

Innovations

Recent Advances in Behavior Management Among Children

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Abstract:

Behaviour management techniques are important part of paediatric dentistry in managing the child and for providing successful treatment outcome. The major criterion in managing the child in dental clinic is by proper communication combined with good rapport which makes the child fearless and cooperative. These are challenging aspect for paediatric dentist whereas various traditional methods for behaviour management have been employed and few can tend to be aggressive technique in the eyes of children and their parent. Recently there are various modifications and innovations have created a new technique in the paediatric field to overcome the disadvantages faced in traditional technique. This newer technique have been utilized in clinics and found to be advantageous and makes the child cooperative and have interest in facing the dentist in future. This review article will focus on various recent advances in behaviour management techniques in children.

Keywords: Anxiety, Behaviour Management, Children, Techniques

Introduction:

Wright in 1975 defined behaviour management as the means by which the dental health team effectively and efficiently performs treatment for a child patient and at the same time instills a positive dental attitude. Paediatric dentistry is special fields were the paediatric dentist are expected to effectively identify and treat the children with good clinical knowledge and attitude. For the effective treatment both the child and the parents are made to understand their roles by providing them better behaviour guidance. This can be mainly achieved by proper communication with child and their parents, also educating them regarding the treatment plan and procedure.

The commonly used conventional behaviour management techniques are; non-verbal communication, voice control, distraction, tell-show-do, hand over mouth, etc. but this method may not work in all cases, the correct intervention techniques should be selected based on the child needs and requirement. Nowadays, parenting methods has drastically changed and some of these traditional techniques may show invasiveness among children that reduces the acceptability in turn.

To overcome this, newer techniques have been studied and employed such as Virtual reality-based distraction, motivation, pain management, etc. In this review article we aimed to enumerate the various recent advances in behaviour management techniques for children in paediatric dentistry.

Various traditional behaviour guidance methods:

- Positive pre- visit imagery
- Communication guidance
- Memory reconstruction
- Ask-tell-ask
- Positive reinforcement
- Motivational speech
- Teaching back

Positive pre-visit imagery:

The paediatric patients and their parents are shown with positive images of dental procedures before the particular procedure is started.

Objective:

- To provide the children and parents with visual knowledge of what is the procedure and what to expect from the paediatric dentists
- If shown in the 1st visit, children will have a chance to ask questions to the dentist about the procedure.

Communication guidance:

It is an older technique where communication helps in children who are both cooperative and non-cooperative. Before starting the procedure, good communication with patient and their parents makes them more comfortable.

Objective:

- To develop good rapport and understanding
- To make better student-teacher relation with the patient

Memory reconstruction:

It is a type of behaviour management where the old negative memories associated with unpleasant events such as painful extraction, local anesthesia injection, etc. are reformed into positive memories. This can be achieved by 4 methods; (1) visual reminders – by taking photographs (2) positive reinforcement through verbalization – appreciating the good behaviour (3) concrete examples to encode sensory details- obeying the commands and (4) sense of accomplishment-by setting a good example from previous behaviour.

Objective:

- To eliminate the negative memories of unpleasant dental visits and only remember the good times.
- To make the present visit to be a good memorable event

Ask-tell-ask:

It is the technique where the patient is enquired about the present visit and their feelings on performed procedure. The child is mainly explained (tell) about the procedure and again he/she to be asked (ask) whether the procedure is understood if not then again it is explained.

Objective:

- To ask the level of understanding related to procedure planned and explain them again the treatment planning methods and ask them again the understanding level after the explanation for better cooperation.

Positive reinforcement:

In this technique the dentist praises and appreciates the child for a specific good behaviour such as you are cooperating well for long time, your mouth is so big, etc.

Objective:

- To appreciate in order to get a better cooperation

Motivational speech:

It is the technique where patient is given with positive motivational interviewing regarding further treatments there by it can indirectly increase the self-confidence. This type of technique is useful in anger, adamant and behavioural resistance patients. This includes OARS (Open-ended questions, affirmations, reflective listening, summarizing).

Teaching back:

In this technique the children is demonstrated and explained about dental procedure eg: flossing technique, brushing techniques and again the dentist asks them to demonstrate what they have seen; it is commonly done in less literate people.

Recent advances in behavioural management technique:

- Tell-play-do (TPD)
- Audio visual distraction (AV)
- Mobile dental app
- Video game distraction
- Virtual reality based distraction
- Snoezelen Therapy in Autism children
- Animal-Assisted Therapy (AAT)
- Tell-play show – DOH
- Bubble breath play therapy (BBPT)
- Humanoid robotics

Tell-play-do (TPD):

It is the most commonly used technique which was modified by Vishwakarma AP as Tell-Play-Do in 2017. It is similar to Tell-Show-Do but in addition allowing the child to play with dental equipment's. As theory of

Bandura, states the child's anxiety towards dental instruments decreased and they feel comfortable and cooperative at the time of treatment. Only few studies have been reported so far, further research can be done to assess its effectiveness.

Audio-visual distraction (AV):

It is a technique where audio visualized aids are used in order to prevent anxiety and relaxing the child during the operative procedures. The main objective of this technique is make the children divert from the present satiation, motivate and attention towards the treatment. The main aim of distraction is to manage the anxiety and pain.

AV in Management of dental anxiety:

Kaur R et al 2015 compared the audio and audiovisual diversion to access anxiety in children during their first dental appointment and concluded that audiovisual relaxation decreases anxiety in nervous dental patients. Amal Al Khotaniet al and Barreiros D et al, 2018, studied the efficacy of watching videotaped cartoons through an eyeglass device as an AV distraction technique for children undergoing dental restoration and concluded that AV tends to be an efficient way to minimize distress in children during dental procedures and showed more favourable responses to local an esthesia injection.

Mobile dental app:

Patil VH et al, studied the utilization of mobile dental app for reducing fear and anxiety in children in the dental chair. By this technique, the fear towards different dental instruments and its use in children could be reduced and more cooperative behaviour could be achieved. Mobile dental application could be used as an adjunct technique however further research is needed.

Elicherla SR et al, 2019 studied the effectiveness of a mobile app (Little Lovely Dentist) and compared with tell-show-do (TSD) technique in managing anxious 7-11 years old children during their first dental visit and concluded that educating the child using a smartphone application prior to a dental procedure can significantly eliminate fear.

Videogame distraction:

The videogame as a distraction tool is based on the principles of cognitive- behavioural therapy and involves Neuro-feedback mechanism for children with fear disorders. It is interesting and commonly available media, which helps the children by actively participating during the dental procedure.

Aljafari A et al, 2017 studied the oral health education using videogames in high risk caries children by promoting healthy diet and good oral hygiene. Ega S et al, 2020 studied the influence of parent-provided distraction (PPD) and interactive distraction (ID) with a handheld video game (HVG) on the child's responses to local anaesthesia (LA) administration during dental treatment, which concluded that the PPD would showed least distressful option when compared to the ID with HVG in children during administering of LA. Garrocho-Rangel A et al, 2018 studied the effectiveness of a Video Eyeglasses/Earphones System (VEES) as a distracting tool among 5-8 years children in reducing fear in children during dental treatment under local anaesthesia which concluded that the VEES method was not more effective than traditional non-aversive behavioural techniques.

Virtual reality-based distraction:

In this technique a head mounted device includes display screen with tracking device that monitors the head movements and completely distracts the present situation.

Adel Zakhary et al., 2020 found the effect of audio-visual distraction on heart rate during dental treatment and concluded audio visual distraction can be used as an effective method for reducing anxiety during dental treatment.

Aromatherapy:

It is a method where essential oils are used to reduce the anxiety level in children where the parasympathetic nervous system is stimulated to modulate anxiety.

Lehrner et al. studied the use of orange odour among women and that higher level of calmness whereas Kritsidima et al. observed that lavender scent reduces anxiety in dental patients. James J in 2021 studied the efficacy of aromatherapy using orange essential oil with music distraction in children and found the positive response.

Tell-play-show DOH:

Radhakrishna et al, modified Tell-Show-Do to Tell-Show-Play-Do to reduce the child fear and anxiety towards dental procedures. Play-doh is a flour-based modelling compound used by children for arts and crafts projects.

Sreeraksha et al, 2019 studied and compared the TSD technique and found effective in reducing the pulse rate and improving behaviour.

Role play:

Role-play is largely used to acquire comprehensive expertise, including knowledge, skill, problem-solving ability and attitude. Khubchandani et al, 2022 studied undergraduates and compared role play with group discussion and found role play is highly effective in maintaining behaviour management skills among students.

Snoezelen Therapy in Autism children:

Snoezelen therapy was introduced by Ad Verheul and Jan Hulsege, which is a multisensory stimulation method that initiated in Netherlands during 1970s. Since then, Snoezelen is used as a therapy which promotes stress reduction, relaxation, sensory stimulation, and better concentration.

Autism Spectrum Disorder (ASD) is characterized by deficient in the areas of social communication and interaction, as well as restricted and repetitive behaviors, interests and activities.

Rute Teodoro et al, 2018 studied the Snoezelen Therapy in autism children where he reported positive effects in the child with ASD, and also showed significant improvements in the communication, interaction and, the good behaviour after the intervention.

Animal assisted therapy (AAT):

Animal assisted therapy is an approach that uses animals to solve human behavioural problems, as an adjunct to other therapies. The specially trained animal is made to interact with the patient for this therapy. The

commonly used animals are dogs, cats; rabbits, fish, and tortoise have also been tried as therapeutic animals in AAT.

BashyamNalini et al, 2022, studied the influence of pets in reducing anxiety among children and found that there was reduced anxiety in children during dental visit also 43.5% children preferred rabbits.

Bubble breath play therapy (BBPT):

It is a simple relaxation method where the child is advised to blow big bubbles and slowly relax this maintains and controls breathing, thereby provided better concentration and relaxation.

Ummeazher et al, 2020 compared and studied the BBPT and TSD technique and concluded that BBPT method can be considered as a child-friendly method and used as a better behaviour management technique.

Humanoid robotics:

As we are in the modern advancing technological world, nowadays robotics is widely used in the medical field. Humanoid robots are increasingly used in the health care systems to provide behavioural support to the children. As it is an emerging field only few studies have been done.

Yeldakasimoglu et al, 2023 conducted a RCT on humanoid robots among children behaviour and found NAO robot can be effectively used in the education and therapy and helps in behavioural management.

Conclusion:

Recent advancement in the behaviour management such as use of audiovisual aids, videogames, mobile app, robotics, ATT etc. has been studied to be used as an alternative to traditional method due to its exciting and innovative capacity to handle children with behavioural difficulties and to enable dentists to provide better treatment and administer successful care in a stress-free atmosphere.

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