

Evaluation of the Relationship Between Oral and Dental Health and Dental Anxiety Levels in Children: A Review

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Abstract

Regular dental visits facilitate early diagnosis and treatment of oral and dental diseases. It has been shown that patients who regularly visit the dentist have a much healthier oral environment compared to those who do not visit regularly and only go to the dentist when necessary. Dental anxiety is a challenging situation for both the patient and the dentist. The patient's negative attitude towards treatment leads to avoidance of dental procedures. This is a significant barrier to carrying out necessary treatments at the right time and in an ideal manner. Our literature review concluded that children experiencing dental anxiety have worse oral and dental health compared to those who do not. Implementing correct behavioral guidance techniques to prevent dental anxiety will also positively contribute to the patient's oral and dental health.

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Introduction

The Importance of Oral and Dental Health

Oral and dental health is known as one of the most crucial factors directly affecting an individual's overall health. Disorders in the oral region can restrict a person's life in every aspect, leading to a decline in quality of life (1). Problems affecting oral and dental health in children include dental caries, gum diseases, traumatic dental injuries, and oral pathologies arising from systemic diseases.

The primary factor in the deterioration of oral and dental health has been shown to be microbial dental plaque (2, 3). The attachment of microbial dental plaque, which has a complex content, to tooth surfaces and its failure to be effectively removed lead to the toxic products of the microorganisms in the plaque deteriorating oral health. Although microbial dental plaque is shown as the primary factor in the etiology of dental caries, it is mentioned that factors such as gender,

age, ethnic origin, habits, systemic diseases, socioeconomic and cultural situations can also affect oral health status (4).

Definition of Dental Anxiety

Many children describe a visit to the dentist as stressful. Meeting unfamiliar adults and authorities, hearing strange noises, having to lie down, and fearing pain can all be stress-inducing for a child. Therefore, behavioral management problems and fear reactions are common in pediatric dental clinics. Dental anxiety is defined as the concern about horrific events occurring during dental treatment and the associated loss of control (5). The prevalence of dental fear, dental anxiety, and behavioral management problems varies in different populations but is estimated to affect 9% of children and adolescents worldwide (6). In a study investigating the level of dental anxiety in Turkish children, it was found that 30% of children aged 3-6 and 11% of children aged 7-12 had dental anxiety (7).

Dental anxiety is expressed as a feeling of worry in the face of dental procedures, independent of any external stimulus (8). Dental anxiety, which can occur at any stage of life, usually first appears in early childhood and adolescence (9). This anxiety, starting in these periods, continues into adulthood, leading to avoidance of dental treatments and consequent deterioration in oral and dental health (10). It has been indicated in a study that individuals experiencing dental anxiety are less likely to attend dental check-ups, and are more likely to postpone or cancel appointments (11).

The Relationship Between Dental Anxiety Levels and Oral and Dental Health in Children

Patients with dental anxiety are unable to fully benefit from dental services due to their avoidance of treatment. Consequently, it is inevitable that anxious patients frequently experience dental problems. Their avoidance of dental treatments leads to poor oral hygiene. Knowing this creates feelings of shame, guilt, and inferiority complex in the person. An anxious individual with these feelings continues to avoid visiting the dentist, which in turn increases their dental anxiety, creating a vicious cycle (12). Additionally, there are studies indicating that dental anxiety affects the quality of life related to oral health (13).

Research in different populations shows that individuals with dental anxiety have difficulty going to the dentist (14). Regular dental visits facilitate early diagnosis and treatment of oral and dental diseases. It has been shown that patients who regularly visit the dentist have a much healthier oral environment compared to those who do not visit regularly and only go to the dentist when necessary (15).

Although there are few studies on the effects of dental anxiety on oral and dental health, the existing research indicates that individuals experiencing dental anxiety have worse oral and dental health conditions compared to those who do not experience such anxiety. It has been reported that these individuals have a higher number of decayed and missing teeth, and fewer restored teeth (11,16).

In one study, children with DMFS scores ≥ 2 showed a higher rate of dental anxiety compared to children with no cavities, and children with no previous dental treatment experience had 70% more dental fear (17). Another study indicated that children aged 5-12 with at least one active cavity experienced higher levels of dental anxiety compared to those without cavities (18).

Dental anxiety is seen as one of the reasons for the deterioration of oral and dental health in many societies. Peretz and Efrat have noted that dental fear hinders the ideal execution of dental treatments and the dentist's ability to work comfortably (19,20). Dental fear and anxiety can be both a cause and a consequence of poor oral health (21). Anxious patients avoid dental procedures, negatively impacting their oral health. Knowing this leads to feelings of shame and guilt. An anxious individual with these feelings continues to avoid visiting the dentist, which in turn increases their dental anxiety, creating a vicious cycle (12).

Kruger et al. in their study reported that dental anxiety could be a significant risk factor for dental caries and poor oral health (16). In our country, a study by Oba et al. on children aged 7-11 showed a positive correlation between dental anxiety levels and dmft+DMFT scores (22). A study by Schuller et al. indicated that individuals with high levels of dental anxiety had more decayed and missing teeth and fewer filled teeth (11). Münevveroğlu et al. reported a similar relationship between children's dmft+DMFT scores and dental anxiety levels, showing that children who fear dental procedures more have worse oral health (23). In a study by Bedi et al., it was reported that children with high dental anxiety levels were 62% more likely to lose at least one tooth due to decay compared to those without dental anxiety. Furthermore, the number of fissure sealants and filled teeth in children experiencing dental anxiety was significantly lower compared to those without anxiety. This was thought to be associated with the behavior of individuals with dental anxiety to cancel, postpone dental appointments, or avoid dental procedures until experiencing severe pain (24). Similarly, a study in our country found that dmft+DMFT values were higher in patients with high dental anxiety, establishing a statistically significant relationship (25). However, there are also studies in the literature that argue there is no relationship between an individual's level of dental anxiety and their oral health status (26,27). A study by Taani et al. in Jordan showed no statistically significant relationship between a child's level of dental anxiety and their oral health status (26). Similarly, a study in Singapore highlighted that a child's level of dental anxiety could not be an indicator of their oral health status (27).

According to the results obtained from literature studies, it can be considered that the oral and dental health of a child experiencing dental anxiety may not be

much worse than their peers in the early stages, but it can deteriorate over time due to their negative attitude towards dental procedures. Oral health will progressively worsen if necessary dental treatments are postponed or not performed due to anxiety.

It has been shown that a person with a high level of dental anxiety experiences a decline in the quality of life due to the negative impact on their oral and dental health. Therefore, especially in children, identifying and eliminating dental anxiety is of great importance in improving quality of life. Research indicates that if this condition is not prevented, it may be passed on to future generations.

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