to verbal stimulation with tactile touch; the ventilation is adequate and cardiovascular function may be maintained. When deep sedation is used, the child's consciousness is significantly depressed, but there will be a response to repeated or painful stimuli. Cardiovascular function is still maintained, but spontaneous ventilation may be affected, and intervention may be required to maintain the airways(3). It is difficult to estimate which form of sedation will be used, as

every case needs to be evaluated, and many requirements have to be met before its use is even considered(19).

- Objectives: ensure child's safety; control movement and behaviour; reduce levels of anxiety and discomfort(1).
- Indications: parental consent; special needs patients with learning and emotional disabilities; patients that will medically benefit from sedation due to exceptional risks(1); highly anxious patients who have received all other possible BMTs(4).
- Contraindications: patients unable to receive sedation due to medical risks; cooperative patients with minimal treatment plans(1).
- Pros: provides a safer treatment; anxiety levels are reduced(1).
- Cons: many medical risks such as tachycardia, hypotension, and infusion pain(4).

Sedation still maintains a level of consciousness. The use of *general anaesthesia* produces a complete loss of consciousness; there is no response, even with painful stimulation:

- Description: ventilation and cardiovascular function are both usually impaired, and assistance is required to maintain the airways(3). Pharmacological approaches are usually seen as a last resort, or are used in special cases, such as with mentally handicapped patients. They are also indicated when there are multiple treatments to perform which cannot be done safely while the child is in a fully conscious state(2)(3).
- Objectives: halt pain response; cease anxiety; prevent any unwanted movements during procedure(1).

- Indications: parental consent; mentally or physically disabled patients; those unable to receive local anaesthesia for numerous reasons; highly anxious patients where cooperation is absent; surgically complex treatment(1).
- Contraindications: those unable to receive it due to medical risks; very young patients; cooperative patients with minimal treatment plans(1).
- Pros: patient safety is first; allows for easier treatment(1).
- Cons: possible dangers associated with procedure such as respiration problems or cardiovascular risks(2); one of the least acceptable techniques(17).

3. Start of change

It is evident that some of the techniques described seem too severe to put a child through and are considered controversial in many countries(13)(20)(22). Since the beginning of the 20th century, laws have been coming into place to protect children, leading to changes in attitudes to how children are treated and how parents raise them(23). This change is also evident in the dental environment, where before, the dentist was viewed as an authority figure and their word was the “final” word whereas now, parents are a lot more involved in the dental procedures and prefer to inquire and decide about each treatment after fully comprehending the treatment plan(24).

OBJECTIVES

This article will be describing:

- The ways in which different behaviour management techniques in paediatric dentistry have changed throughout the years.
- How parents and changes in attitudes towards children in society have had an impact on how they are treated by dental professionals in the clinic.

METHODOLOGY

An online search was conducted. Websites used were UEM Biblioteca CRAI Dulce Chacón online, PubMed, ResearchGate.

Keywords used were evolution behaviour management techniques, paediatric, dental, parental, attitudes, history.

Languages accepted were English and Spanish, however all articles found were in English. Articles preferred were from 2010 onwards, however due to the historical nature of the topic, there was difficulty in avoiding some articles from before this timeframe.

An article by J. Roberts *et al* (2010)(13) fortunately provided some great data regarding the history of some techniques, but apart from this article, there were practically no studies which explained the techniques in historical detail. A book by C. Campbell (2017)(4) contributed information about dental fear and anxiety and explained many behaviour management techniques, with their corresponding pros and cons. This book was very useful for Table 1. Regarding historical children's rights laws, a 2007 journal article from the Law Library of Congress provided an extensive and comprehensive chronological list of global and national laws.

29 references were used: 22 journal articles, 2 books, 1 internet article, and 4 reports (all were related to laws).

DISCUSSION

To overcome anxiety and stress in the paediatric dental clinic, behaviour management techniques have been accepted as the way towards achieving a successful treatment outcome(4). It is a relatively recent concept, and its history and beginnings are topics which has not been discussed much, if at all, in literature. The use of BMTs started to become the norm in the mid-20th century(24), but it can be stated that the philosophy with which it is based was founded decades before(13). Treating children to the highest standard has been the concern of dentists since the late 1800s, with one dentist, E.H. Raymond, writing in his journal in 1875 “getting into the good graces of children is almost half the work to be accomplished”. This was one of the first times the issue regarding child comfort in the clinic was mentioned in literature(25). Early forms of BMT have the basis of learning theories of psychologists and scientists of the likes of Ivan Pavlov (*Conditioned Reflexes*, 1927), John B. Watson (*Psychology as the Behaviourist Views It*, 1913), B.H. Skinner (*The Behavior of Organisms*, 1938), and Albert Bandura (*Social Learning Theory*, 1971). Behaviour management can be considered an artform as much as a science, as every dentist will have their own way of approaching it, depending on their own individuality and personal/empathetic skills. Based on this, the first forms of BMT comprised mainly of empathetic ground; communication was key. Psychologist Carl Rogers affirmed in 1959 that it was necessary to understand and empathise with children, and not disregard their emotions. In the dental environment, this translated to recognising the child’s reaction to what they perceive as the unknown and being able to change this perception to something positive(13).

This brings us to the beginnings of universally accepted communication and modification techniques. It must be noted that this topic still needs further studies and reviews, especially from a historical perspective. D.W. Chambers in 1976 described how good communication between the dentist and patient was essential in influencing the child's behaviour and after this was established, communicative BMTs could be used with a likely chance of success. *Tell-show-do* was defined precisely by what it consisted of in by Addleston in his article "Child Patient Training" published in 1959, where the technique was to be a rapid succession of telling, showing then doing, with an emphasis on using language which is appropriate to the age of the child, or "childrenese" as coined by G.H. Kreinices in 1975. The main aim was to allow children to gradually accept the procedure(13).

Voice control is another BMT, which was described by Szasz and Hollander in 1956 as being able to reset the relation between the dentist and child. Bauer in 1964 described the technique to be used a little more harshly, saying that a sharp change in the tone used along with command words would make the technique work. D.W Chambers added in 1976 that this technique can be used even if speaking another language, as the importance sits in the tone rather than what is being said to the child. Pinkham in 1985 mentioned that besides a raised tone, a change in facial expression would make the technique effective(13).

The concept of *desensitization* was outlined by J. Wolpe in 1958, and then by Machen and Johnson in their journal article dedicated to this BMT in 1974. Its original psychotherapeutic model was to be practiced in a series of sessions, taking weeks, but in a paediatric setting, a smooth progression was to be done, where, for example, a child is first exposed to the dental instruments before the actual treatment. The dentist could only move on to the next dental concept once was the previous was accepted and overcome by the patient(13).

Modelling is a technique which was described in 1970 by Adelson and Goldfried to have been based on Bandura's social learning theory, whereby through the child's nature, they observe and imitate a model patient overcoming their dental fears or behaving accordingly in the clinic. The technique was better ideal if the model was also an apprehensive patient, who had similar physical and social characteristics to the child. Either through live modelling or a recording of a model, both techniques were considered effective (Ghose *et al*, 1969, and Machen and Johnson, 1974, respectively), and still are, as this is a technique which has not changed if at all through the years(13).

Another technique based on psychoanalysis is *reinforcement*, which takes elements from Skinner's *The Behavior of Organisms* (1938), whereby a certain behaviour after a catalyst, which has been reinforced, is anticipated to occur again. The technique consists of a negative element too, where the punishment of disruptive behaviours is enough to prevent them from happening again. Hemsley and Carr in 1981 noted, however, that this technique could only be used if unwanted attention from the child persists, and must only be referred to as reinforcement if there is a change in the child's resulting behaviour(13).

Techniques which are third-tier, such as *HOM* and *whole-body restraint* have also been mentioned in literature since the early 1970s. *HOM* was described by Craig in 1971 as a technique which allows for easier communication, as the child is momentarily silenced and lends the dentist their attention. Rombom in 1981 defined this technique as "response prevention". *Restraint* has also been discussed, with Weinstein *et al* in 1982 stating the technique not being particularly effective when the dentist himself was the one restraining the child; in 1983 he reported more success when it was the assistant doing so(13).

Regarding sedation, it has generally been considered a last resort, as noted in a study by M. Murphy *et al* in 1984(17), and *restraint* being typically used in its place(13).

Laws and attitudes regarding children's rights differ greatly around many countries, but since the beginning of the 20th century, organizations like the United Nations (1945-) have been adopting global international laws, as a way of providing a fixed set of rules among nations. The League of Nations (1920-1946) was the first intergovernmental organization that made any mention of child rights, pledging in 1924 "mankind owes to the children the best it has to give". This influenced the UN's Declaration of the Rights of the Child (DRC) in 1959, which was the first critical consensus adopted regarding justice towards children. The DRC had ten principles which stated that any child, regardless of race, gender, religion or physical and mental capabilities was given rights to enjoy special care and protection, free education, housing, and was to be protected against neglect and discrimination of any kind. Following the DRC, in 1973 the International Labour Organization (ILO), an agency of the UN, mandated the Minimum Age Convention (MAC), with an aim to increase the minimum age of employment. This commission is still going on today, with many countries slowly following, and reaching the MAC's aim of total abolishment of child labour. Its main rule was to have the minimum working age at 15 years; however, the age of 14 was accepted if the country's state of economy and education facilities were at a low and developing level. The minimum working age was to be 18 if the form of employment was that of which could be harmful physically or morally to the worker(23).

A treaty named Convention on the Rights of the Child (CRC) was authorised by the UN in 1989, which set out a comprehensive list of measures regarding child rights and set out to give every child the right to freedom of expression. It is the UN's longest treaty in terms of

the number of articles it contains (54 in total), and every article is considered equally important. The treaty outlined the rights of every child and the responsibilities of governments around the world. Its principles were grounded from the perspective of a child, and were based on the four “P’s”: participation of children in matters that affect them; prevention of harm towards them; protection of children from neglect and discrimination; and provision of their basic necessities. The CRC defined a child as being under the age of 18 years, and their articles apply to anyone who fits this, regardless of race, gender, nationality, disability, and the work status and income of their parents. It also highlighted the responsibility of parents and the government to ensure the rights of the child are protected. Laws that had previously not existed were also created, such as those protecting refugee children and the rights for indigenous and minority children to freely practice their traditions and beliefs(23).

In 2000, the UN added two more protocols to the CRC: The Sex Trafficking Protocol (STP) and the Child Soldiers Protocol. The STP discussed the issue of child sex trafficking, which is one of the malicious reasons children are kidnapped and sold. The Child Soldiers Protocol was made to protect children from the impact of living in a territory of armed conflict(23).

As of September 2020, 196 countries are ratified to the CRC, meaning the rules of the treaty have become law in that country. All members of the UN are ratified, with the exception of the United States, and the last country to have had their ratification accepted by the UN was Somalia in October 2015(26).

As of recent, the Council of Europe adopted a programme in 2011 on child-friendly justice, which gave the right for children to have access to healthcare while also maintaining their rights as a child was established(27).

With the adoption of these rights in the 20th and 21st century, children have been given more freedom of expression and to exercise their objections, especially in Europe and USA(13)(28) (29) and these changes in global laws and cultural traditions have proven their effect in the dental world. Throughout last 40 years, there have been several discussions regarding the use of certain BMTs, and their legalities(24), and by the second half of the 20th century, more attention was given to the importance of empathy and communication for paediatric patients(13).

The most controversial behaviour management techniques (*voice control, HOM, whole-body restraint, sedation*) have been reviewed and debriefed through the years. Bowers in 1982 and Klein in 1987 both emphasized the legality of *HOM* in USA, and such discussions have led to the technique being excluded from the 2008 Guidelines of the American Academy of Paediatric Dentistry. It was described in 1971 as a technique which would grasp the child's attention and favour communication, however the technique was to be used with such great expertise, as advised in Casamasimo in 1993, otherwise the results would be unpleasant. The technique has dividing opinions with some studies advocating it (Levitas, 1974), and others expressing criticism (Weinstein *et al*, 1993). In 2004, a study by Newton *et al* on UK dentists reported that 51% believed that *HOM* would lead to children fearing to return for another appointment(13). A 2016 article in the Texas Dental Journal described *HOM* as a "historic" technique, and that its use in modern-day dentistry as "inappropriate"(2).

Restraint has also been considered very controversial to the point it is generally taught in postgraduate specializations. In 1997, Friedman suggested that due to the changing attitudes towards children, any form of restraint should be considered under the umbrella of

the technique *protective stabilization*, so as not to worry parents. An article published by Connick *et al* in 2000 gave a list of specific rules which must be abode to while this technique is in use, including the fact it should be used as a final resort and should never be used to punish (to use simply to punish is absolutely unacceptable and is now regarded so)(13). While the arguments against controversial BMTs have been generally accepted, there are not enough studies and clinical investigations regarding this topic.

The impact of the evolution of child rights has changed parental attitudes towards raising children, and this also includes how they accept the behaviour of other adults towards their children. At least 50 years ago, dentists were considered authoritarian figures, not only from the perspective of children, but from the parents too. Parents were not as involved in the treatment plan; the final terms were with the professional and the parents dependably trusted their child with the dentist. Through the years, parents have become more involved in the procedures, and have displayed disliking and disapproval at certain BMTs(24). In a study by Murphy in 1984 on parental acceptance on certain techniques, the use of the Papoose board (*whole-body restraint*), *sedation*, *general anaesthesia* and *HOM* were the least favoured(17), and this is a view which has been shared by dentists(13). *Tell-show-do* and *positive reinforcement* were the most favoured, and this result was supported in a 2017 study by Al Daghamin S *et al*(18). Another study by Fields in 1988 reported that the use of the Papoose board was also the least favoured choice with parents. The united disapproval for certain BMTs by parents and dentists alike suggests the problem lies with the technique itself. However, it can be said that the reason for objections against certain BMTs could be simply misunderstanding on the parents' part; it should be noted that parents who understand the purpose of BMTs tend to be more accepting of them(13).

Carr *et al* (1999) stated that changes in the use of BMTs largely depended on parents' influence, and nowadays dentists generally accommodate to suit the child's and parent's needs(13). It is shown there is a greater emphasis on communicative techniques than before, with a study by Kawia *et al* in 2016 reporting dentists having more awareness of techniques such as *tell-show-do*, *desensitization*, and *voice control*, but also being mindful in using *restraint* and *sedation*(20). Regarding this, there is also a consensus in generally using *sedation* rather than *whole-body restraint*, and parents are informed of its implications and are given time to discuss and comprehend its justification before agreeing to consent for its use(4).

CONCLUSION

- Despite the use of certain controversial techniques in the past, dentists were concerned of the negative impacts they had on children, and it was this, along with changes in society due to the adoption of more rights for children, which made way for a change in outlook to how BMTs are utilised.
- With the shift of society also came a change in which the dental world is viewed, especially by the parents, who now have an undeniably bigger role to play in the clinic than before.
- Communicative techniques like *tell-show-do* and *positive reinforcement* are being favoured by dentists and parents alike over controversial and “historical” techniques like *HOM* and *restraint*.
- Many studies were published in the second half of the 20st century when this topic was at its height of change, but more studies are needed as of recent, as one of the main factors of the use of BMTs is society, which is constantly changing.
- It is safe to say however that the standards of BMTs have undoubtedly improved and can only lead to a secure way towards content a child and parent and a successful treatment outcome.

RESPONSIBILITY

Patient's safety and care should be the number one priority in the dental clinic. The best possible outcome of any treatment in paediatric dentistry should be a content child, satisfied parents, and a successful procedure done to the highest degree. When using behaviour management techniques, communicative techniques are first and foremost; if utilised well there is often no need for physical management techniques, which may even cause more anxiety and stress to the patient. The dentist has a responsibility of outlining clearly different BMTs to the parents, but it also falls on the parents to understand the purposes and why they are in use. More scientific studies and post-graduate programmes on BMTs would be extremely beneficial for paediatric dentists, as this would not only increase insight and raise awareness but lead to content children and thus a more rewarding treatment outcome.

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ANNEXES

Figure 1: Campbell C. Dental fear and anxiety in pediatric patients: Practical strategies to help children cope. Dental Fear and Anxiety in Pediatric Patients: Practical Strategies to Help Children Cope. 2017. Page 100.

Figure 2: Campbell C. Dental fear and anxiety in pediatric patients: Practical strategies to help children cope. Dental Fear and Anxiety in Pediatric Patients: Practical Strategies to Help Children Cope. 2017. Page 103.

Figure 3: Campbell C. Dental fear and anxiety in pediatric patients: Practical strategies to help children cope. Dental Fear and Anxiety in Pediatric Patients: Practical Strategies to Help Children Cope. 2017. Page 108.

ANNEXES (FIRST PAGE OF ARTICLES)

1. Behavior guidance for the pediatric dental patient. *Pediatr Dent.* 2018;40(6):254–67.

BEST PRACTICES: BEHAVIOR GUIDANCE

Behavior Guidance for the Pediatric Dental Patient

Latest Revision
2015

Purpose
The American Academy of Pediatric Dentistry (AAPD) recognizes that dental care is medically necessary for the purpose of preventing and eliminating orofacial disease, infection, and pain, restoring the form and function of the dentition, and correcting facial disfiguration or dysfunction.¹ Behavior guidance techniques, both nonpharmacological and pharmacological, are used to alleviate anxiety, nurture a positive dental attitude, and perform quality oral health care safely and efficiently for infants, children, adolescents, and persons with special health care needs. Selection of techniques must be tailored to the needs of the individual patient and the skills of the practitioner. The AAPD offers these recommendations to educate health care providers, parents, and other interested parties about influences on the behavior of pediatric dental patients and the many behavior guidance techniques used in contemporary pediatric dentistry. Information regarding protective stabilization and pharmacological behavior management for pediatric dental patients is provided in greater detail in additional AAPD clinical practice guidelines.^{2,4}

Methods
Recommendations on behavior guidance were developed by the Clinical Affairs Committee, Behavior Management Subcommittee and adopted in 1990. This document by the Council of Clinical Affairs is a revision of the previous version, last revised in 2011. This document was developed subsequent to the AAPD's 1988 conference on behavior management and modified following the AAPD's symposia on behavior guidance in 2003 and 2013.^{5,6} This update reflects a review of the most recent proceedings, other dental and medical literature related to behavior guidance of the pediatric patient, and sources of recognized professional expertise and stature including both the academic and practicing pediatric dental communities and the standards of the Commission on Dental Accreditation.⁷ In addition, a search of the PubMed®/MEDLINE electronic database was performed using the terms: behavior management in children, behavior management in dentistry, child behavior and dentistry, child and dental anxiety, child preschool and dental anxiety, child personality and test, child preschool personality and test, patient cooperation, dentists and personality, dentist-patient relations, dentist-parent relations, attitudes of parents to behavior management in dentistry, patient assessment in dentistry, pain in dentistry, treatment deferral in dentistry, toxic stress, cultural factors affecting behavior in dentistry, culture of poverty, cultural factors affecting family compliance

in dentistry, poverty and stress and effects on dental care, social risks and determinants of health in dentistry, gender shifts in dentistry, protective stabilization and dentistry, medical immobilization, restraint and dentistry, and patient restraint for treatment; fields: all; limits: within the last 10 years, humans, English, birth through age 18. There were 5,843 articles matching these criteria. Papers for review were chosen from this list and from references within selected articles. When data did not appear sufficient or were inconclusive, recommendations were based upon expert and/or consensus opinion by experienced researchers and clinicians.

Background
Dental practitioners are expected to recognize and effectively treat childhood dental diseases that are within the knowledge and skills acquired during their professional education. Safe and effective treatment of these diseases requires an understanding of and, at times, modifying the child's and family's response to care. Behavior guidance is the process by which practitioners help patients identify appropriate and inappropriate behavior, learn problem solving strategies, and develop impulse control, empathy, and self-esteem. This process is a continuum of interaction involving the dentist and dental team, the patient, and the parent; its goals are to establish communication, alleviate fear and anxiety, deliver quality dental care, build a trusting relationship between dentist/staff and child/parent, and promote the child's positive attitude toward oral health care. Knowledge of the scientific basis of behavior guidance and skills in communication, empathy, tolerance, cultural sensitivity, and flexibility are requisite to proper implementation. Behavior guidance should never be punishment for misbehavior, power assertion, or use of any strategy that hurts, shames, or belittles a patient.

Predictors of child behaviors
Patient attributes
A dentist who treats children should be able to accurately assess the child's developmental level, dental attitudes, and temperament and to anticipate the child's reaction to care. The response to the demands of oral health care is complex and determined by many factors. Developmental delay, physical/mental disability, and acute or chronic disease are potential

ABBREVIATIONS
AAPD: American Academy of Pediatric Dentistry. ITR: Interim therapeutic restoration.

266 THE REFERENCE MANUAL OF PEDIATRIC DENTISTRY

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ACADEMY OF
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Anne P. Dodds, BDS, MPH, PhD.
Health Science Editor: Megan Wright, RDH, MS

Publication Date: October 2012

Updated Date: September 2017

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Pharmacologic management for pediatric dental patients in the 21st century

Beau D. Meyer, DDS, MPH ■ Jung-Wei Chen, DDS, MS, PhD ■ Jessica Y. Lee, DDS, MPH, PhD

Most children are able to cooperate during conventional, in-office dental treatment using traditional, communicative behavior guidance techniques that are carefully selected and applied to the developmental needs of a particular child. Children who are unable to cooperate during conventional treatment due to a lack of psychological or emotional maturity and/or the existence of a mental, physical, or medical disability may require pharmacologic techniques such as procedural sedation or general anesthesia to complete rehabilitative dental treatment. Patient safety dictates that careful preparation and robust case selection processes guide clinical decision-making related to pharmacologic behavior guidance. Before using these techniques, the sedation provider must demonstrate an adequate understanding of these techniques, from definitions and best practices to case selection and patient safety. This article presents essential information—with an emphasis on best practices and patient safety—for dentists who are considering pharmacologic behavior guidance for the children they treat.

Received: June 25, 2018
Accepted: July 31, 2018

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AMERICA'S PEDIATRIC DENTISTS
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GENERAL DENTISTRY
SELF-INSTRUCTION 
Exercise No. 430, p. 23
Subject code: Pediatric Dentistry (430)

Behavior guidance has played an important role in dental treatment for young children. The majority of children are able to cooperate for dental treatment when the dentist uses nonpharmacologic behavior guidance techniques that are chosen carefully and customized for each child. The goal is to achieve a positive and optimal dental experience for children at various levels of age, cultural, medical, social, and psychological development. If, despite the use of basic behavior guidance techniques, a child is unable to accept dental treatment due to a lack of psychological or emotional maturity and/or the existence of a mental, physical, or medical disability, then pharmacologic techniques such as procedural sedation or general anesthesia can be considered by the dental practitioner.

Responsible and ethical clinicians have a thorough understanding of pharmacologic approaches to behavior guidance before undertaking such procedures. Required areas of knowledge include definitions, best practice guidelines, patient selection, and, above all, safety and emergency care. This article presents essential information for dentists who are considering pharmacologic approaches to behavior guidance for the children they treat.

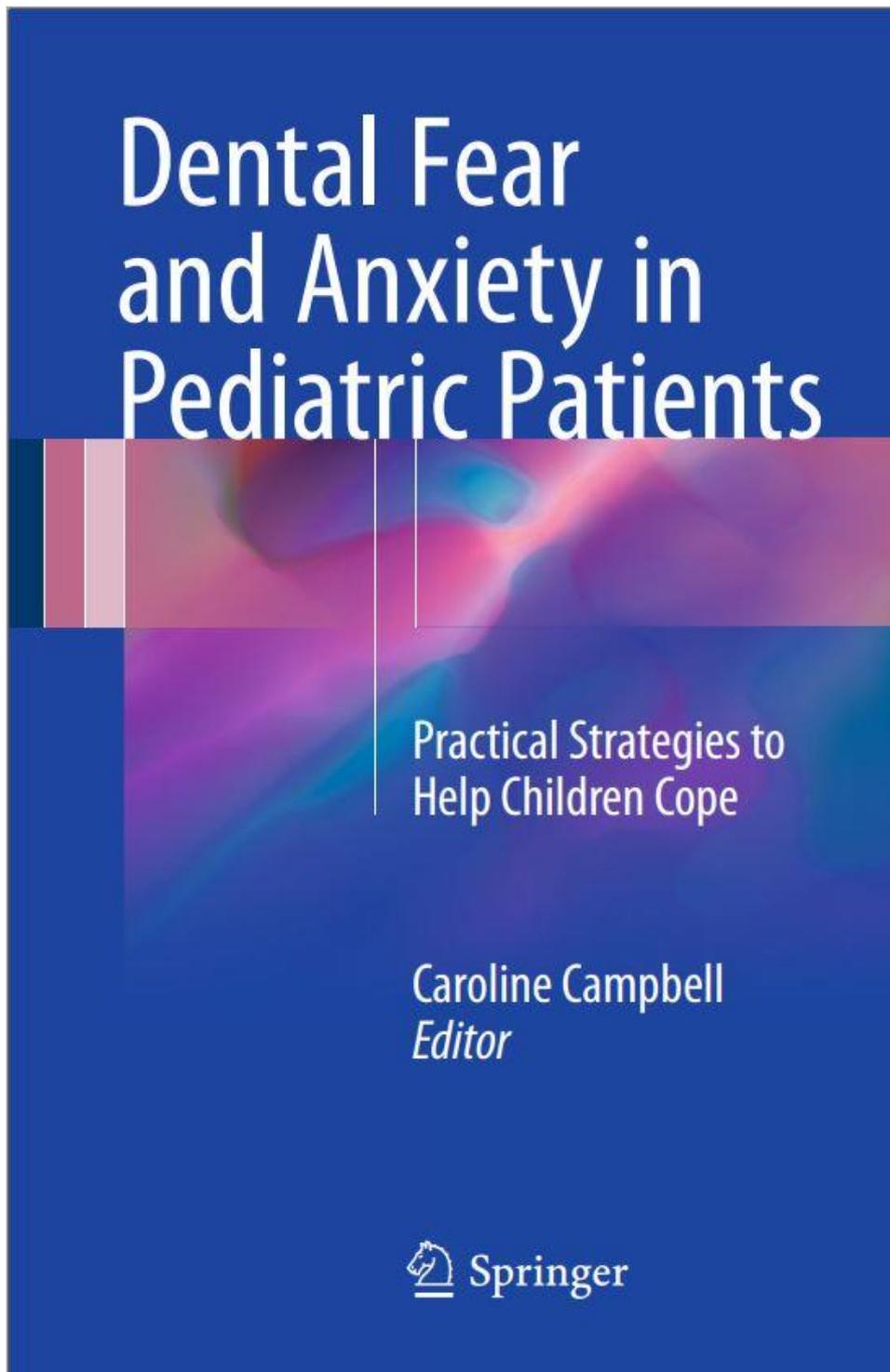
Definitions and terminology

Professional organizations have similar but slightly different definitions of pharmacologic management or methods of anxiety and pain control. Most definitions are based on the depth of sedation and route of administration (Table).¹ Most states now require dentists who wish to sedate patients in their offices to obtain a sedation permit. Rules and qualifications vary by state, but dentists generally must demonstrate that they have received training and maintain skills in advanced life support. Dentists should understand the requirements for obtaining a sedation/general anesthesia permit as well as the requirements for personnel, monitoring equipment, documentation, sedation medications, rescue drugs, and recovery facilities before offering pharmacologic management to their patients.²

Guidelines

The American Academy of Pediatric Dentistry (AAPD) and American Academy of Pediatrics (AAP) have a long history of issuing joint guidelines for pediatric sedation.² These guidelines, which were adopted in 2006 and revised and reaffirmed in 2016, emphasize case selection, adequate provider training, and monitoring before, during, and after procedural sedation. These professional guidelines should not be interpreted as standards of care; rather, they represent collections of principles and procedures that clinicians can use to aid clinical decision-making and when counseling caregivers of children who require restorative

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20/02/2021 Fear: What happens in the brain and body?

 **MEDICALNEWS**TODAY 

Dissecting terror: How does fear work?

 Written by [Tim Newman](#) on October 31, 2018 — [Fact checked](#) by Jasmin Collier

In this Spotlight feature, we will explain the biology of fear: why it has evolved, what happens in our bodies when we are scared, and why it sometimes gets out of control. Scroll down...if you dare.



What is fear, and how can it feel both good and bad?

Everyone can get scared; fear is an unavoidable facet of the human experience.

People generally consider fear as an unpleasant emotion, but some go out of their way to trigger it — such as by jumping out of planes or

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Postgraduate Education

Pediatrics Section

Dental Anxiety in Children: A Review of the Contributing Factors

AMERAH A ALASMARI¹, GHADAH S ALDOSSARI², MOHAMMED S ALDOSSARY^{3*}

ABSTRACT

Dental anxiety is a challenge faced by the dental professionals while treating young children. Many factors have been reported as contributing factors that influence and affect the level of dental anxiety in children. Being familiar with these factors would facilitate behaviour management in anxious children. This article reviews the contributing factors that have been investigated in the literature.

Keywords: Child behaviour, Dental fear, Dental phobia

INTRODUCTION

Dental anxiety in children presents a challenge to the child, parents and the dental team. This, in turn, leads to difficulty in behaviour management, avoidance of dental care, and poorer oral health outcomes [1]. The assessment of dental anxiety is necessary in order to overcome these problems and facilitate diagnosis and treatment while also guaranteeing a pleasant dental visit [2].

It has been reported that dental anxiety among children is influenced by many factors. As indicated by the relevant literature, various studies have been conducted to evaluate the impact of specific factors on dental anxiety [3-6].

This article presents a review of the investigated factors which affect dental anxiety and provides an insight into the possible explanations on the influence of these factors.

1) Age

The age of the child is considered one of the factors which has a substantial impact on dental anxiety among children [4]. There is almost total agreement in the literature that younger children tend to be more anxious in the dental office compared to older children [5-7].

This is believed to result from feelings of the unknown and of abandonment among younger children. Child's cognitive ability develops with increasing age, thus resulting in more awareness and understanding [8]. As such, dental anxiety is more prevalent in those of a younger age, and declines as children become older.

In contrast, other reports have found no difference in the severity of dental anxiety between age groups [9-11].

Interestingly, certain other reports concluded that dental anxiety increases with age [3,12]. This could be explained by the possibility of other factors arising, such as having more previous painful dental experiences [4].

2) Gender

Evidence regarding differences in dental anxiety between boys and girls has been inconsistent. Most investigators reported higher levels of dental anxiety among girls [5-7,13].

On the contrary, certain other studies reported that there were no differences between both genders regarding dental anxiety [3,9,14,15]. In contrast, it has been reported that dental anxiety is more prevalent in boys [16].

These observations may be attributed to various factors, such as the cultural background of the population being studied, the structure

of the anxiety scales used, the real differences in anxiety levels between genders, the willingness to acknowledge anxiety feelings, or combinations of these factors [13,17].

3) Education and Socioeconomic Status

The education level of parents and the social class of the child's family have long been considered as the factors that affect the dental anxiety level of children [18].

Children from low socioeconomic families and low educational levels tend to experience more dental anxiety [7]. This could possibly be due to decreased dental awareness in low socioeconomic and educational level in families, thus meaning that dental anxiety increases [19].

On the other hand, it has been reported that high education level is associated with severe dental anxiety [4]. One explanation offered is that children from families with a higher income can more easily access information on dental procedures [4].

Certain other studies reported a very weak association regarding these factors [20,21], or no association between the dental anxiety of children and the various educational levels [22,23].

4) Ethnicity and Culture

Ethnicity and cultural background may influence the level of dental anxiety. In Arab cultural background, it has been suggested that boys are expected to act like men and to be brave [13,24]. On the other hand, in African culture, endurance to stress usually manifest as self-control and self-repression [25]. However, in American or European cultures, children can more easily express their anxiety and feelings [3].

5) Number of Siblings

In literature, dental anxiety level has been found to be associated with increased number of siblings [1,18]. This is more especially in preschool children from larger families, with three or more siblings [18].

The explanation for this could be that children with more number of siblings might be exposed to information about their siblings' dental treatments or they could observe their siblings displaying anxious behaviours during dental treatments [26].

On the contrary, a study by Aminabadi NA et al., showed that a single child in a family had higher dental anxiety compared to children with siblings [27]. In regard to birth order, they found that in children with siblings, the first-born child had increased dental anxiety [27].

Journal of Clinical and Diagnostic Research. 2018 Apr, Vol-12(4): SG01-SG03

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Influence of maternal anxiety on child anxiety during dental care: cross-sectional study

Influência da ansiedade materna na ansiedade infantil frente ao atendimento odontológico: estudo transversal

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KEY WORDS:

Child behavior.
Maternal behavior.
Dental anxiety.
Dentistry.
Manifest anxiety scale.

PALAVRAS-CHAVE:

Comportamento infantil.
Comportamento materno.
Ansiedade ao tratamento odontológico.
Odontologia.
Escala de ansiedade manifesta.

ABSTRACT

CONTEXT AND OBJECTIVES: Anxiety is usually classified as a disorder of neurotic nature and is often related to contexts of stress, which may include worries, motor tension and autonomic hyperactivity. The aim of this study was to assess the influence of mothers' anxiety on their children's anxiety during dental care. **DESIGN AND SETTING:** Analytical cross-sectional study conducted at in a private dentistry school in the south of Brazil.

METHODS: Convenience sampling was used. All mothers of children undergoing treatment were invited to participate in this study. Data to investigate anxiety related to dental treatment among the children were collected through applying the Venham Picture Test (VPT) scale. For the mothers, the Corah scale was applied. A self-administered sociodemographic questionnaire with questions about demographic, behavioral, oral health and dental service variables was also used.

RESULTS: 40 mother-child pairs were included in the study. The results showed that 40% of the children were anxious and 60% of the mothers were slightly anxious. Local anesthesia was the procedure that caused most anxiety among the mothers, making them somewhat uncomfortable and anxious (60%). Family income higher than R\$ 1,577.00 had an influence on maternal anxiety (75.6%). Maternal anxiety had an influence on child anxiety (81.3%).

CONCLUSION: Most of the children showed the presence of anxiety, which ranged from fear of dental care to panic, inferring that maternal anxiety has an influence on children's anxiety. Dental procedures did not interfere with the mothers' anxiety, but caused positive feelings, whereas they affected the children more.

RESUMO

CONTEXTO E OBJETIVO: A ansiedade é geralmente classificada como um transtorno de caráter neurótico, frequentemente relacionado a contextos de estresse variando entre preocupações, tensão motora e hiperatividade autonômica. O objetivo desta pesquisa foi avaliar a influência da ansiedade materna na ansiedade de seu filho durante o atendimento odontológico.

TIPO DE ESTUDO E LOCAL: Estudo analítico transversal realizado em uma faculdade particular do sul do Brasil.

MÉTODOS: Amostragem por conveniência foi utilizada. Todas as mães das crianças em tratamento foram convidadas a participar da pesquisa. A coleta dos dados para verificar a ansiedade relacionada com o tratamento odontológico nas crianças foi realizada a partir da aplicação da escala "Venham Picture Test" (VPT). Para as mães, foi utilizada a escala de Corah. Também se utilizou um questionário sociodemográfico autoaplicativo sobre variáveis demográficas, comportamentais, de saúde bucal e de serviço odontológico.

RESULTADOS: Foram incluídos 40 pares de mães e crianças. Os resultados mostraram que 40% das crianças estavam ansiosas e 60% das mães estavam levemente ansiosas. A anestesia local foi o procedimento que causou mais ansiedade entre as mães, deixando-as um pouco desconfortáveis e ansiosas (60%). Renda familiar maior de R\$ 1.577,00 influenciou a ansiedade materna (75,6%). A ansiedade materna influenciou a ansiedade das crianças (81,3%).

CONCLUSÃO: A maioria das crianças apresentou ansiedade, o que variou do medo ao pânico ao atendimento odontológico, inferindo que a ansiedade materna tem influência na ansiedade dos seus filhos. Os procedimentos odontológicos não interferem na ansiedade das mães, atingindo mais as crianças, porém provocam sentimentos positivos.

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Original ArticlepISSN 2383-9309 | eISSN 2383-9317
J Dent Anesth Pain Med 2016;16(3):199-202 | <http://dx.doi.org/10.17245/jdapm.2016.16.3.199>



Prevalence of dental anxiety in 10-14 years old children and its implications

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Background: The aim of this study was to provide insight on dental fear amongst schoolchildren and evaluate the association between caries experience and fear of dental procedures.
Methods: A sample size of 250 students (both sexes) of ages 10-14 years were enrolled in the study. Before dental examination, each participant was informed about the study and given the Children's Fear Survey Schedule - Dental Subscale (CFSS-DS) questionnaire. Children who scored greater than 38 were included in the 'with dental fear' group and those who scored less than 38 were assigned to the 'without dental fear' group. All oral checkups were carried out on the school premises according to WHO criteria.
Results: There were 105 children (42%) who experienced dental fear. As CFSS-DS scores increased, scores on the Decayed, Missing and Filled Surfaces Index (DMFS) also increased. Scores were highest on "injections" followed by "dentist drill" and "feeling of choking". Children were significantly less anxious about items of dental treatment if they had experienced that particular form of treatment. Female participants were found to be more dentally anxious than the male participants.
Conclusions: The data revealed dental fear in 10-14 years old children and showed that dental fear scores decreased with increase in age and experience.

Keywords: Dental anxiety; Dental Fear.

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INTRODUCTION

Dental fear is a pervasive problem and can lead to deliberate avoidance of dental treatment, thereby having an adverse effect on the patient's orofacial and psychological health. The term 'dental fear' can be defined as a specific anxiety that predisposes an individual to a negative or uncomfortable experience during dental procedures. It may cause occasional and sometimes serious problems for both patient and dentist. There are varied and multiple causes of dental fear in children that can be correlated to personality, general fear, previous painful dental experiences, dental fear in parents, age, and gender. Boys and older children report being less fearful than do girls and younger children [1,2]. The aims of this study were to present insight on dental fear in schoolchildren and to evaluate the association between

Received: 2016, July, 2. • Revised: 2016, September, 9. • Accepted: 2016, September, 21.
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J Dent Anesth Pain Med 2015;15(2):53-61 | <http://dx.doi.org/10.17245/jdapm.2015.15.2.53>

Dental fear & anxiety and dental pain in children and adolescents; a systemic review

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Background: There are few previous studies investigating the relationship of dental fear and anxiety (DFA) with dental pain among children and adolescents. To address this issue, we examined the literature published between November 1873 and May 2015 to evaluate the prevalence of DFA and dental pain among children and adolescents, and their relationships with age and sex.

Methods: We performed a broad search of the PubMed database using 3 combinations of the search terms *dental fear*, *anxiety*, and *dental pain* and *prevalence*. A large proportion of the identified articles could not be used for the review due to inadequate end points or measures, or because of poor study design. Thirty-two papers of acceptable quality were identified and reviewed.

Results: We found that the prevalence of DFA was estimated to be 10%, with a decrease in prevalence with age. It was more frequently seen in girls, and was related to dental pain.

Conclusions: We concluded that dental fear, anxiety, and pain are common, and several psychological factors are associated with their development. In order to better understand these relationships, further clinical evaluations and studies are required.

Key Words: Adolescent; Child; Dental Anxiety; Dental Fear; Pain; Prevalence.

INTRODUCTION

Children's uncooperativeness in dentistry has been conceptualized in different ways. Dental fear (DF) and dental anxiety (DA) are used to denote early signs of dental phobia (DP): an excessive or unreasonable fear or anxiety with regard to the challenge/threat of dental examination and treatment, which influences daily living and results in prolonged avoidance of dental treatment [1]. Dental anxiety and fear (DFA) in children has been recognized in many countries as a public health dilemma [2], and has been studied at length. In the late 1960s, Norman Corah developed the Dental Anxiety Scale (DAS), providing an organizing principle to examine this issue [3]. Dental fear is a normal emotional reaction to one or more specific threatening stimuli within the dental situation, while DA denotes a state of apprehension that something dreadful will happen in relation to dental treatment, coupled with a sense of losing control. Dental phobia represents a severe type of DA and is characterized by marked and persistent anxiety in relation either to clearly discernible situations/objects (e.g., drilling, injections) or to dental situations in general [4]. Henry Lauth investigated whether these patients' fear was related to the nature and the characteristics of dental care [5], while Elliot Gale concluded that clinicians needed to assess the situation of the patient, rather than actual pain under any circumstances, when assessing DF [6]. Moore et al compared the overall demographic trends and

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Received: 2015. 6. 19. • Revised: 2015. 7. 3. • Accepted: 2015. 7. 3.
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DOI 10.1186/s12903-017-0338-9

BMC Oral Health

RESEARCH ARTICLE Open Access

 CrossMark

Do children's previous dental experience and fear affect their perceived oral health-related quality of life (OHRQoL)?

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Abstract

Background: Oral health-related quality of life (OHRQoL) has been used to describe the consequences of oral health conditions and treatments in children. A better understanding of OHRQoL and its relationship with dental fear and previous dental experience is necessary to improve children's oral health status. The aim of this study was to investigate the association of dental history and experience with dental fear and the OHRQoL of children aged 11 to 14 years.

Methods: A cross-sectional study was conducted using a multi-stage stratified sample of 1,312 middle school children. Information regarding OHRQoL was collected from the children using the Child Perceptions Questionnaire (CPQ_{11–14}), and information regarding dental fear was collected using the Children's Fear Survey Schedule-Dental Subscale (CFSS-DS). Information on past dental experiences and sociodemographic data were collected from the parents using self-administered questionnaires. Dental examinations were performed to assess caries experience.

Results: The multivariable model indicated that dental fear was the strongest predictor of OHRQoL as the fearful children had on average CPQ_{11–14} scores that were 10 units higher than those of the non-fearful children. Regarding past dental experience, pain as the reason for the most recent dental visit was associated with poor OHRQoL, while receiving a filling during the previous dental visits was significantly associated with better OHRQoL. In addition, a larger number of siblings, a lower family income, a lower paternal education level, health problems and prior hospitalization were significantly associated with poor OHRQoL.

Conclusion: This study identified that dental fear and some factors related to previous dental experience are associated with OHRQoL. In dental practice, children with dental fear should be identified, guided and treated early to avoid deterioration of their OHRQoL.

Keywords: Oral health-related quality of life, CPQ, CPQ_{11–14}, Children, Dental fear, Dental experience, predictors

Background

It is important to assess the influence of oral health on the everyday life of children because oral diseases may not only limit children's current physical, social and psychological well-being but may also affect their future development and academic achievement. Oral health-related quality of life (OHRQoL) is a multidimensional construct that consists of subjective assessments of oral health, emotional and functional well-being and self-esteem [1]. It has commonly been used to describe the outcomes of oral health conditions and treatments in children [1]. The late childhood/pre-adolescence stage is frequently characterized by a potentially high caries rate, a tendency toward poor nutritional habits, dental phobia, eating disorders, pre-occupation with others' views and unique social and psychological needs [2]. A better understanding of OHRQoL and its influencing dental and clinical factors in pre-adolescent children is necessary to provide them with optimum oral health care and treatment and improve their oral health.

Many questionnaires have been developed to assess OHRQoL in children. The Child Perceptions Questionnaire

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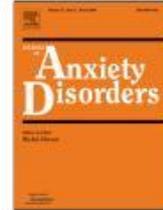
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To appear in: *Journal of Anxiety Disorders*

Received date: 12-5-2010
Revised date: 13-9-2010
Accepted date: 15-9-2010

Please cite this article as: Humphris, G., & King, K., The prevalence of dental anxiety across previous distressing experiences, *Journal of Anxiety Disorders* (2010), doi:10.1016/j.janxdis.2010.09.007

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Connection between the child's behavior in the dental office and premature tooth extraction

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Abstract

Dental anxiety and negative behavior are common problems in children. The aim of this study is to evaluate the connection between a child's behaviour in the dental office and premature tooth loss. Methods and materials: Subject of monitoring of the clinical research were 140 school children with mixed dentition. The clinical group consists of 90 children with prematurely extracted teeth. The patients from the clinical group were divided into three groups of 30 patients. The control group consists of 50 children with intact denture. The child's behavior was assessed by the denti using a behavioral scale. A special evaluation form for behavior assessment about the level of negativism of the children was filled by the examining dentist. Frankl's rating scale was used. This scale consists of four stages and each defines specific behavior. Results: There were no definitely negative children in our study. The results show that most of the patients from the control group are positive towards the dental treatment – 61.2% and only 14.3% are negative. About 35% of the children with prematurely extracted teeth are positive, most of them – 61.3% are negative. Conclusion: Most of the children with prematurely extracted teeth are negative towards dental treatment due to which they are with poor dental health and early tooth loss. The use of behavioural techniques are recommended in order to improve their oral health and to reduce the number of premature extractions.

Keywords: premature extraction, child's behavior, Frankl's scale, primary teeth

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Review: Behaviour Management Techniques in Paediatric Dentistry

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BACKGROUND: Behaviour management is widely agreed to be a key factor in providing dental care for children. Indeed, if a child's behaviour in the dental surgery/office cannot be managed then it is difficult if not impossible to carry out any dental care that is needed. It is imperative that any approach to behavioural management for the dental child patient must be rooted in empathy and a concern for the well being of each child. **REVIEW:** Based on various presentations given at Congresses of the European Academy of Paediatric Dentistry (EAPD), documents reviewing behaviour management prepared by the Clinical Affairs Committee of the EAPD, and written submissions to the Executive Board of the EAPD, a review of the various approaches to the behaviour management of the child dental patient was completed. All aspects of non-pharmacological behavioural management techniques described in the literature over the past 80 years were reviewed. **FINDINGS:** There is a very wide diversity of techniques used but not all are universally accepted by specialist paediatric and general dentists. Wide cultural and philosophical differences are apparent among European paediatric dentists that seem difficult to bridge when forming agreed guidelines. Accordingly, this review highlights those behaviour techniques that are universally accepted such as tell, show, do (TSD) or positive reinforcement, but nevertheless describes the most commonly mentioned techniques for which there are descriptions in the literature. **CONCLUSION:** A wide variety of behavioural management techniques are available to paediatric dentists which must be used as appropriate for the benefit of each child patient, and which, importantly, must take into account all cultural, philosophical and legal requirements in the country of dental practice of every dentist concerned with dental care of children.

Introduction

Behaviour management is widely agreed to be a key factor in the care of children in Paediatric Dentistry. Indeed, if a child's behaviour in the dental surgery/office cannot be managed then it is difficult if not impossible to carry out any dental care that is needed. Behaviour management is therefore one of the corner stones of the speciality. For these reasons guidelines have been published by many interested groups, societies and academies in paediatric dentistry and similarly the European Academy of Paediatric Dentistry (EAPD) has always had a major interest in this area. In recent years the

journal of the EAPD, *European Archives of Paediatric Dentistry*, has published papers dealing with aspects of behaviour management [Weinstein, 2008; Klingberg, 2008; Freeman, 2008; Klassen et al., 2008]

Guidelines are developed to help direct practitioners and are not meant to be legal documents that restrict practice or suggest that there is only one way to practice dentistry. Guidelines do however, imply an approval by their issuing body, and as such need to be agreed by that body as a whole. Dental education on the management of children by dentists and dental auxiliaries varies throughout Europe and such variations in approaches to the dental management of children have to be taken into account in preparing guidelines. Furthermore, there are substantial differences in cultural perspectives towards the raising of children across Europe. Some cultures are more permissive than others and such differences are reflected in the attitudes to behaviour management in the paediatric dental office/surgery. In the light of those differences, it seems currently premature to develop universal guidelines for European paediatric dentists. Instead, this paper will describe a representation of the available literature concerning the non-pharmacological management of child dental behaviour

It is important that the knowledge and practice of behaviour management should be incorporated in a continuous learning process or education for all paediatric dentists. Furthermore, the dental team as a whole, including all auxiliary personnel, should be trained in the knowledge and practice of the various techniques, so that all children may be cared for to the highest possible standards.

By implication, however, this implies that if the operating dentist does not feel that he or she is competent to meet the needs of the child or perform adequate treatment then contact with, or a referral to, a colleague, a secondary dental care clinic or to a specialist paediatric dentist should be considered.

Aim

This review is intended to inform general dentists and specialist paediatric dentists, together with other members of the dental health team, parents and other interested parties, of current concepts of managing child behaviour in the dental setting. This review was originally based upon, and influenced

Key words: behaviour management, paediatric dentistry, children

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PEDIATRICS AND NEONATAL NURSING *Openventio*
PUBLISHERS

ISSN 2377-1569 Open Journal  http://dx.doi.org/10.17140/PNNOJ-2-109

Research

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Volume 2 : Issue 2
Article Ref. #: 1000PNNOJ2109

Article History
Received: April 2nd, 2015
Accepted: April 29th, 2015
Published: April 30th, 2015

Citation
Nathan JE, Rayman MS, Golden BE, Vargas KG. Discretionary parental presence in the dental operator: a survey of pediatric dentists and parents. *Pediatr Neonatal Nurs Open J*. 2015; 2(2): 50-61. doi: 10.17140/PNNOJ-2-109

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Discretionary Parental Presence in the Dental Operator: A Survey of Pediatric Dentists and Parents

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ABSTRACT

Background: The decision to include or exclude parent presence in the dental operator during a child's visit has long been a controversial issue in pediatric dentistry. The intent of this paper was to explore the contemporary views of pediatric dentists and parents with respect to the rationale for which including or excluding parents has impact on children's behavior and response to dental treatment.

Methods: A printed mailed randomized survey of 1000 nationwide pediatric dentists was distributed. A second survey of parents was requested from offices which both included and excluded parents from the operator to ascertain their opinions of how they anticipated their children would react and whether or not their inclusion in the dental operator would impact favorably or not on their child's acceptance of care.

Results: In contrast to previous decades increasing interest and willingness of pediatric dentists to permit parent presence was found significant for children 30 months of age or older. Regardless of whether parents were permitted to be present in various offices, interest to be present among parents was found to be significantly increased for examinations and treatment. Where parent presence was permissible significant differences ($p < 0.001$) were found between parents from pediatric dental practices that routinely allowed parents to be present compared to both dentists and parents from practices in which parents were excluded.

Conclusions: For pre-school children, children lacking in cooperative potential, and those with a history of fearful or unpleasant previous experience, arbitrary exclusion of parents from the dental operator appears increasingly perceived as unproductive and unwarranted. Trends appear to emerge in the direction of increasing willingness of pediatric dentists to permit parent presence for examination and treatment visits.

KEYWORDS: Parent presence; Behavior guidance; Childhood dental anxiety.

INTRODUCTION AND BACKGROUND

Because dental treatment is openly viewed as unpleasant in our society, it is not surprising that for some, dental visits are seen as a threatening event. This can be particularly true for young, timid, and apprehensive children of any age.¹

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ORIGINAL ARTICLE

Parental acceptance of pediatric behavior management techniques: A comparative study

Abstract

Objectives: To evaluate and compare the attitude toward behavior techniques among parents of healthy and special children in Indian subpopulation. **Materials and Methods:** Parents of healthy (Group A) and special children (Group B) watched videotape vignette of 10 behavior management techniques (BMTs) in groups and rated them using Visual Analog Scale (VAS). Group B parents were subgrouped as: Group B₁ (34 parents of medically compromised children), Group B₂ (34 parents of physically compromised children), and Group B₃ (34 parents of children with neuropathological disorders). **Results:** Both Group A and Group B subjects judged all techniques as "acceptable." Group B parents were less accepting to techniques than Group A parents, except live modeling. Contingent escape and live modeling were the first ranked techniques in Group A and Group B parents, respectively. Voice control (VC) and hand-over-mouth exercise (HOM) were the least accepted techniques in both groups. Parents with low income and less education were more receptive to the techniques studied. A total of 25.49% of parents in each group did not consent to the use of HOM. **Conclusion:** Factors such as having a disabled child, low income, and less education influenced parental acceptability. HOM should be used with great caution and clinicians should approach the issue of informed consent on an individual basis.

Key words

Behavior management, child behavior, informed consent, parental acceptability, parental attitude.

Introduction

Behavior management is a comprehensive continuous methodology targeted to build relationship between child, parent, and doctor, aimed at eliminating fear and anxiety and ultimately building trust. It enables the dentist to forestall a positive dental attitude, to guide the child through their dental experience, and

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Access this article online

QR Code	Website: www.jsppd.com
	DOI: 10.4103/0970-4388.105010

to perform quality treatment safely. Another integral aspect of child dental care is to provide parents with previous information of behavior management techniques (BMTs).^[1] This delivery of information provides a mechanism by which parents can participate in treatment decisions with full understanding of factors related to their child's proposed dental care and helps in reducing situational parental anxiety.^[2] Thus, insights into factors that influence parental perceptions are necessary.

The dental literature has various studies reporting parental acceptability of BMTs,^[3-10] but no study has reported the attitude of Indian parents. Moreover, there is a paucity of scientific data regarding special child parent's attitude toward various techniques employed in pediatric dentistry. Greater knowledge in this area could lead to better dentist-parent communication, better parent education, and ultimately better care of a special child. Thus, this study was undertaken to evaluate and compare the attitude and acceptance toward BMTs among parents of healthy and special children. The aims

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The American Academy of Pediatric Dentistry
Volume 6 Number 4

SCIENTIFIC articles

Parental acceptance of pediatric dentistry behavior management techniques

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J. Bernard Machen, DDS, MA, MS, PhD

Abstract

The purpose of this study was to assess the attitudes of parents toward behavior management techniques employed in pediatric dentistry. Sixty-seven parents viewed videotaped segments of actual treatment of three- to five-year-old children with whom the following behavior management techniques were used successfully: general anesthesia, Papoose Board[®], sedation, hand-over-mouth exercise (HOME), physical restraint by the dentist, physical restraint by the assistant, mouth prop, voice control, positive reinforcement, and tell-show-do. Each parent indicated the acceptability of each technique for treating their child. Mean ratings and rankings were calculated for the behavior techniques, relationship of the approval of techniques to demographic and historical variables was established, and the correlations among age, socioeconomic status, and the approval of other behavior management techniques were calculated.

Both ratings and rankings indicated that the majority of parents favored tell-show-do, positive reinforcement, voice control, and mouth props. Physical restraint by the dentist and assistant were viewed significantly more favorably than sedation and HOME. The least acceptable techniques were general anesthesia and Papoose Board. Parents with more than one child found the Papoose Board significantly less acceptable than those with one child. Parents who visited the dentist before they were seven years old found voice control more acceptable. Parental age was not significantly related to approval of a technique, and parental socioeconomic status was correlated negatively with approval of general anesthesia.

Although the majority of young children exhibit little disruptive behavior in the dental setting,¹ there is a small percentage who exhibit behavior which makes dental treatment difficult. Dentists utilize numerous management techniques to obtain cooperative behavior. Tell-show-do,² expectation,³ positive reinforcement,⁴ and voice control⁵ can be incorporated easily into mildly disruptive situations. Mod-

eling,⁶ distraction,⁷ desensitization,⁸ and hypnosis⁹ have been proposed as preventive and corrective techniques for uncooperative behavior, but these techniques require additional time and skill for successful implementation. Hand-over-mouth-exercise(HOME)¹⁰ commonly is used to establish communication and obtain cooperation with highly disruptive or defiant children. Physical restraint appears to be indicated with extremely young, disruptive, or handicapped children.¹¹ When other techniques fail or seem inappropriate, sedation or general anesthesia may be indicated.¹²

While dentists continue to use these same management strategies, societal attitudes toward dealing with children have changed.¹³ Health professionals no longer can assume that parents are aware and approve of even the most routine behavior management technique. In addition, the use and acceptance of a technique by the profession does not assure its legality as viewed by today's courts.¹⁴ With the emphasis on children's rights, the attitude of parents toward behavior management techniques constitutes another important factor which must be considered when selecting an approach for managing behavior.

The purpose of this study was to assess parents' attitudes toward 10 behavior management techniques employed by dentists treating young children.

Methods and Materials

The 67 subjects for this study included parents from the Durham, Raleigh, and Chapel Hill, North Carolina areas. The only requirement for participation was that they must be or have been parents, but there was no limitation on socioeconomic status. All 67 subjects volunteered and before participation were informed of the study content.

At the beginning of the study, data were collected to calculate the Hollingshead index¹⁵ as well as infor-

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Academic Journal of
Pediatrics & Neonatology
ISSN 2474-7521



Juniper
PUBLISHERS
Key to the Researchers

Research ArticleAcad J Ped Neonatol

Volume 5 Issue 3 - August 2017
DOI: 10.19080/AJPN.2017.05.555722

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Behavior Management Techniques in Pediatric Dentistry: How Well are they Accepted?



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Submission: June 14, 2017; **Published:** August 09, 2017

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Abstract

Introduction: Behavior management of child dental patients is essential and pediatric dentists use a variety of Behavioral and pharmacological techniques.

Aim and objective: To examine the acceptance by parents living in Saudi Arabia of nine Behavior-management techniques and its association with several possible confounding factors.

Methodology: Following ethical approval, the parents were shown a video with nine behavior management techniques and their acceptance rate of each technique on a VAS (0-10).

Results: A total of 405 participants were recruited in this study from different cities in Kingdom of Saudi Arabia. 127 participants were male (31.4%) and 278 female (68.6%).

Conclusion: The most accepted technique was Tell-Show-Do, and the second preferred technique was Nitrous oxide inhalation sedation followed by GA and the least preferred was Passive restraint followed by HOM technique. Male parents preferred general anesthesia while the female parents preferred nitrous oxide inhalation sedation.

Introduction

Behavior management of child dental patients is essential, and pediatric dentists use a variety of Behavioral and pharmacological techniques [1-3]. These techniques undergo re-assessment over time and some of them may have already been abandoned. One of the factors most frequently cited for these changes is parental acceptance [2-7]. This underlines the importance of pediatric dentists understanding which Behavior-management techniques are still acceptable to parents and identifying the factors influencing their acceptability.

Aim and Objective

To examine the acceptance by parents living in Saudi Arabia of nine Behavior-management techniques and its association with several possible confounding factors.

Review of Literature

Lawrence et al. [8] evaluated parents' attitudes toward behavior management techniques used in pediatric dentistry by comparing the effect of prior explanation on parental acceptance of eight behavior management techniques. Videotaped segments

made of children's dental appointments containing examples of eight behavior management techniques were used. Parents viewing videotapes with explanations were significantly more accepting of behavior management techniques than those viewing videotapes without explanations; Mean visual analogue scores for both groups indicated generally positive attitudes toward the behavior management techniques studied. Parents reporting greater stress were less accepting of the behavior management techniques studied.

Murphy et al. [9] assessed the attitudes of parents toward behavior management techniques employed in pediatric dentistry. Sixty-seven parents viewed videotaped segments of actual treatment of three to five-year-old children. The majority of parents favored tell-show-do, positive reinforcement, voice control, and mouth props. Physical restraint by the dentist and assistant were viewed significantly more favorably than sedation and HOME. The least acceptable techniques were general anesthesia and Pappoose Board.

Boka et al. [10] examined the acceptance by Greek parents of nine Behavior-management techniques and its association with

Acad J Ped Neonatol 5(3); AJPN MS ID: 555722 (2017)

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Review Article

Techniques for the Behaviors Management in Pediatric Dentistry

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Abstract

Changing attitudes on the module of dentists and parents identical have resulted in rising concern by dentists to develop supplementary child behavior management techniques. Mutual research among dentists and behavioral psychologists has been supported by the American Academy of Pediatric Dentistry to deal with these concerns, but further research is needed. This paper explains many techniques that, from a behavioral science perception, offer assurance for pediatric dentists managing troublesome children. In adding up to scientific appeal, these techniques emerge to have potential for reception and incorporation into the dental operator. While early research proposed these procedures can fit simply into regular practice, save cost efficient and time, and are moderately easy to find out. Behaviors management methods in pediatric dentistry are focused toward the target of communication and education. An affirmative relationship between the dentist and child is built during an ever-changing procedure and is our primary goal.

Keywords: Behavior management, Child behavior, Pediatric dentistry

INTRODUCTION

Behavior management of the pediatric patient is an essential part of pediatric dental practice. A significant percentage of children do not co-operate in the dental chair, hence causing an obstacle to liberation of quality dental care. For a child who is not capable of co-operate, the dentist has to rely on other behavior management techniques as substitute or addition to communicative management.¹ Behavior management methods concern communication and education. The relationship connecting the child, the child's family and the dental team is an energetic process. It may begin before the patient lands in the surgery and can engage written information as well as exchange of ideas, voice tone, body language, facial expression and touch.² Development and a variety of outlook toward dental treatment, it is very important that dentists have at their clearance a wide variety of behavior management techniques and communication techniques to meet the needs of the every child. The objectives of child management are listed below:

1. To assemble the child comfortable
2. To offer freedom from pain

3. To execute the procedures safely
4. To hold out the treatment capable and
5. To boast the child and the parent agreement to the procedures.³

CHILDREN WITH DENTAL ANXIETY

Dental anxiety is defined as a feeling of fretfulness about dental treatment that is not essentially connected to a particular external stimulus. According to Chadwick and Hosey (2003), anxiety is familiar in children and the symptoms of anxiety are reliant on the age of the child. Toddlers reveal anxiety by crying while grown-up children noticeable anxiety in other ways. Common anxieties among kids include fearing the mysterious and being worried regarding a lack of manage-both of which can happen with dental assessment and treatment. The capability of a child to deal with dental procedures depends on his/her phase of development. Children could be supportive, potentially cooperative, or not have the ability to be supportive (sometimes called pre-cooperative). Pre-cooperative children contain the very young and those

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Open Access

Application of Behavior Management Techniques for Paediatric Dental Patients by Tanzanian Dental Practitioners

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Abstract: *Background:* Management of children's behavior is an integral component of pediatric dental practice. *Objective:* To investigate the oral health care providers' awareness, use and factors for choice of behavior management techniques when attending paediatric dental patients. *Method:* A cross-sectional study among dental practitioners in Dar es Salaam, Tanzania. Data collection was done through interview using a structured questionnaire. The recorded information included: awareness and application of behavior management techniques (BMT) when attending a child dental patient, factors influencing choice of a particular technique, socio-demographics, level of professional training, working experience and facility profile. Using SPSS program version 18, frequency distributions and cross tabulations analyses were performed. *Results:* 74 dental practitioners participated in the study, of whom 49 (66.2%) were males and 44 (59.5%) were graduates. Most participants were aware of the behavior management techniques, ranging from 100% for Tell-Show-Do to 86% for distraction. A small proportion (9.5%) reported to have adequate skills, all of them were graduates. The use of universally accepted BMTs was reported by 65% of experienced practitioners, 61% of graduates, 59% of those reporting to have received formal training and all of those reporting to have fair/inadequate skills to apply BMTs ($p=0.01$). *Conclusion:* Most participants were aware of BMTs, although few acknowledged having adequate skills to apply the techniques. They use BMTs during treatment of paediatric dental patients and their choice of the technique is mainly influenced by children's factors.

Keywords: Awareness, behavior management techniques, paediatric, practitioners, professional training, Tanzania.

INTRODUCTION

Management of children's behavior is an integral component of pediatric dental practice [1]. It is as fundamental to the successful treatment of children as are hand piece skills and knowledge of dental materials in dental practice [2] and it is achieved through application of various Behavior Management Techniques (BMTs). BMTs are a set of procedures aimed at enhancing the child's useful coping skills, achieve complete willing and acceptance of dental care, and ultimately reduce the child's perception that the dental situation is overwhelming or dangerous [1]. In other words, the techniques are employed by dental practitioners in attending a child dental patient so as to establish communication, alleviate fear and anxiety, facilitate delivery of quality dental care, build a trusting relationship between dentist, child, and parent, and promote the child's positive attitude towards oral/dental health and oral health care thus cope with and be willing to undertake dental treatment procedures [3-5].

Approaches for behavioural management changed considerably during the second half of the 20th century, with an increasing emphasis on communication and empathic skills [6]. They have been codified into professionally derived

guidelines [7]. To date, a wide variety of behavior management techniques are available to dental practitioners [8, 9], namely; tell-show-do, desensitization, modeling, positive reinforcement, voice control, distraction, parental presence/absence, restrain/protective stabilization, non verbal communication, hand-over-mouth, sedation and general anaesthesia.

Behavior management techniques have been classified as pharmacological as opposed to non pharmacological, communicative (communication and communicative guidance) versus advanced behavior guidance techniques and universally accepted against non-universally accepted ones, as well as informal and common sense techniques versus formal relaxation techniques [1, 10]. The classification into universally and non-universally applied techniques was used during analysis and reporting in this article.

Different authors have reported application of BMTs in different countries/societies. In the United States, Carr and Wilson [8] reported that the Southeastern US dentists used less aversive techniques and reported a marked reduction in the use of the hand over mouth exercise. A survey among active members of the American Academy of Pediatric Dentistry residing in the U.S. and Canada showed that only a minority used hand-over-mouth and active immobilization of sedated patients. No significant differences by groups were seen in respect to the use of most basic behavior management techniques. Significant differences by sex and age were seen for the use of non-verbal communication and advanced

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10.5005/jp-journals-00000-0000

ORIGINAL RESEARCH



Parental Presence/Absence in the Dental Operator as a Behavior Management Technique: A Review and Modified View

¹Hicham Riba, ²Asma Al-Shahrani, ³Hayat Al-Ghutaimel, ⁴Adel Al-Otaibi, ⁵Salim Al-Kahtani

ABSTRACT

Introduction: Parental presence/absence in the dental operator (also called: Parent-in–parent-out technique) is an extremely controversial aspect of the nonpharmacological BMTs. Historically, dentists used to exclude parents from dental operator to avoid their interference with the dentist’s aptitude to build a rapport and relationship with the child, hence increasing the child management problems by disrupting treatment and making the dentist unfocused and uncomfortable.

Aim: The purpose of this article is to review and emphasize on the importance of parental presence/absence in the dental operator, especially in a certain age group, as a behavior management technique (BMT) in pediatric dentistry, and to present a modified view of this technique.

Results: This article reviews the current literature concerning behavior management in pediatric dentistry. It includes a medline database search and review of the comprehensive textbooks in pediatric dentistry. Some recommendations were based on the opinions of experienced researchers and clinicians.

Conclusion: Parent-in–parent-out technique in dental operator is advocated to gain emotional support and avoid the effect of traumatic separation, especially in younger children or special health-care needs patients.

Clinical significance: The parent-in–parent-out technique in dental operator is underused, or misused. This article clarifies the proper use of this technique along with a minor modification to it to make it more effective on young apprehensive dental patients.

Keywords: Behavior management, Dental operator, Parental absence, Parental presence, Pediatric dentistry.

How to cite this article: Riba H, Al-Shahrani A, Al-Ghutaimel H, Al-Otaibi A, Al-Kahtani S. Parental Presence/Absence in the Dental Operator as a Behavior Management Technique: A Review and Modified View. *J Contemp Dent Pract* 2018;19(2):1-5

Source of support: Nil

Conflict of interest: None

INTRODUCTION

Children usually experience reactions of strong fear and acute anxiety when visiting the dental office. In response to their fear and anxiety about dental procedures, they more likely respond to their feelings and exhibit a wide range of negative attitudes and behaviors.¹ Therefore, a diversity of BMTs is used for children during the dental procedures to alleviate their fear and anxiety, promote their positive attitude, deliver good-quality dental care, establish communication, and build trust relationship between the child and the dental team.²

Behavior management is the science and art of adjusting a negative behavior and developing new behaviors that will help the child cope with and withstand the delivered dental procedures.³⁻⁵ The BMTs are considered essential in pediatric dentistry. Without such a skill, dentists would not be able to deliver appropriate and safe treatment.³⁻⁷

In 1895, McElroy wrote: “Although the operative dentistry may be perfect, the appointment is a failure if the child departs in tears.”⁸ This was considered the first base mentioned in the pediatric dental literature to measure success or failure of a child’s dental visit.² Later, it has led to the definition of behavior modification as (the attempt to alter human behavior and emotion in

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Eur Arch Paediatr Dent
DOI 10.1007/s40368-014-0119-y

ORIGINAL SCIENTIFIC ARTICLE

Parental acceptance of behaviour-management techniques used in paediatric dentistry and its relation to parental dental anxiety and experience

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Received: 11 December 2013 / Accepted: 31 January 2014
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Abstract

Aim The aim of this study was to examine the acceptance by Greek parents of nine behaviour-management techniques and its association with several possible confounding factors.

Study design Following ethical approval, 106 parents whose 3- to 12-year-old children had been receiving treatment in a university postgraduate paediatric dental clinic, and 123 parents of children from a private paediatric dental practice agreed to participate.

Methods After being shown a video with nine behaviour-management techniques, parents rated the acceptance of each technique on a 0–10 scale. They were then asked to complete a questionnaire about demographics, their previous dental experience and dental anxiety (modified Corah dental anxiety scale).

Results The best accepted technique was tell–show–do (9.76 ± 0.69), followed by parental presence/absence (PPA) technique (7.83 ± 3.06) and nitrous oxide inhalation sedation (7.09 ± 3.02). The least accepted techniques were passive restraint (4.21 ± 3.84) and general anaesthesia (4.21 ± 4.02). No correlations were found between acceptance of any individual management technique and parental age, gender, income, education, dental experience and dental anxiety or the child's age, gender and dental

experience. Parents whose children had been treated at the University clinic had lower income and educational levels, and rated passive restraint, oral sedation and general anaesthesia higher than those from the private practice. When the parents were specifically asked to choose between general anaesthesia over any of the active or passive restraint, hand-over-mouth and voice control techniques, 10 % preferred general anaesthesia, and these parents reported statistically significant more negative dental experience but not higher dental anxiety.

Statistics Statistical significance of differences was explored using the Tukey–Kramer method.

Conclusion There was no correlation between parental dental experience and dental anxiety and the acceptance of any specific behaviour-management technique. However, parents with negative dental experience would prefer general anaesthesia over any of active or passive restraint, hand-over-mouth and voice control techniques. PPA is a highly acceptable technique for Greek parents.

Keywords Acceptance · Behaviour-management techniques · Child · Parent · Dental anxiety · Dental experience · Parental presence/absence technique

Introduction

Behaviour management of child dental patients is essential, and paediatric dentists use a variety of behavioural and pharmacological techniques (Adair et al. 2004; Roberts et al. 2010; AAPD Clinical Guidelines 2011). These techniques undergo re-assessment over time and some of them may have already been abandoned. One of the factors most frequently cited for these changes is parental acceptance (Davis 1988; Houpt 1993; Kuhn and Allen 1994;

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Published online: 28 March 2014

 Springer

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Dentistry

Nathan, *Dentistry* 2016, 6:5
DOI: 10.4172/2161-1122.1000e117

EditorialOpen Access

The Evolution and Changing Patterns of Behavioral Management of Challenging Childhood Dental Anxiety: A Crossroad

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Rec Date: May 7, 2016; Acc Date: May 9, 2016; Pub Date: May 15, 2016

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Introduction

The last several decades has witnessed significant change in the attitudes and perceptions of both parents and Pediatric Dental Specialists toward what constitutes acceptable and appropriate strategies for managing challenging children's dental anxiety and behaviors. Changing parental childrearing practices and attitudes have no doubt influenced pediatric dentists to modify their approaches and perceptions toward both non-pharmacological and pharmacological techniques. Greater parental involvement and interest to take a more active role in the decision process has become the norm rather than the exception.

Behavioral Management of Challenging Childhood Dental Anxiety

Over the course of nearly four decades of academics and private practice this clinician has observed considerable change in the way in which we approach behavioral guidance of children in the dental setting. Looking backward, there was a time when the dentist and specialist were universally regarded by parents as the experts to best select the methods appropriate for their child. Discipline was largely and willingly allocated to the dentist to overcome or repel uncooperative and resistive child behavior. Today, such a stance might better be viewed as somewhat rare. Understandably, parents choose to take a more active role in decision making as it relates to how their child is to be spoken to and treated. For the pediatric specialist, called upon to remedy a developing management problem, parental reticence if not skepticism not uncommonly prevails, particularly under circumstances where a child's previous experience deteriorated. Parental preferences and patient acceptance of the practitioner's need to establish authority and in some cases provide discipline for certain misbehaviors has lessened. Parents today appear to show increasing interest and involvement to witness the clinician's management style and participate in the decision process as to which techniques are to be instituted.

While behavioral objectives remain essentially similar, to ultimately facilitate and foster a child's positive attitude toward care, encourage and enhance cooperation, eliminate or circumvent fearful responses, methods and parental expectations appear to be reshaping how pediatric dentists make use of various conventional (or mainstream) techniques as well as pharmacological (advanced) approaches [1,2].

One aspect remaining controversial amongst pediatric dental specialists is whether to include or exclude parents from the dental treatment room. Historically, a notion that parent presence interfered with a dentist's ability to establish a rapport with a child, or that their presence limited productivity is gradually being replaced by both

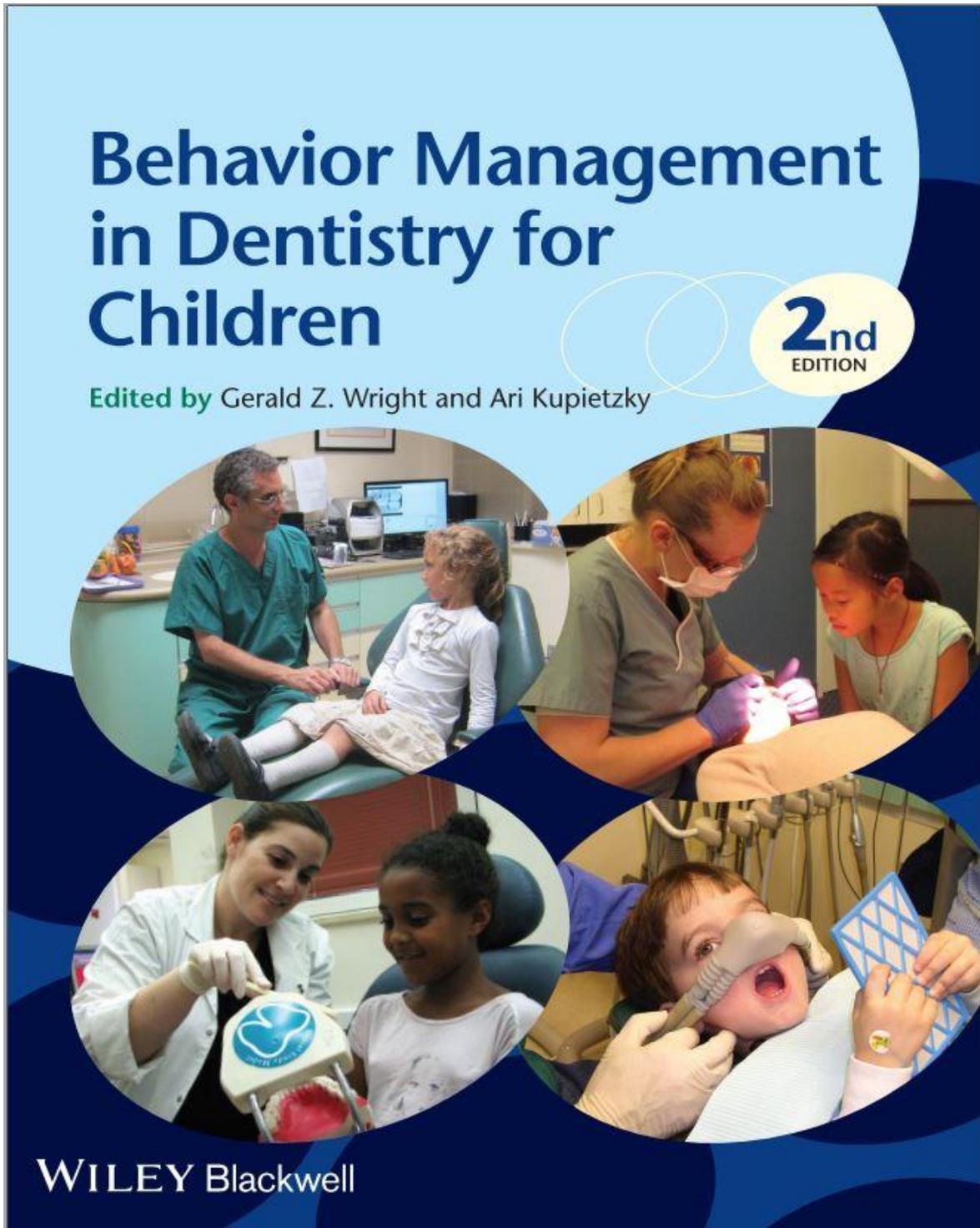
parent demand to be present, and changing dentists' perception of the inherent benefits of parent inclusion to elicit more favorable child behavior while in a new environment with a familiar face. Some practitioners are simply uncomfortable managing a challenging child in a parent's presence. Some may be reticent to permit a parent to witness how they manage difficult child behavior in the parent's presence. In any case, consensus this day appears in the direction of readily permitting parent presence to aid and intercept a negative child response which occurs when a young or timid child is arbitrarily separated from their parent well before opportunity to introduce the child to a new setting [3].

There are notable exceptions to this scenario upon which both dentists and parents do not disagree. Parents unable to refrain from overt displays of their own dental anxiety, through verbalization or fearful body language in their child's presence, can serve to nullify the benefits of parent inclusion. Most clinicians, however, believe that taking a few moments to positively counsel such a parent to guide one's emotions and demeanor in their child's presence can remedy this potential downside [3]. It is noteworthy that not until 1996 the American Academy of Pediatric Dentistry formally recognized the usefulness of having a parent present as a specific management technique to gain patients' attention and compliance, avert negative or avoidance behaviors, and to enable the dentist to establish authority for treatment [3].

While the vast majority of children possess cooperative potential and coping skills to accept invasive or unpleasant dental treatment using conventional or mainstream communication techniques, there are those for whom non-pharmacological approaches prove inadequate or inappropriate. Pre-cooperative and severely apprehensive children have immature cognitive abilities, a restricted range of coping skills, brief or negligible attention spans, and virtually no experience coping with stress [3]. For such cases, more advanced techniques including pharmacological (both conscious and unconscious) approaches may become warranted. The decision to abandon communication strategies, however, is often not clear cut. Clinician variability in training and experience impact on the selection, efficacy, and safety of pharmacological approaches. While some lack proficiency and comfort level in selection and use of pharmacologic adjuncts, others have considerable expertise with sedative modalities and successfully minimize or eliminate the need for restraints. The last several decades has observed heated arguments and diverse opinions as to the appropriateness of aversive techniques (voice control, hand-over-mouth, physical restraints or what is termed, protective immobilization) vs the use of various sedative agents and combinations to terminate and circumvent interfering child behavior. Use of what was once considered a viable and powerfully effective management tool, hand-over-mouth, fell into disfavor by

Dentistry
ISSN:2161-1122 Dentistry, an open access journalVolume 6 • Issue 5 • 1000e117

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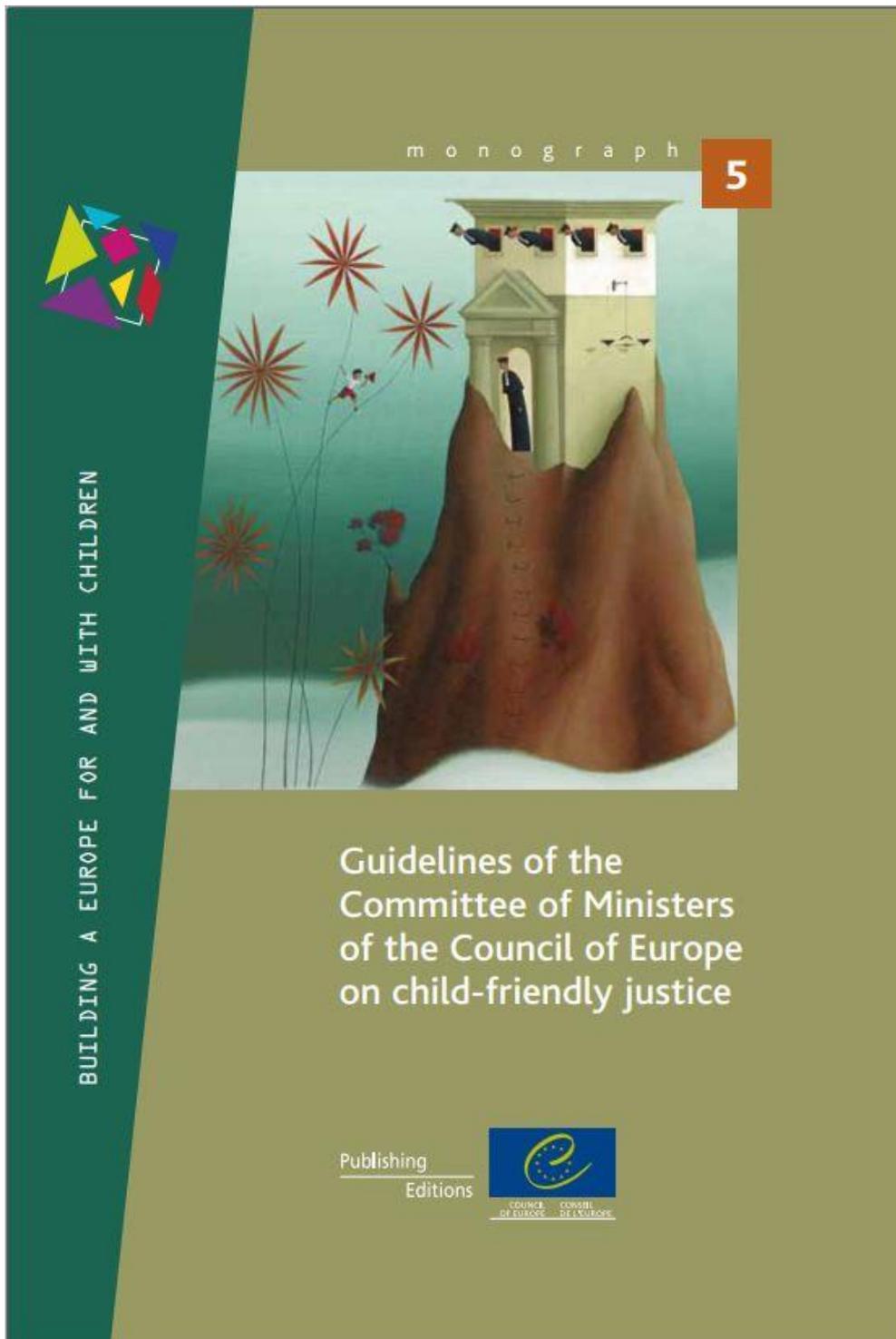
New York, 20 November 1989

ENTRY INTO FORCE: 2 September 1990, in accordance with article 49(1).
REGISTRATION: 2 September 1990, No. 27531.
STATUS: Signatories: 140. Parties: 196.
TEXT: United Nations, *Treaty Series*, vol. 1577, p. 3; depositary notifications C.N.147.1993.TREATIES-5 of 15 May 1993 [amendments to article 43 (2)]¹; and C.N.322.1995.TREATIES-7 of 7 November 1995 [amendment to article 43 (2)].

Note: The Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, was adopted by [resolution 44/25](#)² of 20 November 1989 at the Forty-fourth session of the General Assembly of the United Nations. The Convention is open for signature by all States at the Headquarters of the United Nations in New York.

<i>Participant</i>	<i>Signature</i>	<i>Ratification, Acceptance(A), Accession(a), Succession(d)</i>	<i>Participant</i>	<i>Signature</i>	<i>Ratification, Acceptance(A), Accession(a), Succession(d)</i>
Afghanistan.....	27 Sep 1990	28 Mar 1994	Burundi.....	8 May 1990	19 Oct 1990
Albania.....	26 Jan 1990	27 Feb 1992	Cabo Verde.....		4 Jun 1992 a
Algeria.....	26 Jan 1990	16 Apr 1993	Cambodia.....		15 Oct 1992 a
Andorra.....	2 Oct 1995	2 Jan 1996	Cameroon.....	25 Sep 1990	11 Jan 1993
Angola.....	14 Feb 1990	5 Dec 1990	Canada.....	28 May 1990	13 Dec 1991
Antigua and Barbuda.....	12 Mar 1991	5 Oct 1993	Central African Republic.....	30 Jul 1990	23 Apr 1992
Argentina.....	29 Jun 1990	4 Dec 1990	Chad.....	30 Sep 1990	2 Oct 1990
Armenia.....		23 Jun 1993 a	Chile.....	26 Jan 1990	13 Aug 1990
Australia.....	22 Aug 1990	17 Dec 1990	China ^{5,6}	29 Aug 1990	2 Mar 1992
Austria ³	26 Jan 1990	6 Aug 1992	Colombia.....	26 Jan 1990	28 Jan 1991
Azerbaijan.....		13 Aug 1992 a	Comoros.....	30 Sep 1990	22 Jun 1993
Bahamas.....	30 Oct 1990	20 Feb 1991	Congo.....		14 Oct 1993 a
Bahrain.....		13 Feb 1992 a	Cook Islands.....		6 Jun 1997 a
Bangladesh.....	26 Jan 1990	3 Aug 1990	Costa Rica.....	26 Jan 1990	21 Aug 1990
Barbados.....	19 Apr 1990	9 Oct 1990	Côte d'Ivoire.....	26 Jan 1990	4 Feb 1991
Belarus.....	26 Jan 1990	1 Oct 1990	Croatia ⁴		12 Oct 1992 d
Belgium.....	26 Jan 1990	16 Dec 1991	Cuba.....	26 Jan 1990	21 Aug 1991
Belize.....	2 Mar 1990	2 May 1990	Cyprus.....	5 Oct 1990	7 Feb 1991
Benin.....	25 Apr 1990	3 Aug 1990	Czech Republic ⁷		22 Feb 1993 d
Bhutan.....	4 Jun 1990	1 Aug 1990	Democratic People's Republic of Korea.....	23 Aug 1990	21 Sep 1990
Bolivia (Plurinational State of).....	8 Mar 1990	26 Jun 1990	Democratic Republic of the Congo.....	20 Mar 1990	27 Sep 1990
Bosnia and Herzegovina ⁴		1 Sep 1993 d	Denmark ⁸	26 Jan 1990	19 Jul 1991
Botswana.....		14 Mar 1995 a	Djibouti.....	30 Sep 1990	6 Dec 1990
Brazil.....	26 Jan 1990	24 Sep 1990	Dominica.....	26 Jan 1990	13 Mar 1991
Brunei Darussalam.....		27 Dec 1995 a	Dominican Republic.....	8 Aug 1990	11 Jun 1991
Bulgaria.....	31 May 1990	3 Jun 1991	Ecuador.....	26 Jan 1990	23 Mar 1990
Burkina Faso.....	26 Jan 1990	31 Aug 1990			

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Improving Children and Young People's Health Outcomes: a system wide response

This document has been compiled by the Department of Health with the Care Quality Commission, Department for Education, Health Education England, Healthwatch England, Medicines and Healthcare products Regulatory Authority, Monitor, NHS Commissioning Board, NHS Information Centre, NHS Trust Development Authority, National Institute for Health and Clinical Excellence, Public Health England, Royal College of General Practitioners, Royal College of Nursing, Royal College of Paediatrics and Child Health and the Royal College of Psychiatrists.

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Journal of Marriage and Family



**Have Authoritarian Parenting Practices and Roles Changed
in The Last Fifty Years?**

Journal:	<i>Journal of Marriage and Family</i>
Manuscript ID:	JMF-2013-3545-MS.R1
Manuscript Type:	Original Manuscript
Keywords:	Parenting < Parenting and Parenthood, Parent-child relations < Parenting < Parenting and Parenthood, Family roles < Gender, Cohort < Social Context, Child discipline/guidance < Parenting < Parenting and Parenthood

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