

Opinion of the Polish Paediatric Dentistry Association (PTSD), Section of Paediatric Dentistry of the Polish Dental Association, Polish Branch of Alliance for a Cavity-Free Future (ACFF) and the National Consultant in Paediatric Dentistry concerning preventive dental recommendations for patients with disabilities

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SUMMARY

The problem of treatment of patients with special health needs resulting from the presence of deficits in intellectual, motor or sensory functions, also in dentistry, has not been comprehensively solved. According to the World Health Organization (WHO), about 15% of the world population has some form of disability. Patients with disabilities are considered to have greater dental treatment needs in comparison to healthy individuals. High incidence and intensity of dental caries as well as frequent gum diseases are observed in this environment. Often the situation is related, among other, to the presence of systemic diseases and the treatment used, limitations in shaping proper dental health behaviors, insufficient knowledge of parents about oral health or barriers in access to dental care.

The development of recommendations for parents/caregivers as well as medical staff is required to improve the health of these patients and quality of their life. The document contains information on the etiology and epidemiology of dental caries in patients with disabilities but also prophylactic recommendations for this population of patients and their parents/caregivers and dentists.

INTRODUCTION

Patients with reduced capacity due to mental, motor or sensory deficits are a population characterised by greater therapeutic needs compared to healthy individuals (1). Higher risk of morbidity in this group of patients requires preventive actions adjusted to their needs, also in the aspect of oral health problems.

The number of generally available, specialist dental offices for patients with disabilities is limited in Poland. These patients are often admitted to dental offices under the same conditions as healthy individuals (2). In some provinces, funds are allocated for the disabled as a part of public health care. It should be noted that the need for professional oral care in this patient population has been repeatedly emphasised worldwide.

According to Article 25 of the Convention on the Rights of Persons with Disabilities, which was adopted by the General Assembly of the United Nations on the 13th December 2006, "persons with disabilities have the right to the enjoyment of the highest attainable standard of health without discrimination on the basis of disability" (3). The Convention was signed by the Polish government on the 20th March 2007 and ratified by Poland on the 6th September 2012 (4).

Furthermore, the FDI General Assembly held in Sydney (Australia) on the 18th September 2003 adopted a position on the dental care for persons with disabilities, which was also adopted by the Polish Dental Association (5). It was agreed that "oral health of disabled people should be ensured through education on oral health and prevention of oral diseases", "cooperation with decision-makers and other interested parties should be a part of an overall strategy for the development and implementation of dental services for disabled persons".

However, there are no guidelines allowing for detailed specification of the principles for preventive and therapeutic management that would serve as a basis for health programmes to be implemented in this group of dental patients.

The aim of the paper is to present the recommendations for the preventive and therapeutic dental care in patients with disabilities as well as their parents/caregivers and dentists. The work was based on a national and worldwide literature review concerning dental caries and its prevention in patients with disabilities.

THE SCALE OF THE HEALTH PROBLEM

According to data from the World Health Organisation (WHO), more than 1 billion people (about 15% of world population) are affected by some form of disability (6, 7). Of those, 110-190 million (2.2-3.8%) of people over 15 years experience significant disabilities.

National data with comments was included in the report of the Central Statistical Office. It was noted that the information concerning persons with disabilities is derived from a number of statistical studies (8). However, due to the methodology used, the availability of data at a certain level of territorial division remains limited. So far, national census was the largest study to collect data regarding individuals affected by disability. The last National Population and Housing Census was conducted in 2011 and used a mixed method, i.e. administrative data sources, including registers and information systems, as well as data obtained directly from the population as part of a representative survey. Furthermore, it was stated that most data in the 2011 Polish Census, including information regarding disability, was derived from a representative survey performed in a 20% nationwide sample of randomly selected apartments, as well as on a voluntary basis. Hence, such an approach limits the availability of data at lower levels of territorial division (8). Such information can be treated as a basis for professional epidemiological studies.

Currently available data also indicates that the number of persons affected by disabilities is on the rise both in Poland and worldwide due to population ageing as well as an increased incidence of chronic diseases (6). Furthermore, significant development in medical sciences and technology as well as social facilities allows the survival of a significant percentage of people with disabilities (9), which should shape health policy to ensure proper quality of life for these individuals.

ORAL HEALTH OF PEOPLE WITH DISABILITIES

This patient population is characterised by higher caries rates.

In the years 2006-2007, a clinical evaluation of oral health in paediatric population with disabilities and a sociomedical study in their parents/caregivers were performed as a part of "Epidemiological assessment of

oral health in disabled and chronically ill children” commissioned by the Ministry of Health in four Polish provinces: Greater Poland, Łódź, Podlasie and Lublin (10-12). The studied population was composed of individuals with moderate to severe intellectual disability, nervous system diseases (infantile cerebral palsy and epilepsy) and impaired sensory efficiency (poor vision and blindness). An assessment of dental health in 289 patients with mixed dentition showed caries incidence of 75.1% in the general population of these children, including 72.8% in the group with intellectual impairment, 76.1% among patients with nervous system diseases and 76.1% in patients affected by vision impairment and blindness (11). Caries intensity index (dmft + DMFT) was 5.3 in this population, and 4.8, 5.6 and 5.4, respectively, in the individual groups of patients. Among the total group of 499 patients with permanent dentition, the incidence of caries was 68.3%, and the intensity of caries (DMFT) was 6.5. The following values were obtained for different groups of patients, which were created based on health status: 70.3% and 6.7 in individuals with intellectual disability, 71.3% and 6.9 in patients with cerebral palsy and epilepsy, as well as 57.6% and 4.9 in adolescents with sensory dysfunctions (11).

Studies conducted by different authors both in Poland and worldwide indicate higher numbers of decayed and missing teeth as well as worse oral hygiene compared to healthy population (9, 13-16). Furthermore, dental-facial defects and impaired oral functions are reported for a significant percentage of these patients (17). However, it should be emphasised that there are significant differences in the oral health status in this group of patients depending on the type of disability and the presence of systemic comorbidities, as shown in epidemiological research.

For comparison, the researches on oral health in disabled people attending educational and care facilities, published by other authors, may be presented. Roberts et al. assessed oral health in 157 paediatric patients aged between 3 and 19 years with mild to moderate intellectual disability, who attended special education institutions in Cape Town, South Africa (18). The authors observed that caries incidence rates were 67.5%, while periodontal diseases were reported in 69% of patients. Studies in Yemen in 401 children aged between 6 and 14 years, who presented with different forms of dysfunctions and attended special education institutions, showed DMFT of 2.37 ± 2.59 and dmft of 4.27 ± 3.12 in the group of children with intellectual disability (16). The reported index values were 0.96 ± 1.35 and 4.68 ± 3.30 for persons with physical disability, 1.91 ± 2.07 and 4.37 ± 3.11 in patients with hearing impairment, 1.44 ± 1.56 and 3.44 ± 3.1 in individuals affected by blindness, and 2.85 ± 1.98 and 4.28 ± 2.91 in those with multiple disabilities. Gace et al. assessed oral health in 599 children aged between 3 and 18 years, who were affected by various types of

disabilities and attended special education institutions in six Albanian cities (1). The authors reported caries incidence rates of 72% for deciduous teeth and 85.3% for permanent dentition, with the highest rates observed in permanent teeth of patients with blindness (91%) and the lowest rates reported for deciduous teeth in patients with Down syndrome (54.5%). The highest deciduous caries index was reported for patients with cerebral palsy (4.5 ± 4.2), followed by blind patients (4.4 ± 4.2), while the highest permanent teeth caries index was observed in patients with intellectual disability (5.8 ± 5.2) and cerebral palsy (5.6 ± 8.1).

A reference should be also made to data on the oral health of the participants of Special Olympics. In February 2010, Latin-American Special Olympics Games were held in San Juan, Puerto Rico, and 445 athletes took part in dental assessment (7). Hanke-Herrero et al. reported untreated caries in 51%, periodontal diseases in 48%, the need for urgent treatment in 20%, and a toothache in 13% of patients in a group of 367 subjects from Latin American countries. The following rates were reported for 78 participants from the Caribbean Sea countries: 71, 42, 28 and 13%, respectively (7).

CAUSES OF POOR ORAL HEALTH IN PATIENTS WITH DISABILITIES

The problem related to the causes of negligence in dental care and the resulting poor oral health condition in patients with disabilities is complex. On one hand, the often observed limited intellectual abilities causing the lack of understanding of the need for tooth brushing and/or impairment of manual functions prevent unassisted, daily preventive and hygienic procedures (1, 19, 20). On the other hand, parents/caregivers often focus on the treatment of systemic diseases underlying the disability or other associated symptoms, underestimating the value and necessity of preventive procedures and dental treatment. Additionally, it should be mentioned that in some cases, particularly among patients with multiple disabilities, the caregivers may not be able to perform tooth brushing in the child. Daily patient care requires considerable effort and many hours spent for feeding, care or rehabilitation. The fact of low parental awareness due to insufficient level of health education is also important (1). Poor dental prevention ensured by parents also often results from their education levels and socioeconomic status (1). Currently, no educational programmes are widely available for the carers of disabled persons or medical service providers in Poland.

It also happens that doctors of various specialties do not fully appreciate the relationship between oral health and chronic disease or disability and the resulting therapeutic complications, which is also observed in individuals without disability. Patients are referred or report themselves

to dental offices only when pain occurs as a result of tooth decay complications (11, 14). At this stage, the treatment requires a significant involvement of the medical personnel and caregivers, as well as more complex therapeutic procedures, including those performed under general anaesthesia (21). Additionally, the anxiety of the patient and/or parent/caregiver associated with oral procedures may delay dental visit, which affects the level of cooperation during treatment. Difficult access to dental care, including architectural, transportation, equipment, economic or information barriers, is also important (22). Difficulties in communication, unadjusted dental office, as well as complex and time-consuming treatment process may contribute to doctor's reluctance to treat patients in this population (14, 23-25).

RECOMMENDATIONS FOR DENTAL PREVENTION IN PATIENTS WITH DISABILITY

1. Introduction of systematic and thoroughly performed dental hygiene procedures with an active participation of parents/caregivers in the home setting. Attention should be paid to the extremely important role of dental personnel (doctor and dental hygienist) in the choice of appropriate toothbrush, toothpaste and, possibly, other necessary means that help maintain appropriate levels of oral hygiene.
2. Regular check-up dental visits to control oral health, including professional hygiene procedures performed in a dental office setting.
3. The use of fluorides both in toothpaste and in preparations applied by qualified personnel in a dental office setting.
4. Proper control of the disabled person's diet.

RECOMMENDATIONS FOR THE TREATMENT PLAN AND DENTAL TREATMENT IMPLEMENTATION IN PATIENTS WITH DISABILITY

1. Adaptation of the child to a dental office setting, including familiarisation with dental personnel with whom the child should be in constant contact.
2. Collection of thorough medical history from patient's parents/caregivers, including information regarding limitations in the functioning of the child, ways of communication or possible cooperation.
3. A thorough examination of the oral cavity.
4. Additional evaluations (including X-ray).
5. Collection of data derived from the general practitioner, family doctor or other specialists.
6. Preparation of detailed medical history of the patient, including information regarding previous dental treatment.

7. Invasive and therapeutic treatment, depending on patient's condition and the possibility of cooperation in either outpatient or inpatient setting under general anaesthesia.
8. Implementation of preventive measures based on the risk assessment of oral diseases in the patient, considering the recommendations for the implementation of both procedures performed in a home setting as well as professional treatments taking place in a dental office.
9. Repeated, regular assessment of patient's oral health at intervals specified by the doctor.
10. Consideration and implementation of comprehensive care of the general oral health condition by a coordinated team of experts, including:
 - prevention and treatment of malocclusions associated with disability,
 - therapy targeting perioral habits, such as thumb sucking, drooling, etc.

It should be emphasised that each patient with disability should be approached individually, considering their cognitive abilities, method of communication, the possibility of establishing cooperation in a dental office and the appropriate systemic treatment (26).

Patients affected by intellectual, physical or sensory disability should be assessed for the risk of oral conditions and, as a result, qualified into specified risk groups and provided with the indicated preventive measures already in early childhood.

The role of the dentist, as well as the hygienist, dental assistant and dental technician, in the team of specialists involved in the care of the disabled patient is emphasised. Therefore, it is necessary to appropriately prepare these professionals, as a part of both pre- and post-graduate education, to provide preventive and therapeutic services in this population under conditions that will allow to perform treatment procedures.

The first version of the presented document (MB-L, KG) was reviewed by a national consultant in paediatric dentistry and a team of experts, and then modified in accordance with their substantive comments and supplemented by DO-K. The final acceptance of the document was made by the entire group of authors. The document will be updated not later than 5 years after publication.

A summary of the current information on the recommendations for the prevention of tooth decay in disabled children was also published on the website of the Polish Branch of Alliance for a Cavity-Free Future (www.acff.pl) and the website of the SPPW KIK33 Project "Education, Promotion and Prevention in Regards to Oral Health Care Directed toward Small Children, Their Parents, Carers and Educators", which is co-funded by Switzerland as a part of Swiss cooperation programme with new EU member states as well as the funds from the Ministry of Health (www.zebymalegodziecka.pl).

CONFLICT OF INTEREST

None

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