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Review Article

Oral Health of Children and Young People with Attention Deficit Hyperactivity Disorder

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Abstract

Attention Deficit Hyperactivity Disorder (ADHD) develops in childhood and it is characterized by specific behavioral patterns. The treatment modalities and the propensity to inattention, impulsiveness, and hyperactivity can predispose these children to oral health problems. This review of the literature aims to expose the oral health issues that are involved with ADHD and to evidence the role of the Dental Team.

Keywords: *Attention Deficit Hyperactivity Disorder; Hyperactivity; Children; Oral Health*

Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is a heterogeneous disorder that can affect individuals throughout their life, and it is assumed to develop in childhood [1].

Nowadays, it is considered the most common neurocognitive and behavioral disorder in school aged children [2]. However, less than 40% of the children identified with ADHD in childhood meet the diagnostic criteria in adolescence [1]. Its prevalence in the pediatric population ranges from 4 to 10% worldwide, although its identification is highly dependent on the age and cultural characteristics of each population or country [1,3].

Although there is no scientifically supported etiology that can be associated to this disorder, evidence shows that genetic factors determine some predisposition to ADHD. In addition, premature born child, history of brain injury and exposure during pregnancy to stress, alcohol and/or smoking, can involve the development of this condition [4].

It is characterized by specific behavioral patterns such as inattention, impulsiveness, and hyperactivity, and can cause performance problems in the social and educational environment [5,6]. However, these symptoms may not occur simultaneously. For this reason, the evaluation by a specialist is always required. According to the American Psychological Association, there are 3 subtypes of this condition but the most common is the one that combines inattention, hyperactivity and impulsivity in its symptoms [4].

The treatment plan for these patients calls for community involvement and specific educational resources at school (adapted to each case). In addition, parents and children should be integrated in educational programs about ADHD, associated with behavioral therapy and drug treatment. The treatment of choice for the pediatric population are central nervous system stimulants. They can be long or

short-acting and both can be effective for smaller children and adolescents. Long-acting formulations are more convenient for the family and child, however, for smaller patients weighing less than 16 kg, short-acting forms are initially used, because there are no long-acting drugs in a sufficiently low dose. This have the disadvantage of requiring several takes throughout the day [4].

Although there are no statistically significant results regarding the studies that relate decreased salivary flow with ADHD approved medications, xerostomia is one of the side effects reported by patients. Other signs and symptoms in the oral cavity in these children are bruxism (reported by parents) and increased gingival volume [7,8].

In general, studies report that children with ADHD have greater difficulties in performing proper oral hygiene, which increases their risk to dental caries [9]. The main problem is the reduced brushing time, due to their hyperactivity, inattention and impulsivity. This is also associated with a higher prevalence of gingivitis, especially in adolescents, since younger children usually have parents help while their brushing their teeth [7]. For this reason, some authors found that the adolescent population has a higher prevalence of dental bacterial plaque, which can result in higher caries experience [7,8,10,11].

Excessive consumption of cariogenic foods is also associated with ADHD. Children and adolescents with this condition snack more often throughout the day, especially cariogenic foods and beverages [12]. This is another reason that places this population in the high risk group for dental caries [6,10,13].

Some studies have also shown a high prevalence of dental trauma in these children, although it was not statistically significant when compared to control groups [11,14]. A well-known feature of ADHD individuals is to be injured during sports and school playground, so it is suggested that there is a relationship between dental trauma and the presence of ADHD [15].

In the dental office, this population has some features that can challenge the dental team and affect the conduct to follow during the appointment. In general, children with ADHD have a higher rate of anxiety and behavioral problems during dental treatment [5,7,16]. These children are more likely to show anxiety with an exaggerated excitability behavior. Additionally, the educator himself may also be more anxious than the usual, which may further compromise a successful relationship with the dental team [1].

The dental professional should settle high frequency appointments whenever possible, minimizing the need for complex restorative treatments. Creating a well-established home-based oral health preventive program with the parents, may help to prevent caries and promote remineralization. Dental sealants and toothbrushing charts can also be very useful in preventing carious lesions in these children. Due to their high consumption of cariogenic food, it is important to encourage parents not to use this as behavior reward [5,17].

Conclusion

We understand that this is a population more likely to develop problems in the oral cavity, such as dental caries, gingivitis or dental trauma. Parents and educations are the greatest allies in the prevention attitudes, especially at earlier ages.

Considering the characteristics surrounding ADHD and its influence on oral health, it is urgent to develop and implement specific strategies among health professionals, like the inclusion of the Dentist or Pediatric Dentist in the intervention teams that supports families with neurodevelopmental disordered children, by adapting oral health preventive measures to each case, as soon as the disorder is identified.

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