

Dental Anxiety in Children: A Review of the Contributing Factors

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ABSTRACT

Dental anxiety is a challenge faced by the dental professionals while treating young children. Many factors have been reported as contributing factors that influence and affect the level of dental anxiety in children. Being familiar with these factors would facilitate behaviour management in anxious children. This article reviews the contributing factors that have been investigated in the literature.

Keywords: Child behaviour, Dental fear, Dental phobia

INTRODUCTION

Dental anxiety in children present a challenge to the child, parents and the dental team. This, in turn, leads to difficulty in behaviour management, avoidance of dental care, and poor oral health outcomes [1]. The assessment of dental anxiety is necessary in order to overcome these problems and facilitate diagnosis and treatment while also guaranteeing a pleasant dental visit [2].

It has been reported that dental anxiety among children is influenced by many factors. As indicated by the relevant literature, various studies have been conducted to evaluate the impact of specific factors on dental anxiety [3-6].

This article presents a review of the investigated factors which affect dental anxiety and provides an insight into the possible explanations on the influence of these factors.

1) Age

The age of the child is considered one of the factors which has a substantial impact on dental anxiety among children [4]. There is almost total agreement in the literature that younger children tend to be more anxious in the dental office compared to older children [5-7].

This is believed that it results from fear of the unknown therefore abandonment among younger children. Child's cognitive ability develops with increasing age, thus resulting in more awareness and understanding [8]. As such, dental anxiety is more prevalent in those of a younger age, and declines as children become older.

In contrast, other reports have found no difference in the severity of dental anxiety between age groups [9-11].

Interestingly, certain other reports concluded that dental anxiety increases with age [3,12]. This could be explained by the possibility of other factors arising, such as having more previous painful dental experiences [4].

2) Gender

Evidence regarding differences in dental anxiety between boys and girls has been inconsistent. Most investigators reported higher levels of dental anxiety among girls [5-7,13].

On the contrary, certain other studies reported that there were no differences between both genders regarding dental anxiety [3,9,14,15]. In contrast, it has been reported that dental anxiety is more prevalent in boys [16].

These observations may be attributed to various factors, such as the cultural background of the population being studied, the structure

of the anxiety scales used, the real differences in anxiety levels between genders, the willingness to acknowledge anxiety feelings, or combinations of these factors [13,17].

3) Education and Socioeconomic Status

The education level of parents and the social class of the child's family have long been considered as the factors that affect the dental anxiety level of children [18].

Children from low socioeconomic families and low educational levels tend to experience more dental anxiety [7]. This could possibly be due to decreased dental awareness in low socioeconomic and educational level in families, thus it means that dental anxiety increases [19].

On the other hand, it has been reported that high education level is associated with severe dental anxiety [4]. One explanation offered is that children from families with a higher income can more easily access information on dental procedures [4].

Certain other studies reported a very weak association regarding these factors [20,21], or no association between the dental anxiety of children and the various educational levels [22,23].

4) Ethnicity and Culture

Ethnicity and cultural background may influence the level of dental anxiety. In Arab cultural background, it has been suggested that boys are expected to act like men and to be brave [13,24]. On the other hand, in African culture, endurance to stress usually manifest as self-control and self-repression [25]. However, in American or European cultures, children can more easily express their anxiety and feelings [3].

5) Number of Siblings

In literature, dental anxiety level has been found to be associated with increased number of siblings [1,18]. This is more especially in preschool children from larger families, with three or more siblings [18].

The explanation for this could be that children with more number of siblings might be exposed to information about their siblings' dental treatments or they could observe their siblings displaying anxious behaviour during dental treatments [26].

On the contrary, a study by Aminabadi NA et al., showed that a single child in a family had higher dental anxiety compared to children with siblings [27]. In regard to birth order, they found that in children with siblings, the first-born child had increased dental anxiety [27].

6) Previous General Anaesthesia

Dental treatment under General Anaesthesia (GA) is a significant emotional event in the dental history of children. This is considered a traumatic experience for children, due to the stressful procedure of anaesthesia induction, and the post operative consequences following treatment under GA [28].

The GA experience is deemed to contribute to dental anxiety, both in the short and long term. Most investigations reported that dental anxiety is positively associated with a previous GA experience; there exists more dental anxiety in children who have had previous GA dental treatment [29,30].

In contrast, a few reports concluded that there is no change in children's dental anxiety levels following treatment under GA [31,32]. This is possibly due to the fact that most of the children studied were already highly anxious [28,33].

7) Dental Caries

In literature, the association between dental caries and dental anxiety has been investigated [3,5,15]. This association could be true in both directions. Indeed, this means that high caries prevalence in a child may lead to increased anxiety towards visiting a dentist, and the presence of dental anxiety may lead to avoidance of dental check-ups, which would result in an increased prevalence of dental caries [29,30].

Most previous studies found that dental anxiety is related to caries prevalence and is considered a risk factor for dental caries [3,5,15,34].

However, a few studies reported that dental anxiety is not related to dental caries prevalence, and is rather influenced by other factors [35,36].

8) Parental/Maternal Anxiety

The literature has also reported a positive association between children's dental anxiety and parental, particularly maternal, anxiety [37-39].

Children who see dental anxiety in their parents, or learn about it through stressful information provided by parents, are more likely to develop a reflection and similar attitude, thus resulting in the development of dental anxiety [17].

However, there is a suggestion that this contribution could only affect the first dental visit, after which the child's own experience and the dentist's influence tend to have more significant weighting [40].

On the contrary, several studies concluded that there is no relationship between the dental anxiety of the child and that of the parents [33,41].

9) Dental Procedures

Specific dental procedures are associated with dental anxiety. Indeed, the child's dental anxiety may be influenced by the type of dental treatment proposed at a specific dental visit [21,42].

Patients who expect operative procedures and extractions exhibit higher anxiety [17]. It has also been reported that local anaesthesia injections increase the dental anxiety scores [20]. The lowest dental anxiety levels have been linked to oral prophylaxis [17].

10) Previous Dental and Medical Experiences and Frequency of Dental Visits

It has been reported that dental anxiety is related to previous dental experience. High levels of dental anxiety are expected among children on their first visit to the dentist [13,17]. Dental anxiety in children would then decrease with more dental visits, hence having experienced more dental treatments [42].

Additionally, this is possibly due to the fact that previous dental experience establishes a dentist-patient trust, and the children become older and mature with subsequent dental visits [17,42].

Children who have experienced specific dental treatment will likely be less anxious about that particular treatment [5], and infrequent dental visits and long intervals between visits have been found to be positively correlated with dental anxiety [42,43].

Conversely, Peretz B and Mann J, reported that dental anxiety in all children who have experienced dental procedures in the past is higher than in children who have not [44]. This could be because the children studied already knew that they would have an unpleasant dental session [5,15,20,40]. In contrast, many studies reported that prior dental experience is not associated with dental anxiety and has no influence on it [11,20,45]. More painful or invasive dental procedures will likely lead to negative experience of dental treatment and the development of dental anxiety [17,30].

In addition, children who had negative experiences associated with medical treatment and exposed to invasive medical procedures have shown to be more anxious about dental treatment [46].

11) Clinical Environment

The influence of the dental office environment on dental anxiety has also been investigated. Indeed, it has been reported that higher dental anxiety is associated with anxiety from the drilling sound, followed by long waits in the waiting room [20,47]. Additionally, the noise of other children undergoing dental procedures in the dental office can lead to anxiety in children waiting for their turn [47].

It has also been shown that dental anxiety results from the shape of the dental instruments, and the smell of the atmosphere, in addition to the association with the dentist's attire and gender [48-50].

12) Personal Traits, General Anxiety and Psychological Status

Dental anxiety is related to the personal traits of children. It has been reported that higher dental anxiety is positively associated with high trait-state and general anxiety [7,37,42].

A positive relationship has been reported between dental anxiety and psychological status that includes psychiatric disorders and depressive disorders, which lead to higher dental anxiety [7,37,42].

CONCLUSION

Dental anxiety is multifactorial, and is far more complex than can be explained by a single contributing factor. The differences presented in this article may be due to several parameters, such as methodological or cultural variables in the investigated populations. Further investigations in this area are recommended.

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