



REVIEW ARTICLE

Is Poor Oral Health in Children the Tip of the Iceberg?

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ABSTRACT

Tooth decay is the most common chronic disease in children, with a prevalence five times higher than asthma and seven times more prevalent than hay fever. Untreated dental decay can cause pain, infection leading to hospital emergency department visits, impaired academic performance, problems with emotional development, and, in rare instances, death. The purpose of this paper is to review the current literature concerning the impact of dental caries on children, specifically related to school attendance, academic performance, and emotional health. Research highlights that students with poor oral health are more likely to miss school, whether due to tooth pain or the need for dental treatment. The frequent absences disrupt learning opportunities and place the child at a disadvantage compared to their peers, often resulting in diminished academic performance. Beyond academics, dental caries impairs children's emotional health by lowering self-esteem and hindering their ability to fully engage in daily activities. As these issues affect the upcoming generation, it is essential to prioritize their oral health. Further research is needed to broaden our understanding of the impact of poor oral health on children. Efforts to expand access to dental care must be intensified. Pediatric healthcare providers play a crucial role in fostering oral health awareness and ensuring children receive the care they need to thrive. Therefore, we urge pediatricians and other medical providers to increase their efforts to monitor and improve oral health in children.

INTRODUCTION

Dental caries (tooth decay) is the most common chronic disease in children, with a prevalence roughly five times higher than asthma and seven times more prevalent than hay fever.^{1,2} Untreated dental decay can cause pain, infection that leads to hospital emergency department visits and even hospitalization, impaired academic performance, problems with emotional development, and, in rare instances, death. The purpose of this paper is to review literature about the impact of dental caries on children, specifically related to school performance and emotional health, and to urge pediatricians and other medical providers to increase their efforts to improve oral health in children.

EXTENT OF THE ORAL HEALTH CRISIS

The unmet needs for health care are critical indicators of access problems. Among children, the unfulfilled requirements for effective healthcare have special significance. Failure to obtain treatment can affect their health status and functioning in both the near- and long-term. Dental care is the most prevalent unmet need.^{3,4} Florida leads the nation in many measures of poor access to dental care.⁵

IMPACT ON SCHOOL ATTENDANCE

Poor oral health has a significant impact on school attendance and academic performance, as demonstrated by multiple studies. Jackson, et al. found that children with poor oral health were nearly three times more likely to miss school due to dental pain, contributing to over 700,000 lost school hours in North Carolina alone.⁶ Absences due to pain had a stronger negative effect on academic performance than those for routine dental care. Agaku and colleagues reported that 21.8% of U.S. children aged 6–17 experienced dental problems in the past year, and unmet therapeutic dental needs were linked to increased absences, especially among children without insurance and those living in poverty.⁷ The study also highlighted higher unmet dental needs in Hispanic children and those not enrolled in school. Naavaal and Kelekar estimated that U.S. children missed 142 million school hours annually due to dental visits, with those from lower-income or less-educated families missing the most.⁸ Children from lower-income families and those with worse oral health were found to miss significantly more school. These results highlight the importance of improving access to dental care to help reduce school absences and support students' learning.

IMPACT ON ACADEMIC ACHIEVEMENT

Academic performance is profoundly influenced by oral health, with the impact often felt most strongly in underserved communities. Seirawan, Faust, and Mulligan found that students with toothaches in the past six months were nearly four times more likely to have a grade point average lower than a median of 2.8 compared to students without a toothache in the past six months.⁹ Students with toothaches in the past six months were found to be nearly six times more likely to miss school for dental reasons, while those lacking access to dental care were three times more likely. A study by Blumenshine et al. revealed that students with poor oral and general health were 2.3 times more likely to report poor academic performance, while those with only poor oral health were 1.4 times more likely to perform poorly.¹⁰ They noted that poor dental health alone significantly impacts school performance, even when general health is good. A 2019 meta-analysis showed consistent links between poor oral health and academic challenges, with higher decayed, missing, and filled teeth index scores that reduced the likelihood of earning higher grades.¹¹ It demonstrated that untreated caries and a lack of school-based sealant programs significantly impacted academic performance. These findings highlight the importance of implementing targeted oral health strategies to enhance students' educational outcomes.

IMPACT ON EMOTIONAL DEVELOPMENT

Oral health has a strong impact on children's behavior and emotional well-being, affecting their daily lives and interactions. Guarnizo-Herreño and Wehby surveyed children with varying levels of dental health to examine behavioral impacts.¹² They found that 19.25% of children frequently felt unhappy, 18.4% felt worthless or inferior, and 11.46% felt shy. These feelings were more common among those reporting poor or fair dental health compared to children with good or excellent dental health. Their analysis showed that better dental health alone was linked to improved school performance outcomes after adjusting for general health. Baseer et al. studied children experiencing oral health issues and found that these problems affected daily activities: 50% had difficulty drinking, 41.4% struggled to eat, 17.8% faced trouble speaking, and 16.9% missed school.¹³ Beyond physical symptoms, many experienced emotional effects, with 39.2% feeling disturbed and 11% avoiding smiling, illustrating how dental pain impacts both behavior and well-being. A 2020 study of young children with early childhood caries found widespread issues, including pain from hot and cold drinks (48%), sleep problems (41%), and difficulties playing (27%), before treatment.¹⁴ Following full-mouth rehabilitation, most children showed significant improvement in quality of life, though a small group still struggled with self-esteem and smiling. These findings highlight the importance of early and effective dental care to improve not only children's physical health but also their emotional well-being and social experiences.

CONCLUSION

Pediatricians should view the above findings with a focus on the recent decision to ban community water fluoridation in Florida. A recently published study predicted that removal of fluoride from community water supplies would result in a significant increase in dental caries over a ten-year period and approximately 20 billion dollars in associated increased health care costs.¹⁵ Dental caries significantly impact a child's well-being, influencing their school attendance, academic achievement, and emotional development. Research highlights that students with poor oral health are more likely to miss school, whether due to tooth pain or the need for dental treatment. These frequent absences disrupt learning opportunities and place them at a disadvantage compared to their peers. Combined with the challenges of managing dental pain, this often results in diminished academic performance. Dental caries also impair children's emotional health, lowering self-esteem and hindering their ability to fully engage in daily activities. As these issues affect the next generation, it is essential to prioritize their oral health.

Further research is needed to deepen our understanding of the full impact of poor oral health on children, and efforts to expand access to dental care must be intensified. Pediatricians and pediatric healthcare providers play a fundamental role in fostering oral health awareness and ensuring children receive the care they need to thrive. Pediatric clinicians can learn more about oral health and their role in managing and preventing dental disease in their patients. The free Smiles for Life online curriculum contains excellent

resources in self-paced individual modules that cover a wide range of oral health topics.¹⁶

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