

Special Issue on

Oral health of children with special health care needs (SHCN)

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Review Article

Dental Management of Children with Special Health Care Needs: A Review

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- Access to dental care

Abstract

The management of children with special health care needs (SHCN) creates hesitation and anxiety among health professionals including dentists because it requires specialized knowledge acquired through special training, increased awareness, accommodative measures and resources. A literature search was conducted to identify updated and evidence-based recommendations and dental management options available for children with SHCN. These recommendations will assist dentists in determining the most appropriate dental management and also help other medical professionals in understanding the need to maintain optimal oral health for children with SHCN and the importance of liaison with dental professionals.

INTRODUCTION

The American Academy of Pediatric Dentistry (AAPD) [1] defines special health care needs as “any physical, developmental, mental, sensory, behavioral, cognitive, or emotional impairment or limiting condition that requires medical management, health care intervention, and/or use of specialized services or programs”. According to the AAPD the condition may be congenital, developmental, or acquired through disease, trauma, or an environmental cause and may impose limitations in performing daily self-maintenance activities or substantial limitations in a major life activity.

Several studies reported that individuals with SHCN may be at a higher risk for dental and oral diseases compared to their counterparts [2-4]. Oral and dental diseases, which are mainly due to effects of the conditions and also the lack of dental care can have a direct and distressing impact on the quality of life of SHCN and their families [5].

Patients with mental, developmental, or physical disabilities who do not have the ability to understand, assume responsibility for, or cooperate with preventive oral health practices are also at greater risk of oral and dental diseases. Oral health is considered an intimate part of general health and well-being [6].

In the United State of America (USA), the proportion of children with SHCN is estimated to be 12.5 million or 18% of the child population [7]. The number of individuals with SHCN is growing world-wide, which may be attributed to the improvements in medical care and strict antidiscrimination legislation in many countries. Therefore, dental professionals are required to be familiar with these regulations and ensure compliance. Regulations require dentists to provide physical access to clinics such as wheelchair ramps (Figure 1) and disabled-parking spaces.

Families with SHCN children spend more money for dental treatment than required for healthy children, which is considered an important barrier to access of oral care. The oral health needs of a large proportion of children with SHCN are unmet and therefore, in addition to training and increasing the awareness among dental and medical professionals, there should be more emphasis on establishing dental home and other comprehensive and coordinated services [8,9].

The aim of this paper was to search the literature for updated and evidence-based recommendations and dental management options available for children with SHCN, in order to assist dentists to choose the best dental management and also to help other medical professionals in understanding the need to maintain optimal oral health for children with SHCN and the importance of liaison with medical and dental professionals.

THE MANAGEMENT OF CHILDREN WITH SPECIAL HEALTH CARE NEEDS (SHCN)

A literature search conducted to identify the best available guidelines and recommendations for the management of children with SHCN revealed two systematic reviews. The first was published by the AAPD in 2012 [1] and the second by Polli et al., in 2016 [10]. In addition, the National Institute of Dental and Craniofacial Research [11] website provided valuable information on the oral health and dental management of an individual with SHCN. The management guidelines and recommendations are presented under the following headings:

Scheduling appointments

Important information to be collected by the dental team include: 1) child's name, age, and chief complaint; 2) nature of SHCN; 3) the name(s) of the child's medical care provider(s); 4) length of appointment; 5) the need for additional auxiliary staff in order to accommodate the patient. It is important to ensure that a patient's privacy is protected and no discrimination occurs on the basis of disability [1,11].

Dental home

The dental home is defined as the ongoing relationship between the dentist and the patient, inclusive of all aspects of oral health care delivered in a comprehensive, continuously accessible, coordinated, and family-centered way. Patients with SHCN who have a dental home are more likely to receive appropriate preventive and routine care. Moreover, the dental home provides an opportunity to implement individualized preventive oral health practices and reduces the risk of preventable dental/oral disease [1].

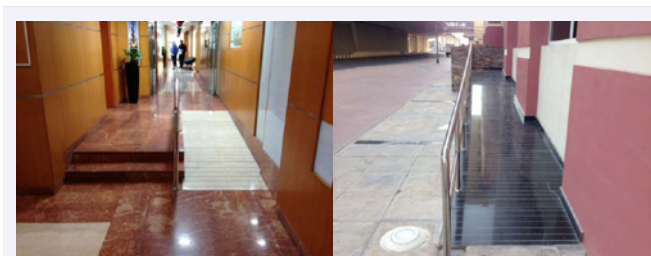


Figure 1 Photographs showing wheelchair ramps to the building and to the clinic at Mohammed Bin Rashid University of Medicine and Health Sciences.

Informed consent

All patients and their legal representatives must be able to provide informed consent prior to dental treatment. This should be documented in the dental record through a signed and witnessed form [1].

Patient assessment

An accurate, comprehensive, and up-to-date medical history is necessary for correct diagnosis and effective treatment planning. It is important to collect and document the following information: the chief complaint; history of presenting illness, which should be updated at each child visit; family and social histories and a thorough dental history. Next, comprehensive head, neck, and oral examinations should be completed followed by caries-risk assessment and accordingly an individualized preventive program, including a dental recall schedule, should be agreed with the child guardian and physician [1,11]. A summary of the oral findings and specific treatment recommendations should be documented and when appropriate, the patient's other care providers (e. g. physicians, nurses, social workers) should be informed of any significant findings.

Medical consultation

When appropriate, the physician should be consulted regarding medications, sedation, general anesthesia (GA), and special restrictions or preparations that may be required to ensure the safe delivery of oral health care. The dentist and staff always should be trained and prepared to manage a medical emergency [1,11].

Patient communication

An attempt should be made to communicate directly with the patient. Dental staff may need to communicate in a variety of non-traditional ways. A parent, family member, or caretaker may need to be present [1,11].

Behavior guidance

SHCN children may display resistant behaviors because of anxiety or a lack of understanding of dental care. With the parent or caregiver's assistance, most patients with SHCN can be managed in the dental office using simple behavior management techniques such as Tell, Show, Do (TSD) (Figure 2). Protective stabilization can be helpful in some patients as well the use of mouth props and blocks (Figure 3). However, in SHCN with

severe behavioral problems, sedation or general anesthesia may be the only option to successfully perform dental treatment. The dentist should consider the evaluation of behavior using one of the behavioral analysis rating scales such as Farnkl rating scale [12] (Table1).

Preventive strategies

The education of parents and caregivers is important for ensuring appropriate and regular supervision of oral hygiene. The dental team should develop an individualized oral hygiene program that suits each child. Brushing with a fluoride toothpaste twice daily should be emphasized. If the taste of fluoride toothpaste is intolerable, child's teeth may be brushed with a fluoride mouth rinse. A toothbrush can be modified to enable individuals with physical disabilities to brush their teeth (Figure 4). Electric toothbrushes and floss holders may also improve patient compliance. It is the responsibility of caregivers to provide appropriate oral care when the child is unable to do so [1,11].

A non-cariogenic diet and sugar free liquid medicine should be discussed with the caregiver and physician. If the SHCN child is on a diet rich in carbohydrates to increase weight gain, the dentist should provide strategies to diminish the caries risk by altering frequency of the intake and/or increasing preventive measures [13].

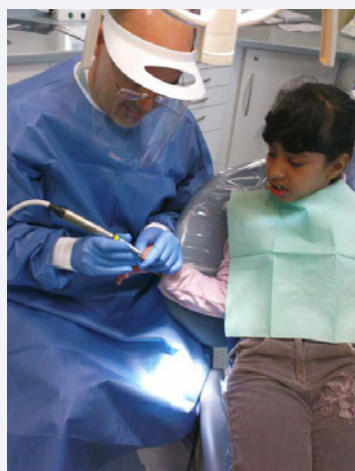


Figure 2 The use of "Tell, Show, Do" behavior management technique.

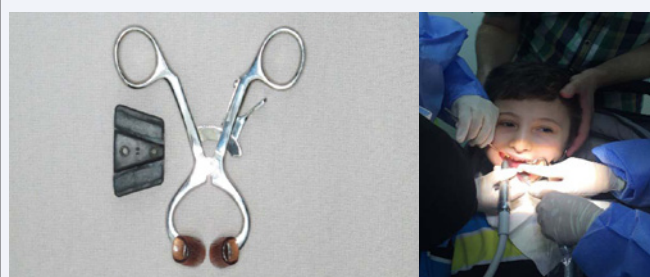


Figure 3 Photographs showing a mouth prop and block (courtesy of Mr. Evangelos Sotiropoulos, Senior Dental Technologist) and a special need autistic child being treated in his own chair using a mouth prop.

Table 1: Frankl rating scale.

Rating	Attitude/ Behavior	Definition
1	Definitely negative (--)	Refusal of treatment, crying forcefully, fearful or other extreme negativism
2	Negative (-)	Reluctant to accept treatment, uncooperative, some evidence of negative attitude but not pronounced
3	Positive (+)	Acceptance of treatment, willing to comply sometimes with reservation but usually follows the directions cooperatively
4	Definitely Positive (++)	Good rapport with dentist, laughing & enjoying dental procedures



Figure 4 Photographs of modified tooth brushes: one with large chunky handle and another with angular handle (courtesy of Mr. Evangelos Sotiropoulos, Senior Dental Technologist).

The use of sealants reduces the risk of caries in susceptible pits and fissures of primary and permanent teeth [14]. Topical fluorides such as fluoride varnish may be indicated when caries risk is increased. Interim therapeutic restoration (ITR), using materials such as glass ionomers that release fluoride, may be useful as both preventive and therapeutic approaches in patients with SHCN [15]. In cases of gingivitis and periodontal disease, chlorhexidine mouth rinse may be useful and for young children a toothbrush or gauze can be used to apply chlorhexidine [1,11].

Finally, preventive strategies for children with SHCN should address traumatic oral and dental injuries. This would include advice about the risk of trauma, especially in individuals with seizure disorders or motor skills/coordination deficits. Prevention of traumatic dental injuries also include the use of mouthguards and advice on what to do if traumatic dental and oral injuries occur. In addition, dental staff should be aware that children with SHCN are more likely to be victims of physical abuse, sexual abuse, and neglect when compared to children without disabilities [16].

Restorative care

Most children with SHCN are at high caries-risk and therefore, definitive treatment of primary teeth with preformed metal crowns (PMCs) is more favorable over time than intra-coronal restorations. A review of the literature comparing PMCs and Class II amalgams concluded that, for multi-surface restorations in primary teeth, PMCs are superior to amalgams [17]. The selection of more durable restorations is particularly important in patients receiving treatment under sedation or general anesthesia. PMCs are likely to last longer and possibly decrease the need for

sedation or general anesthesia with its increased costs and its inherent risks.

Barriers

Oral health staff should be familiar with community-based resources available for SHCN including support for language and cultural barriers, financial cover and help with transportation [1,11].

Referral

If a patient's needs are beyond the skills of the practitioner, he/she should make necessary referrals in order to ensure the overall health of the patient [1].

CONCLUSIONS

Oral health care and dental management of children with special health care needs require pretreatment planning and proper assessment, including scheduling appointments at appropriate times performing thorough medical, dental and social histories in consultation with all involved parties including physicians, social workers and caretakers, and appropriate patient communication. Informed consent and proper documentation are also essential. The entire dental team should be educated on how best to care for children with special needs. The dental team should know and use various treatment modifications and modalities for intraoral care such as the use of: pillows to support the neck, mouth props and toothbrush modifications. Patients, parents and care-givers should be educated about diet and preventive oral care so that optimal oral health can be achieved and maintained. Dental practitioners should use durable restorative materials, that likely to last longer and possibly reduce the need for costly and potentially risky sedation or general anesthesia.

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