



Special

Stomatology and dental services provided by APAC, Association in Favour of People with Cerebral Palsy

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ABSTRACT

Cerebral palsy (CP) is a non-progressive neurological condition that affects motor development and other functions such as cognition, language, and behaviour, and is one of the leading causes of childhood disability. In Mexico, the APAC, I.A.P. Association in Favour of People with Cerebral Palsy (APAC for its acronym in Spanish) has been providing comprehensive care to people with CP since the 1970s, including specialised dental services since 1984. These patients present a high prevalence of caries, periodontal diseases, malocclusions, sialorrhea and bruxism, aggravated by motor difficulties and dependence for oral hygiene. The stomatology area of APAC, led by DDS Héctor Caspeta, serves more than 1,200 people, focusing on prevention, treatment and rehabilitation adapted to their needs. Proper oral care improves overall health, quality of life, and social



inclusion of people with CP, and underscores the importance of training dentists in the management of patients with disabilities.

Keywords: cerebral palsy, dental treatment, oral care

INTRODUCTION

Cerebral Palsy (CP) is a neurological condition of heterogeneous and chronic non-progressive disorders, caused by interference, abnormalities or non-progressive brain lesions produced in an immature or developing brain. Its manifestations can vary widely, from mild difficulties in motor coordination or posture, which cause limitation of activity, to severe impairments that limit the independence and autonomy of those who have it¹. It represents one of the most significant challenges in the field of health, as it is one of the most prevalent paediatric conditions and the most frequent cause of childhood disability². Clinically, it is common to observe other concomitant alterations such as intellectual disability (12%-50%)^{3,4}, epilepsy (40%)⁵, sensory, visual or auditory deficits (45%)⁶, learning disorders (59%)⁷ and behavioural disorders⁸. From a social perspective, this condition acquires great importance due to the disability it causes in the affected person, the emotional impact it generates in their family environment and the considerable demand for both social and economic resources, among other factors⁹.

Studies based on the world population report an estimated prevalence of CP between 1.5 and 4 out of every 1000 newborn babies^{10,11}, and the prevalence of CP is higher in preterm and low birth weight infants¹². Barrón-Garza *et al.*¹³ pointed out that the incidence of CP in the Mexican population was 4.4 per 1000 children under 18 months, higher than that reported in developed countries.

The term CP was introduced in 1862 by William John Little, an English orthopaedic surgeon, after observing spastic rigidity and motor disturbances in children, which he associated with complications during childbirth. This theory prevailed for nearly a century, in spite of the fact that in 1897 the neurologist Sigmund Freud suggested that such difficulties were due to previous foetal abnormalities and not just the birth process¹⁴.

APAC, Association in Favour of People with Cerebral Palsy

APAC, I.A.P., Association in Favour of People with Cerebral Palsy (APAC for its acronym is Spanish) was formed in the 1970s in Mexico by a group of mothers with the goal of providing specialised care for people with cerebral palsy, as their children could not find adequate services. It emerged as an alternative to offer education, rehabilitation, and training. Over the years it has evolved to offer a wide range of services and programs, seeking to improve the quality of life of its beneficiaries. The Association has received several awards and recognitions throughout its history¹⁵. The awards and recognitions reflect APAC's commitment and quality in caring for people with Cerebral Palsy, as well as its social work and commitment to inclusion and diversity (Table 1).

Table 1. Awards, distinctions and categories

AWARD	CATEGORY
Eugenio Garza Sada 2024	In the Social Entrepreneurship category, for its positive impact on society and its commitment.
FLOR Awards 2024	Special mention in the LATAM category, for its work in diversity and inclusion.
OSC Analizada Distinction (Confío, A.C.) 2004, 2018, 2021	Recognition awarded by the organization <i>Confío, A.C.</i> , in several editions.
Anáhuac Awards for Social Responsibility 2022	Recognition for their work in social responsibility.
Award in Health for Exceptional Institution 2022	Awarded by the Carlos Slim Foundation.
1st Place in the Social Inclusion Category 2022	<i>Incluye Awards</i> from <i>Movimiento Congruencia</i> .
Validated Organization 2022, 2024	By the Charities Aid Foundation International.
Razón de Ser Awards 2021	Awarded by the <i>Merced</i> Foundation.
Best Place to Volunteer 2020	Recognition awarded by <i>CEMEFI</i> .
Merit Award 2018, 2019	By the World Cerebral Palsy Day.
National Quality Award 2018	Recognition for quality in management.
Inclusive Company Distinction 2015, 2019	Awarded by the Secretaría del Trabajo y Previsión Social (<i>STPS</i>) Mexico.
<i>Compartir</i> Awards 2013	Recognition for their social work.
Finalist in the <i>VIVA SCHMIDHEINY</i> Award 2019	International recognition.

Oral manifestations

People with CP often present a variety of oral manifestations¹⁶⁻²⁰ ranging from alterations in dental structure (8%-42%) to functional difficulties that affect chewing, swallowing and speech. Among the most common clinical conditions are caries, periodontal diseases, malocclusions (59%-92%) and disorders such as sialorrhea (10%-60%) and bruxism (15%-38.8%). The manifestations are not only exacerbated by motor disability, but also by the patients' dependence on others to perform oral hygiene activities, which increases the risk of oral diseases. Limited coordination and altered muscle tone make it difficult to brush correctly and remove biofilm, promoting the appearance of infections and the deterioration of teeth²¹.

Additionally, neuromuscular problems resulting from CP can cause dysfunctions in opening and closing the mouth, as well as in the coordination of movements necessary for feeding, affecting both oral health and quality of life. These challenges require a multidisciplinary approach and the implementation of specific prevention and treatment strategies by health professionals, who must be trained to address the particular needs of this population²².

Specialised dental care and oral health education are fundamental in promoting overall well-being, helping to avoid major complications and contributing to better physical and social development for people with CP^{21,22}.

Stomatology Area and Dental Services

The stomatology area was created in 1984 at APAC due to the oral health care needs of students attending the Association, who could not find a specialised place for their care. In 1990, BDS Héctor Caspeta Gómez joined the department, and to this day he is in charge of the area where care is provided to the beneficiaries of APAC, expanding its coverage to the external population and providing stomatology services to 1,200 beneficiaries. The area has been adapting to the constant changes and needs that have been required to improve and increase quality and compassionate care that impacts the prevention and rehabilitation of the oral health of people with disabilities who require specialised service (Figure 1). People with CP face a higher risk of developing various health complications. Therefore, they often need additional support and depend on third parties to achieve and maintain good general health. Oral health is no exception; maintaining a healthy mouth is a fundamental need throughout life²².

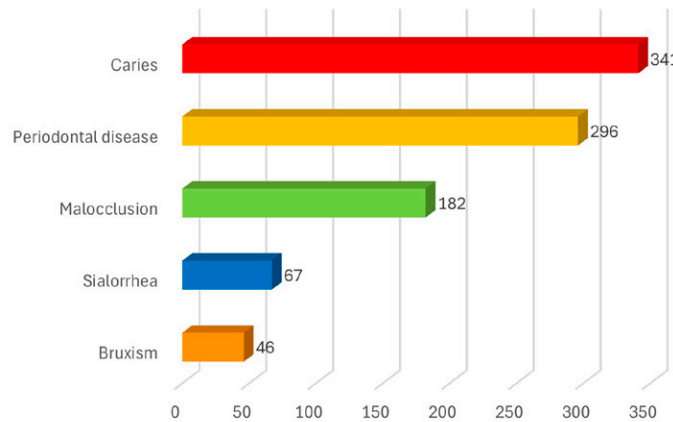


Figure 1. APAC's Care in the Stomatology and Dental Services Area.

The neurological alteration affects neuromuscular function both directly and indirectly, resulting in disorders in oral motor control, as well as abnormal movements in the pharyngeal and oesophageal phases of swallowing. These dysfunctions result in difficulties opening the mouth, coordination problems during sucking, chewing and swallowing, as well as disorders such as gastroesophageal reflux disease (GERD), constipation and other digestive transit disorders²³. The oral health problems experienced by people with CP are similar to those experienced by the general population, but they are evidently aggravated due to their systemic condition, which facilitates the establishment of these diseases.

During the 35 years of care provided to patients with CP in the stages of life: preschool, school, adolescent and adult, the most frequent diseases that have been detected are mainly:

caries and periodontal diseases. In 2023, over a period of 6 months, 350 patients with PC were assessed in the Stomatology and Dental Services Department, among whom the most frequent diseases were: caries (97.4%), periodontal disease (84.5%), malocclusion (52%), sialorrhea (19%) and bruxism (13.1%). Over the years we have identified that these diseases have not changed and their incidence has increased significantly (Graph 1).



Graph 1. Oral diseases detected in the Stomatology Area and Dental Services.

The main causes of oral health problems are largely due to poor oral hygiene, a high carbohydrate diet, continuous medication intake, and difficult dental management. Within the field of stomatology, it is essential to consider both the particular clinical characteristics of this condition and its repercussions on oral health. Oral health is an integral part of the rehabilitation of people with CP, where new care strategies have been implemented with the aim of preventing, treating and rehabilitating the oral condition by intervening at the three levels (preventive, curative and rehabilitative) in order to maintain the oral cavity of the patient with CP in good condition. Implementing procedures focused on preventing diseases or alterations in the oral cavity and comprehensive treatments to cure existing lesions, performing procedures that positively impact functionality, which would improve food intake, mood and self-esteem, contributing to the social inclusion of the patient.

As dentists, it is our responsibility to train and raise awareness among patients, parents, or guardians about the importance of maintaining good oral health to improve the quality of life of the patient and their family. The dental management of patients with PC should be the same as for any other patient; appointments should be short and as brief as possible to avoid physical fatigue, and a relaxed and trusting environment should be maintained. This care must consider not only the motor and cognitive impairments that can hinder autonomy in self-care, but also the social and economic challenges faced by those living with this condition. It is essential to promote education and support for families, as well as the training of health professionals involved in their treatment, to ensure a multidisciplinary approach that is sensitive to the particularities of each case.

Physical characteristics such as involuntary movements can make attention difficult and are an important point to consider in each patient; to facilitate such attention, techniques are used that include the dentist adapting to the patient. People with CP often have limitations in mobility, coordination, and fine motor skills, which can make every day oral hygiene tasks

difficult and increase susceptibility to various dental diseases. Therefore, dental care in this group demands adapted and individualised strategies that respond to their specific needs and guarantee access to appropriate preventive and rehabilitative treatments.

In the area of stomatology and dental services, efforts have been made to work with the best techniques to care for patients with CP, and it has been possible to reduce the time spent on dental care by providing comprehensive treatments, functionally rehabilitating the oral cavity, impacting the improvement of the general state of health.

The degree program does not have modules or subjects that teach us the stomatological approach towards people with CP or other disabilities; it is thanks to the Association that I have acquired knowledge of stomatological care for people with CP. As a trainer of dentists from various universities, I consider it important to create opportunities to raise awareness among Dentistry students about the importance of timely intervention in the oral health of patients with CP.

CONCLUSIONS

Comprehensive care for people with CP should prioritise addressing their oral health as a fundamental part of their overall well-being, through prevention strategies, adaptation of oral hygiene techniques, and access to specialised dental services. This way, we aim to contribute significantly to improving the quality of life, reducing complications, and promoting the social inclusion of people with CP. Collaboration among the family environment, support institutions, and health personnel is key to addressing challenges and promoting respect for the rights of those who require differentiated care.

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