

# Preparing a child with autism for dental prophylaxis using structured and instructional methods: a case report

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## Abstract

Due to the nature of the autistic syndrome, children with autism are potentially difficult patients in dental settings. A period is necessary to prepare them for dental procedures. Different methods have been developed to reduce their anxiety towards unfamiliar situations and teach new skills. These strategies can be beneficial in dentistry for children with autism to make the dental settings and procedure more acceptable to them. The aim of this study was to prepare an autistic child for dental prophylaxis using structured and instructional teaching methods together. A 7-year-old girl with autism, who was very resistant to, and reactionary in, the dental setting, was prepared for prophylaxis with the aid of these methods.

*Key words: Disability, autism, oral health*

## Introduction

Childhood autism is a pervasive developmental disorder of unknown origin and with probable multiple aetiologies. Autistic spectrum conditions are characterised by deficits in verbal and nonverbal language, social skills, cognitive functioning and an abnormal repertoire of behaviours. Children with autism may lack the ability to regulate their emotional responses or to express emotions verbally. Resistance to change, language processing problems and dislike of physical contact unless the person is very well known to them, are characteristics of these children (Powers, 1989; Simpson, 1992).

These characteristics of patients with autism may make dental procedures very difficult and sometimes even impossible. The dental office, and the procedures which will be carried out there, are frightening, ‘unknown things’ for them. Entering a foreign surrounding such as a dental office and confronting new situations will always certainly cause anxiety in autistic children (Backman and Pilebro, 1999a).

For this reason, a period of time and preparation is necessary to make the child familiar with the dental setting and dental procedures. Children with autism need to be familiar with all the steps they are going to experience during the dental procedure in order to feel confident, and

this needs to be taught. Structuring the learning environment and developing a plan with effective teaching methods should reduce the children’s anxiety and facilitate their ability to behave appropriately. Considering that children with autism react more favourably to structured situations than to unstructured ones, a comprehensive educational concept called TEACCH (Treatment and Education of Autistic and Related Communication Handicapped Children) has been developed (Trisram, 1996). Structure in time and space is one of the basic principles of this concept. Since the cognitive capacity of these children is impaired, structure is accomplished using picture schedules that schematically describe all aspects of life from daily routines to single events (Backman and Pilebro, 1999b). With TEACCH, children perform several tasks by looking at a schedule displayed in front of them that commonly uses a series of pictures (Trisram, 1996). The effectiveness of this method lies in the fact that children with autism are known to have better visual than verbal ability and many of them understand pictures better than spoken words (Backman and Pilebro, 1999b).

In addition, dental procedures include complex instructions for the child. To participate in a dental procedure successfully, the child must be able to respond to simple instructions correctly. For example, when instructed “open your mouth wide” the child should know what to do and

then respond appropriately. Resistance to instructions is a common characteristic of autistic children. Reinforcing the correct responses, structuring the learning environment, giving sufficient time for the child to understand that his response is correct before a new instruction will be given (discrete-trial method), and prompting, are effective instructional methods which increase the probability of adequate responses from the child (Anderson *et al.*, 1996).

The aim of the present study was to prepare an autistic child for dental prophylaxis using the structured and instructional methods together to decrease or eradicate her anxiety and to increase the probability of her giving the desired behavioural response.

## Case report

A 7-year-old girl with autism was brought to the dental clinic of Trakya University Training and Research Center for Mentally and Physically Handicapped Children, located in Edirne, Turkey, for dental examination. She was healthy except for her autism and was free of caries. The girl had been attending the Center for about three years, once a week and she had been brought once before, 18 months previously, to the same dental office. At that time, the visit was very difficult for her. Her parents expressed disappointment at the ordeal, and since she was caries-free, they said that they had not attempted to bring her back. They also explained that at her first dental visit (18 months ago), she had cried, shouted, and had shown many stereotypical and repetitive actions. Her family also explained that she was a very active child but that she resisted many activities.

Considering the child's former resistant attitude and anxiety in the dental setting, a book with pictures describing every step in the dental office was shown to her. The pictures were arranged according to the temporal sequence of every situation which the child would encounter. Before the first 'practice session', information about the child was gathered from the parents: her general medical history, communication means, stereotypical, repetitive actions and other peculiar reactions observed, and the parents' methods of rewarding her behaviour.

A common terminology was developed together with her parents to describe the pictures and both clinicians and the parents agreed to use these words both at home and in the clinic. Explanations concerning the pictures were short, simple, and precise. The parents were asked to prepare for the appointment by reading the book to her at home together, and to visit the dentist fortnightly. At this point, the most interesting observation made by her parents was that the child would begin to cry and to jump while looking at the dentist's picture in the book.

Apart from reading the book at home and regular visits to the dental office, the child's teacher used the same structured and instructional teaching techniques together in the child's routine for her educational programme. In the dental office the instruments which might have distracted

her attention were removed from the room. In all sessions, care was taken to use the simple requests as in the book.

At the clinic, instructions were administered in a discrete-trial format. This method consisted of four parts (Anderson *et al.*, 1996):

1. The instruction: This should be clear and short. We used the same instructions as the parents did while reading the book.
2. The child's response: Three responses were possible: correct, incorrect or none at all (no response). We allowed 3–5 seconds for the child to initiate her response.
3. Consequence: The dentist's response varied depending upon the child's response. When the child responded correctly, we reinforced her by applauding. This was the way her parents rewarded her good behaviour in the past. When the child responded incorrectly or did not respond, for example when she closed her mouth although we asked her to open, she was told this was wrong and the instruction was repeated. If the child was insisting on the wrong response, the session was finished for that day.
4. A short pause between the consequence and the next instruction (3–5 seconds). With this pause, we helped the child understand that one request had ended and a new one would start. We observed that starting new requests without a pause caused anxiety in this child. She demonstrated a need to know what she would encounter in the next step.

When the child did not respond to the instruction, she behaved as if she could not hear what we said. Repetition of the instruction had a negative effect on the child. At this point, it was observed that she wanted to leave the room. During the sessions, all correct responses were praised at once with verbal reinforcements like "good" or loud applause. The child's parents expressed that, in the beginning, she was not interested in the book. However, over time the pictures attracted her attention and subsequently she even wanted to turn the pages. They also stated that she began to examine every detail of the pictures very carefully.

One month after the book was given to the child, she entered the dental room without any force. We only used a physical cue by touching her shoulder lightly to guide her into the room. At this appointment, she refused to sit in the dental chair. As at the first appointment, instructional methods including discrete-trial method, prompting, and reinforcing were used to give instructions during the dental visit.

Four months later, she sat in the dental chair with physical guidance. At this appointment, the dentist was able to use the dental mirror, but it was not an adequate examination. Eight months later, she allowed us to brush her teeth using a prophylaxis brush in a slow-speed handpiece which we had first used on her hand at the previous appointments to show her how it worked and felt.

In all sessions, she wanted to touch and examine the

instruments beforehand. Whenever she heard the sound of handpieces, we observed that she was startled, but later she became calm.

## Discussion

Children with autism are often difficult patients for dentists to treat due to the nature of the condition. Usually, operative procedures require general anaesthesia. However, we observed that the required cooperation for preventive procedures can be achieved. The subject in this case study was initially distressed in the dental setting. We needed eight months to prepare her for prophylaxis. Despite our best efforts, we may never be able to provide dental treatment such as an extraction or a filling, or even a fissure sealant. However, at least now the dental office is not a nightmare any longer for either her or her family. We can now examine her teeth regularly and apply prophylaxis. We know that preventive procedures are so important for this child.

In this case study, instructional and structured methods were used together. We emphasised teaching the child to give the desired responses and endeavoured to reduce her anxiety and resistance. These interventions can be considered as an effective means of introducing dentistry to children with autism and can be combined with additional strategies such as modelling, allowing the child to observe calm children and role play.

Whatever method we select, responses may change from

one child to another. Not all children with autism are alike, as not all children are alike. For this reason, the dentist should cooperate with the child's parents and special teacher to decide what method would be most appropriate.

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