

Impact of dental fear and anxiety on oral health-related quality of life (OHRQoL)

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Abstract

The aim of this review was to discuss the effect of dental fear and anxiety on oral health-related quality of life (OHRQoL) in children, based on recent literature. Oral health is an important part of general health and allows individuals to eat, speak, and interact socially without pain or discomfort. Quality of life includes physical, emotional, and social well-being. The concept of OHRQoL combines these two areas and is especially important in pediatric dentistry, as oral problems can strongly affect children's daily lives. Dental fear is a common emotional response to the dental environment, while dental anxiety refers to persistent worry about dental treatment. The prevalence of dental fear and anxiety in children varies widely across studies due to differences in age, culture, and assessment methods. Children who experience dental fear and anxiety often avoid visiting the dentist. As a result, oral health problems such as dental caries may remain untreated and worsen over time, leading to pain and infection. The article highlights a bidirectional relationship between dental fear and oral health. Poor oral health, especially tooth decay and toothache, can increase dental fear and anxiety. At the same time, dental anxiety causes children to avoid dental care, which further worsens oral health. This negative cycle affects several aspects of OHRQoL, including chewing ability, speech, appearance, emotional well-being, and social interaction. Consequently, children may experience reduced self-confidence and lower overall quality of life. Parental factors, particularly maternal dental anxiety, play an important role in the development of dental fear in children. Low socioeconomic status, lower educational level, irregular dental visits, and negative previous dental experiences are also associated with higher anxiety levels. The review emphasizes the importance of early detection of dental fear and anxiety. Positive dental experiences, regular dental visits, and appropriate behavioral guidance techniques can help reduce anxiety and improve cooperation. In conclusion, early intervention and effective management of dental fear and anxiety are essential to improve children's oral health and enhance their oral health-related quality of life.

Keywords: Dental fear, dental anxiety, oral health-related quality of life, OHRQoL, pediatric dentistry

1. Introduction

Oral health is defined as “the ability of the mouth and associated tissues and structures to make a positive contribution to physical, mental and social well-being and enjoyment of living conditions by enabling speaking, eating, socializing without pain, discomfort and shyness” (1). According to the World Health Organization, quality of life is a comprehensive concept that is affected by an individual's physical health, psychological state, level of independence, social relations, and relations with the environment (2). Quality of life has been defined with different approaches in every field of science. Oral health-related quality of life (OHRQoL) has been formed by integrating the definitions of oral health and quality of life. OHRQoL research in dentistry began in adult patient populations. However, since the quality of life of children is also negatively affected by various diseases and symptoms such as dental caries, periodontal diseases, malocclusion, and cleft lip and palate, the measurement of OHRQoL in children has been emphasized in recent years (3, 4). The most common problem that pediatric patients and their parents have with dentistry is the belief that the treatment by the dentist will be painful. This situation compromises the lifelong oral and dental health of the patients (5). Dental fear is a natural emotional reaction to one or more threatening factors in the dental environment. Dental anxiety is a state of worry that something terrible will happen about dental treatment (6). In recent literature, the reported prevalence of dental fear and anxiety in children has ranged from 7.49% to 93.8%, depending on differences in study designs, sample populations, scales used for measurement, and age of children (7-9). According to a study conducted on 275 children aged 7-11 years in Turkey, the incidence of dental anxiety was reported to be 14.5% (10). This chapter aims to provide an up-to-date assessment of the effects of dental fear and anxiety on oral health-related quality of life.

2. Clinical and research consequences

Poor oral health and hygiene, unstable general health, and low socioeconomic status have been found to be associated with high levels of dental anxiety in children. Children with tooth pain or caries are more likely to have dental anxiety. Patterns of dental visits and previous experiences also have a significant impact on the development of dental anxiety. Previous studies have reported the negative effects of dental anxiety on children's oral health (10-14). Failure to receive dental treatment due to dental fear and anxiety can lead to serious general health problems, including fever, septicemia, skin problems, joint and heart problems, and facial osteomyelitis. This can lead to insecurity and low self-esteem. It also negatively affects OHRQoL in different dimensions, such as phonetic disorders,

reduced chewing efficiency, affecting appearance and social interaction (15). In a study evaluating the effect of dental anxiety on OHRQoL in children aged 5-8 years, poorer oral health was found in children with dental anxiety. While the number of untreated decayed teeth was higher in anxious children, the number of teeth with pulpitis or pulp necrosis and the number of teeth extracted due to decay were lower. It has been suggested that this may be due to the fact that the parent/caregiver of the anxious child is much less likely to bring the child to the dentist or that the dentist may have decided not to extract the tooth due to possible poor cooperation (16). In another study conducted with a higher age group of 14-16-year-olds, adolescents with good oral health knowledge and low dental anxiety had better OHRQoL than those with poor oral health knowledge and high dental anxiety (17). Similarly, Akbay Oba et al. found that there was a relationship between DMFS-dfs indices and anxiety levels (10).

In a study evaluating the relationship between three different types of fear (caries treatment, visiting the dentist, and general dental fear) and OHRQoL, it was found that caries treatment-related fear, which is related to the treatment procedure, was statistically significantly associated with OHRQoL. However, it was found that the relationship between the fear of 'dental caries treatment' and OHRQoL was weaker in children with orthodontic experience than in those without experience. This may be because children with orthodontic experience are generally used to less invasive and painful treatments, which may prevent fear of dentists and increase their positive feelings about coping and controlling when more invasive treatments are required (18). In another study, dental fear was reported as a significant predictor of poor OHRQoL. This association was explained by the known risk factors associated with dental fear, such as irregular dental visits and high caries counts. Therefore, early detection and management of dental fear in children is important for delivering effective pediatric dental treatment to improve children's overall oral health and OHRQoL. However, it has been noted that the relationship between fear of dentists and OHRQoL is likely bidirectional, and poor OHRQoL may also cause or exacerbate fear of dentists (19). Luoto et al. stated that dental fear can negatively impact a child's OHRQoL, particularly their social and emotional well-being. A toothache may have a negative impact on children's experiences of dental treatment, leading to fear of dentists. This effect may be reduced by positive experiences in future treatments (20).

It has been reported that children are affected by parents with dental anxiety, especially the mother, in the development of dental anxiety (21-23). In a study, it was reported that the educational status of mothers and the relationship between mothers and their children were effective on dental anxiety (24). It has been reported that the oral and dental health of the children of mothers with high dental anxiety is worse, and that the dental anxiety of mothers is associated with socioeconomic level. In addition, a low education level

leads to inadequate dental visits, thus leading to advanced caries and pain, resulting in a vicious cycle in the mother and child in the form of increased dental anxiety (25). It has been reported that children's pain due to dental caries increases dental anxiety levels by causing fears such as the possibility of exacerbation of these pains. In other words, maternal dental anxiety may cause dental anxiety in combination with other factors (26). Increased parental dental anxiety may indirectly lead to the development of dental fear and worse OHRQoL in children who meet the dentist later (27).

Reducing the dental anxiety level of child patients with behavioral guidance techniques and gaining cooperation in these patients can create a permanent behavioral change, as it occurs as a result of the child's observations and experiences in the long term (28). Behavioral guidance techniques and increasing the frequency of positive dentist visits can create good behavioral changes (29, 30); however, if these psychological methods fail, the only way to perform dental treatments is through advanced techniques such as sedation and general anesthesia. In the literature, early childhood caries has been shown to significantly improve children's future behavior at reminder appointments 4 to 29 months after the completion of treatment under moderate sedation (29). In another study, patients treated with general anesthesia exhibited 3.9 times more positive behaviors at follow-up appointments in the first 6 months (31). Similarly, dental anxiety of patients aged 3-5 years treated with general anesthesia decreased significantly postoperatively, whereas the decrease in postoperative anxiety of patients treated with intravenous sedation was not statistically significant (32). Deep sedation has a positive effect on children's behaviors; however, advanced behavior guidance techniques, such as sedation, do not have an equal effect on each patient as basic techniques. It is thought that these different levels of influence that patients show compared to each other are also thought to be realized depending on the internal and environmental variables in the etiology.

It has been reported that dental anxiety decreases in patients who have been previously treated and have visited the dentist many times; however, in cases where the dental visit turns into a negative and painful experience, the child patient begins to exhibit highly negative emotions and behaviors towards the dental environment (33). For this reason, it is recommended to visit the dentist regularly from an early age before caries has formed. In pediatric patients, the primary goal is to ensure that children gradually develop a positive attitude toward dental procedures. Treating a pediatric patient with a lack of cooperation requires mastery of behavior guidance techniques and the ability to apply them in a tolerant and sensitive manner according to the child's individual needs (34). For these reasons, the etiology of dental anxiety should be determined individually for each patient, and efforts should be made to reduce dental fear and anxiety and ensure regular dental visits for children. It is predicted that with the decrease in

dental fear and anxiety, the negative impact on OHRQoL will also decrease.

3. Conclusion

Dental fear and anxiety negatively affect patients' OHRQoL. Dental examination and treatment planning should be individualized for each patient. Early identification of dental anxiety is crucial for better oral health and general well-being. For this purpose, children's cooperation and anxiety levels should be accurately determined, and an appropriate strategy should be followed. In this planning, it is important to raise awareness and inform parents and caregivers at an early stage. In the long term, the continuity of family, dentist, and child cooperation should be ensured, dental anxiety and fear should be prevented by behavioral management of children, and its negative impact on oral health-related quality of life should be reduced.

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