

Dental Health of Children with Autism: Controlling Anxiety Using Dental Care Training via ICT

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Introduction

Offering dental health to children with autism is challenging because it provides various visual/aural stimulations rarely experienced in any other setting. Their different perception of the surrounding world and difficulty accepting unknown social contexts can generate anxiety and fear, which if not adequately addressed, might trigger problem behaviors. This often forces dentists to use potentially dangerous chemical sedation in order to perform dental work on the child. Since digital tools are natural motivators for children, our study aims to expand previous research investigating the full potential of ICT to deliver the awareness and predictability of all dental clinic environment components (settings, tools, noise, procedures).

Methods

A multidisciplinary team applied co-design to selecting and creating digital resources and tools organized in a web application, MyDentist. A clinical protocol was defined and tested with a group of children with autism to implement desensitization and anxiety control in a real dental care setting using the kit of digital resources as assistive technology. Periodic visits (45 min) were scheduled for each child over a 3-month period in the same clinical room to ease familiarization. During dental care, structured training was delivered:

1) familiarization with medical procedures (control visits, dental hygiene, tooth decay treatment, dental sealant), and 2) educational activities (in the clinic) and homework using personalized digital resources.

Results

Results appear to confirm the positive role of supportive technology in anxiety control: (i) Most children showed a positive response, modeling their behavior and becoming increasingly collaborative (ii) Caregivers strongly committed to the protocol were satisfied with their active involvement. (iii) Children who respected the weekly schedule successfully completed the dental protocol in the scheduled time, and their caregivers felt the child-parent relationship was reinforced.

Discussion

This study confirms the importance of ICT tools for reducing anxiety during dental care sessions as well as for active parent involvement in the care of their children. Involving children in content creation during the clinical meeting helps them accept the dental care protocols. A few guidelines for creating accessible digital tools for anxiety reduction can be shared to benefit designers.