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Children's Oral Health Status and Their Level of Dental Fear

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Abstract

Children's dental fear can be effectively treated to prevent it from developing into adulthood. This cross-sectional study's objective was to appraise the children's dental fear and ascertain how it relates to dental caries. An analytical cross-sectional design was utilized in the investigation. A random sampling of 120 kids between the ages of 4 – 14 years comprising of 66 (55%) of them were boys and 54 (45%) were girls. The Children's Fear Survey Schedule–Dental Subscale (CFSS-DS) was applied to measure dental fear in children. Caries experience was measured as decayed, missed, and filled permanent and primary teeth (DMFT/dmft) according to the World Health Organization (WHO) criteria. Dental fear was present in 28.3% of girls ≥ 38, whereas (21.6%) of the boys had dental fear ≥ 38, Girls experienced significantly more dental fear than males ($P < 0.05$). In our investigation, average of CFSS-DS score was (37.20±7.12), the most frightening factor was "having the dentist give you an injection" (3.83±0.5), followed by "the dentist drilling" (3.57±0.57), "injection" (3.39±0.1) and "chocking" (3.58±0.51) and dentist (2.63±0.8). Girls experienced significantly more dental fear than boys ($P < 0.05$. The study demonstrated the dental anxiety prevalence in children between the ages of 4 -14 and showed a statistically significant relationship between children's age, gender, dental caries and the degree of dental anxiety.

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Introduction

Dental fear and anxiety are major problems in the management of pedodontic patients [1,2]. Dental fear is the common emotional response to one or more adverse influences that arise during or prior to a dental procedure [1].

Early dental home establishment would stop tooth decay and other oral health problems from developing. Children who are afraid of the dentist may not cooperate, and this may impact the health of dentition. The growth of dental fear into adulthood might be avoided if dental anxiety was recognized and effectively treated in infancy. Using the Arabic version of the Children's Fear Survey Schedule–Dental Subscale (CFSS-DS), a dentist might identify the many components of each child's dental fear and then adjust their behavior accordingly [3].

Assessing the degree of dental anxiety in kids earlier to beginning dental treatment might assist in lessen behavior difficulties related to it and improve the outcome of the dental appointment. Additionally, it is critical to determine what causes or exacerbates dental anxiety to take the required action to reduce it and use a suitable behavior management strategy [4].

Numerous studies [5,6] have recently been carried out globally to appraise the frequency of dental fear in different values. Assessment of children dental fear occurrence varied by population, ranging from 5.7% to 46.8% [5-7]. This variation in prevalence rates is caused by the range of calculation methods [8], the difficulty of the interactions between different causes influencing anxiety, in addition to the influence of the adjacent environmental and the diversity of the cultural factors among the populations that were questioned [9,10].

From 4% to 90% of children in various populations suffer from dental anxiety or fear are at high risk for it varies greatly throughout populations [11]. As an example, behavioral monitoring during outreach in Hong Kong's schools revealed that about 4% of kindergarten students were scared [12], while a Greek version of the CFSS-DS revealed that 24.80% of children between the ages of 4 and 12 were anxious [13]. Similarly, using the same questionnaire, the percentage of children in Italy between the ages of 4 and 7 who reported feeling nervous increased to 30.8% [14].

The technique, criteria, variety of cultures, healthcare systems, and participant age are some of the elements that affect this variation [15,16]. Although the reasons behind dental anxiety and fear are many and complex, they have been connected to several socioeconomic variables, parental anxiety, traumatic experiences in the past, environmental factors, and cultural beliefs [12,17,18].

It has been demonstrated that high dental anxiety has a detrimental influence on patients' oral health, which consequently affects their overall well-being [19]. Children who suffer from severe dental anxiety frequently exhibit uncooperative behavior during dental appointments, which affects treatment results and adds to the stress of dental staff. Later, this may lead to more invasive operations like treating severe cavities, extracting teeth, undergoing antibiotic-requiring surgery, or even being admitted to the hospital [20,21].

An investigation of Finnish youngsters who had regular dental care found that 15% of them delayed looking for treatment because of anxiety of having dental work done. Furthermore, compared to their peer group, children who have active cavities reveal a tendency to be more frightened, most likely because of unpleasant treatment experiences in the past [20,21].

One of the best frequently used instruments is the Children's Fear Survey Schedule–Dental Subscale (CFSS-DS) [13,14,23-27]. Numerous languages were translated into this survey, which showed strong test-retest reliability and internal consistency [13,14,23,24]. Prior research revealed that children with higher CFSS-DS scores were more likely to have a history of difficult experiences and to perform in a more anxious and disruptive manner during dental procedures [8,24,25].

There is debate on the connection between teeth decay and dental fear. Accordance with certain research, dental caries and dental fear were directly correlated; children who had a high caries score were perceived to be more afraid than those who had never had dental caries [6,26], while in only one study [20], the children's dental fear and their carious teeth did not correlate.

This cross-sectional study's objectives were to assess the apprehension children aged 4 to 14 years are of dental procedures and to associate their dental fears scores with the occurrence of dental caries.
• To explain how these children's levels of dental anxiety are distributed by gender.
• For each age group, compare the mean DMFT, deft with CFSS-DS <38 and CFSS-DS ≥38.

Materials and Methods

The total number of participating was (120) children, included 54 females and 66 males. Those are randomly chosen and their parents from the patients who attended teaching clinics in College of Dentistry, Dijlah University during the academic year 2024–2025 based on predetermined inclusion criteria. The criteria for including children were set to be 4- to 14 years-old, they were split into two age groups: 4–9 and 10–14 years old.

Each participant's parent was asked to sign a formal ethical consent form, On 17 September 2024, approval from Faculty of Dentistry's, Dijlah University Ethical Committee was obtained to execute this cross-sectional study. A letter describing the study's goals and obtaining parental agreement for participation of their children were included in the Arabic-language parents' questionnaire.

Questionnaires and indices

This study measured children's dental fear using the Arabic version of the CFSS-DS, it includes 15 questions about different dental treatment states (such "opening the mouth", "dentist drilling," Responses used a 5-point Likert-type scale, (1 = *not afraid at all* to 5 = *very afraid*) Between 15 and 75 is the range of achievable ratings; higher numbers indicate greater fear of dentists. The threshold score is 38 for the presence of dental fear. Children were categorized as dentally anxious if their CFSS-DS score was 38 or greater [2,13,23]. One dentist was tasked with examining every child in the trial and gathering data at the same clinic.

The CFSS-DS form was complete in by parents on behalf of their children.

The following were the study's inclusion criteria:

1) Children in good health who visited the dentist clinic with their parents
2) Children are recommended for procedures such as topical fluoride application, preventive pit and fissure sealant application, restorative fillings, and tooth extractions.
3) Children aged 4-14 years
4) The child could comprehend and respond to our inquiries.

Children having dental emergencies, including trauma, acute pulpitis, acute periapical periodontitis, periapical abscess, etc., or those with mental disabilities and clearly visible mental illnesses were not allowed to participate in the study [1-4].

Dental examination

Based on World Health Organization (WHO) criteria, the child's caries experience was evaluated using two indices: decayed, missed, and filled teeth (dmft) for primary teeth and DMFT for permanent teeth. [18] Using a community periodontal index (CPI) probe (Nordent, Elk Grove Village, IL, USA), a flat surface mouth mirror, sufficient light, and appropriate infection control procedures, and dental caries was measured.

A tooth considered to be sound if it was caries free, not treated, or had pits and fissures discoloration without cavitation.

A cavity with weakened enamel or softening of the walls or floor, a temporary restoration, or a filled tooth with decay were all signs of decayed teeth. Only teeth that were extracted because of caries were reported as missing [18].

Analysis of Statistics

The Statistical Package for Social Sciences (SPSS version 22.0, Inc., Chicago, IL, USA) was used for data collection and analysis. For every variable associated with dental fear, DMFT, and dmft, descriptive statistics, such as means and standard deviations, were computed.

DMFT, dmft scores depending on age and gender were evaluated using an independent T-test, and the chi-square test was performed to compare the children proportions whose fear levels vary by age and gender.

Results

120 children participated in the study; 66 (55%) of them were boys and 54 (45%) were girls. Table 1 shows the sample distribution by age and gender; for all age groups, more males than females were investigated.

Gender-specific dental fear levels are shown in Table 2. (28.3%) of girls had dental fear ≥ 38, whereas (21.6%) of the boys had dental fear ≥ 38, Girls experienced significantly more dental fear than males ($p < 0.05$).

Table 3 demonstrates the dental fear prevalence by age, 38.3% of children with severe fear of the dentist (fear score ≥38) was seen in age 4-9 years while in age 10-14 years was (29.1%), The younger groups had a considerably higher prevalence of dental caries than the older groups ($p < 0.01$).

In our investigation, the average CFSS-DS score was (37.20±7.12), the most feared variable among the children was "having the dentist give you an injection" (3.83±0.5), followed by "the dentist drilling" (3.57±0.57), "injection"

(3.39±0.1) and "chocking" (3.58±0.51) and dentist (2.63±0.8). For these questions, there was a substantial difference in the mean score between males and females.

Statistically significant difference in the mean dmft, DMFT scores among gender, girls have a higher mean score than boys ($p < 0.05$) is shown in Table 5.

A statistically significant difference in mean dmft, DMFT was noted between 4-9 years and 10-14 years' age group children. ($P < 0.05$) is shown in Table 6.

Discussion

Despite the use of Pain control measures during dental appointments and raising dentists' awareness about the importance of building patient trust dental fear stays a major problem for patients and dental staff [7,11,27]. The current study's mean CFSS-DS score was 37.20 ± 7.12, which is comparable to results in Singapore (30.6) [28], China (35.7) [7], and significantly higher than results in Turkey (28.7) [29], the USA (28.7) [30], Finland (22.1) [31], Sweden (23.1) [16], and the Netherlands (23.2) [32].

These discrepancies could result from cultural differences among countries, developmental stages, patient financial capacity, access to medical and dental care, parenting styles, and parental and child understanding of oral health. Children in low-income and developing countries typically seek care solely for critical treatments instead of preventative measures since these countries' healthcare systems are typically ineffective and poorly implemented.

Several problems face healthcare system, such as restricted accessibility to preventative dental treatment, a lack of funding, and an absence of extensive health education programs that educate the public of the value of preventive measures. Therefore, rather than focusing on routine preventative checkups, many children and adolescents choose to wait until they have an urgent dental condition, including pain or obvious tooth problems, before seeking treatment [24].

A vicious cycle of untreated oral health problems is created by the elevated frequency of dental caries and the fear of treatment, which frequently results in delayed or neglected preventative visits, worsening the population's overall oral health outcomes [24].

According to this study, girls' mean total CFSS-DS scores (38.24±6.47) were significantly higher than boys' (36.17). This result is consistent with studies showing that girls were more afraid of the dentist than boys [2,12,21]. Conversely, several studies discovered that dental fear was unaffected by gender [1,7,8,16,24,25,29]. However, other studies revealed that boys can be more afraid than girls [13].

The difference may be explained by the point that girls typically feel more fear because they are less tolerant of pain and have lower pain thresholds. Furthermore, cultural standards propose that boys, who are perceived as the stronger gender, should put up with greater suffering and might be less forthcoming about their dental anxiety.

This was supported by a new study conducted in a nation that speaks Arabic [22], which revealed that, in contrast to girls, Arabic boys are typically brought up to be strong and are discouraged from sharing their fears.

However, one of the factors that greatly affects a kid's likelihood of experiencing dental fear or anxiety is their age. According to most of the research, children's anxiety levels decline with age [12,33]. It is believed that young children's fear of the dentist stems from a fear of the unknown, but with age, their cognitive capacities improve and they are better able to process, cope with, and overcome possible phobias.

There are no age-related changes in the intensity of dental anxiety and terror, according to several other research [34,35]. Nonetheless, some research has found that fear and anxiety related to dentistry may increase with age [36]. The existence of possible oral health problems necessitating extensive dental treatments, alterations in teenagers' psychological states during major life transitions, or the lingering effects of unpleasant prior experiences could all account for these differences [2,24].

Additionally, how youngsters perceive and communicate dental fear is greatly influenced by cultural differences [3,13,24,25]. Children's level of fear can be impacted by numerous things, including communication techniques prior dental experiences, and family attitudes on oral health. Children could hide their fears in certain cultures due to social pressures or stigma, but in others, they might feel more at ease expressing their anxieties [3,12,14,19,21,25,37]. Given that children frequently imitate their parents' views on dental care, family impacts are particularly significant [34,38].

In the current study, children were most fearful of receiving an injection from a dentist (3.5±0.3), followed by "the dentist drilling" (3.42±0.57), "injection" and "chocking" (3.29±0.51). This is consistent with research from earlier studies that found that the three most anxious components of dental appointments were "choking," "injections," and "having someone put instruments in your mouth" [1,2,39]. These findings showed that despite their culture children had similar anxieties about dental treatments [33], indicating that intrusive procedures might be important causes of dental anxiety [24].

According to Kruger et al. [40], dental fear could increase the possibility of dental cavities and is probably a substantial predictor of dental caries. Like previous research, the current study found significant relationship between dental fear and DMFT-deft scores [31,40-42]. According to other research found no significant relationship between dental fear and DMFT-deft scores [1,43,44].

The strong correlations between DMFT and dental anxiety are in line with earlier research [17,31,45]. On the other hand, dental fear and DMFS-defs scores did not significantly correlate, according to certain research [2,12,31,36]. Anxious people's unfavorable attitudes and behaviors about dental health showed that their dental health may have worsened over time and their caries experience is much worse than that of their non-anxious peers [40]. Other factors, such as diet, absence of professional dental care, or wrong brushing techniques, may also have a strong relation to the high DMFT index

Dental anxiety is a severe condition that has a detrimental impact on both adults' and children's oral health. Finding the main reasons of fear early on is crucial to finding a solution. It is acknowledged that one significant contributing reason to the issue is that children who observe their parents exhibiting fear are likely to get that perspective and thus go through traumatic experiences at a young age [38].

Children's dental fear can be reduced by using epidemiologic concepts of clinical risk determination by means of tests for caries activity and primary extensive preventative treatment like fissure sealants, routine dental checkups, oral hygiene advices, and Parental education will decrease the need for injections at a very young age and prevent the child from suffering pain [28]. This can help establish a positive attitude toward dental care and gain the trust of patients who are anxious by making the entire first dental visit a pleasant and not a threat experience.

Pediatric dentists have difficult challenges while diagnosing, treating, and managing children who are afraid of the dentist. To manage each child differently depending on the causes of their fear and to employ the appropriate behavior adjustment techniques to provide a comfortable dental procedure and smooth experience, Before the child receives dental care, every attempt should be made to find out whether they have dental anxiety [36].

By evaluating the child's level of fear to maintain good oral health, a Children's dentist can assist the child in breaking the cycle of dental anxiety and in developing an extra positive attitude toward dental care.

To prevent dental fear from developing into adulthood, it is advised to continuously observe and manage a child's behavior. Additionally, to prevent dental problems from getting worse and resulting in worse oral health and its effects on dental anxiety, both caries risk assessment and preventative dental appointments are crucial.

The current study's conclusion that dental fear ratings decreased with age is consistent with LeBaron and Zeltzer's [20] theory that as kids become older, they could learn to control how they express their anxiety. According to a study by Kruger et al., dental fear itself is a valid indicator of dental caries and may possibly be a contributing factor to the development of dental caries [40].

In the current study, the DMFT scores and "general dental fear," however, differed significantly. These individuals are a perfect fit for the "vicious cycle" of fear theory, which holds that people with dental anxiety avoid receiving the necessary care, which exacerbates their problems and increases the probability that they will need additional dental appointments due to symptoms or emergencies, which are nearly always more stressful and unpleasant.

Pediatric dentists face a challenging problem, when it comes to identifying, controlling, and treating patients with dental anxiety.

To ensure that the dental procedure is both comfortable and uneventful, it will be feasible to treat each child differently based on the things that frighten him and to use the necessary behavior modification techniques.

It is important to employ extreme caution when using epidemiologic ideas like fluoride treatment, caries activity testing, and early use of prophylactic fissure sealants. For lowering children's level of dental anxiety, parental counseling, oral hygiene education, and repeated oral health exams were necessary to keep them from suffering discomfort and decrease the need for early-onset injections [28].

References

1. Taani, D.Q.; El Qaderi, S.S.; Abu Alhaija, E.S. Dental anxiety in children and its relationship to dental caries and gingival condition. Int. J. Dent. Hyg. 2005, 3, 83–87.
2. Beena, J.P. Dental subscale of children's fear survey schedule and dental caries prevalence. Eur. J. Dent. 2013, 7, 181–185.
3. El-Housseiny AA, Alamoudi NM, Farsi NM, El Derwi DA. Characteristics of dental fear among Arabic-speaking children: A descriptive study. BMC Oral Health 2014; 14:118-25.
4. Rantavuori K, Tolvanen M, Hausen H, Lahti S, Seppa L. Factors associated with different measures of dental fear among children at different ages. J Dent Child 2009; 76:13-9.
5. Nicolas E, Bessadet M, Collado V, Carrasco P, Rogerleroi V, Hennequin M. Factors affecting dental fear in French children aged 5-12 years. Int J Paediatr Dent 2010; 20:366-73.
6. Nakai Y, Hirakawa T, Milgrom P, Coolidge T, Heima M, Mori Y, *et al*. The Children's Fear Survey Schedule-Dental Subscale in Japan. Community Dent Oral Epidemiol 2005; 33:196-204.
7. Wogelius P, Poulsen S, Sorensen HT. Prevalence of dental anxiety and behavior management problems among six to eight years old Danish children. Acta Odontol Scand 2003; 61:178-83.
8. Armfield JM. How do we measure dental fear and what are we measuring anyway? Oral Health Prev Dent 2010; 8:107-15.
9. Folayan MO, Idehen EE, Ojo OO. The modulating effect of culture on the expression of dental anxiety in children: A literature review. Int J Paediatr Dent 2004; 14:241-5.
10. Paryab M, Hosseinbor M. Dental anxiety and behavioral problems: A study of prevalence and related factors among a group of Iranian children aged 6-12. J Indian Soc Pedod Prev Dent 2013; 31:82-6.
11. Sun, I.G.; Chu, C.H.; Lo, E.C.M.; Duangthip, D. Global prevalence of early childhood dental fear and anxiety: A systematic review and meta-analysis. J. Dent. 2024, 142, 104841.
12. Yon, M.J.Y.; Chen, K.J.; Gao, S.S.; Duangthip, D.; Lo, E.C.M.; Chu, C.H. Dental fear and anxiety of kindergarten children in Hong Kong: A cross-sectional study. Int. J. Environ. Res. Public Health 2020, 17, 2827.
13. Arapostathis, K.N.; Coolidge, T.; Emmanouil, D.; Kotsanos, N. Reliability and validity of the Greek version of the Children's Fear Survey Schedule-Dental Subscale. Int. J. Paediatr. Dent. 2008, 18, 374–379.
14. Paglia, L.; Gallus, S.; de Giorgio, S.; Cianetti, S.; Lupatelli, E.; Lombardo, G.; Montedori, A.; Eusebi, P.; Gatto, R.; Caruso, S. Reliability and validity of the Italian versions of the Children's Fear Survey Schedule—Dental Subscale and the Modified Child Dental Anxiety Scale. Eur. J. Paediatr. Dent. 2017, 18, 305–312.
15. Wogelius P, Poulsen S, Sorensen HT. Prevalence of dental anxiety and behavior management problems among six to eight years old Danish children. Acta Odontol Scand 2003; 61:178-83.
16. Klinberg G. Dental anxiety and behaviour management problems in paediatric dentistry—A review of background factors and diagnostics. Eur Arch Paediatr Dent 2008; 9(Suppl 1):11-5.
17. Uzel, ˙I.; Aydınel, B.; Ak, A.T. Evaluation of the risk factors of dental anxiety in children. J. Pediatr. Res. 2022, 9, 99–104.
18. Kvesi´c, A.J.; Hrelja, M.; Lovri´c, Ž.; Šimunovi´c, L.; Špiljak, B.; Supina, N.; Vrani´c, L.; Vrani´c, D.N. Possible risk factors for dental fear and anxiety in children who suffered traumatic dental injury. Dent. J. 2023, 11, 190.
19. Hegazi, F.; Alghamdi, N.; Alhajri, D.; Alabdulqader, L.; Alhammad, D.; Alshamrani, L.; Bedi, S.; Sharma, S. Association between dental fear and children's oral health-related quality of life. Int. J. Environ. Res. Public Health 2024, 21, 1195.
20. LeBaron S, Zeltzer L. Assessment of acute pain and anxiety in children and adolescents by self-reports, observer reports, and a behavior checklist. J Consult Clin Psychol. 1984; 52:729. doi: 10.1037//0022-006x.52.5.729.
21. Mohebbi, S.Z.; Razeghi, S.; Gholami, M.; Kharazifard, M.J.; Rahimian, S. Dental fear and its determinants in 7-11-year-old children in Tehran, Iran. Eur. Arch. Paediatr. Dent. 2019, 20, 393–401.
22. Milen, A.; Laaksonen, T.; Halonen, P. Coverage of public on health services for young children in Finland. Proc. Finnish Dent. Soc.1990, 86, 127–135.
23. Majstorovic, M.; Veerkamp, J.S.; Skrinjaric, I. Reliability and validity of measures used in assessing dental anxiety in 5- to 15-year-old Croatian children. Eur. J. Paediatr. Dent. 2003, 4, 197–202.
24. Bajri´c, E.; Kobašlija, S.; Huseinbegovi´c, A.; Zukanovi´c, A.; Markovi´c, N.; Selimovi´c-Dragaš, M.; Arslanagi´c, A.; Hasi´c-Brankovi´c, L.; Zuki´c, S. Predictors of Dental Fear and Anxiety in 9-12-year-old Children in Bosnia and Herzegovina. Acta Stomatol. Croat. 2022, 56, 246–256.
25. Cademartori, M.G.; Cara, G.; Pinto, G.D.S.; da Costa, V.P.P. Validity of the Brazilian version of the Dental Subscale of Children's Fear Survey Schedule. Int. J. Paediatr. Dent. 2019, 29, 736–747.
26. Olak J, Saag M, Honkala S, Nommela R, Runnel R, Honkala E, et al. Children's dental fear in relation to dental health and parental dental fear. Stomatologija 2013; 15:26-31.
27. Boka, V.; Arapostathis, K.; Karagiannis, V.; Kotsanos, N.; van Loveren, C.; Veerkamp, J. Dental fear and caries in 6–12-year-old children in Greece. Determination of dental fear cut-off points. Eur. J. Paediatr. Dent. 2017, 18, 45–50.
28. Chellappah NK, Vignehsa H, Milgrom P, Lo GL. Prevalence of dental anxiety and fear in children in Singapore. Community Dent Oral Epidemiol. 1990; 18:269–71. doi: 10.1111/j.1600-0528.1990.tb00075.x.
29. Akbay Oba A, Dülgergil CT, Sönmez IS. Prevalence of dental Anxiety in 7 to 11-year-old Children and its relationship to Dental caries. Med Princ Pract. 2009; 18:453–7. doi: 10.1159/000235894.
30. Cuthbert ML, Melamed BG. A screening device: Children at risk for dental fear and management problems. ASDC J Dent Child. 1982; 49:432–6.
31. Alvesalo I, Murtomaa H, Honkanen A, Karjalainen M, Tay KM. The Dental fear survey schedule: A study of Finnish children. Int Paediatr Dent. 1993; 3:193–8. doi: 10.1111/j.1365-263x.1993.tb00083.x.
32. Ten Berge M, Veerkamp JS, Hoogstraten J, Prins PJ. Childhood dental fear in the Netherlands: Prevalence and normative data. Community Dent Oral Epidemiol. 2002; 30:101–7. doi: 10.1034/j.1600-0528.2002.300203.x.
33. Alshoraim, M.A.; El-Housseiny, A.A.; Farsi, N.M.; Felemban, O.M.; Alamoudi, N.M.; Alandejani, A.A. Effects of child characteristics and dental history on dental fear: Cross-sectional study. BMC Oral Health 2018, 18, 33.
34. Petrovi´c, D.; Cicvari´c, O.; Šimunovi´c-Erpušina, M.; Ivan˘ci´c Joki´c, N.; Bakar˘ci´c, D.; Bu˘cevi´c Soj˘ci´c, P.; Juri´c, H. The Role of Family Factors in the Development of Dental Anxiety in Children. Medicina 2024, 60, 180.
35. Sathyaprasad, S.; Lalugol, S.S.; George, J. Prevalence of dental anxiety and associated factors among Indian children. Pesqui. Bras.Em Odontopediatria E Clínica Integr. 2018, 18, e4064.

36. Varmazyar, A.; Taram, S.; Razavi Rohani, Z. Dental Fear of Children and Its Relationship with Caries Experience: Dental Fear and Dental Caries. J. Dent. Sch. 2021, 39, 28–32.
37. Zhang, M.; Lan, J.; Zhang, T.; Sun,W.; Liu, P.;Wang, Z. Oral health and caries-gingivitis-associated factors of adolescents aged 12-15 in Shandong province, China: Cross-sectional Oral Health Survey. BMC Oral Health 2021, 21, 288.
38. Passos De Luca, M.; Massignan, C.; Bolan, M.; Butini Oliveira, L.; Aydinoz, S.; Dick, B.; De Luca Canto, G. Does the presence of parents in the dental operatory room influence children's behaviour, anxiety and fear during their dental treatment? A systematic review. Int. J. Paediatr. Dent. 2021, 31, 318–336.
39. Agarwal, S.; Chandak, M.; Reche, A.; Singh, P.V. The Prevalence of Dental Fear and Its Relationship to Dental Caries and Gingival Diseases Among School Children in Wardha. Cureus 2023, 15, e46360.
40. Kruger E, Thomson WM, Poulton R, Davies S, Brown RH, Silva PA. Dental caries and changes in dental anxiety in late adolescence. Community Dent Oral Epidemiol. 1998; 26:355–9. doi: 10.1111/j.1600-0528.1998.tb01973.x.
41. Bedi R, Sutcliffe P, Donnan P, Barrett N, McConnachie J. Dental caries experience and prevalence of children afraid of dental treatment. Community Dent Oral Epidemiol. 1992; 20:368–71. doi: 10.1111/j.1600-0528.1992.tb00701.x.
42. Rantavuori K, Lahti S, Hausen H, Seppa L, Karkkainen S. Dental fear and oral health and family characteristics of Finnish children. Acta Odontol Scand. 2004; 62:207–13. doi: 10.1080/00016350410001586.
43. Vignehsa H, Chellappah NK, Milgrom P, Going R, Teo CS. A clinical evaluation of high- and low-fear children in Singapore. ASDC J Dent Child. 1990; 57:224–8.
44. Wright FA, Lucas JO, McMurray NE. Dental anxiety in five-to-nine-year-old children. J Pedod. 1980; 4:99–115.
45. Yahyaoglu, O.; Baygin, O.; Yahyaoglu, G.; Tuzuner, T. Effect of Dentists' Appearance Related with Dental Fear and Caries Status in 6-12 Years Old Children. J. Clin. Pediatr. Dent. 2018, 42, 262–268.
46. Gadbury-Amyot CC; Williams KB. Dental hygiene fear: gender and age differences. J Contemp Dent Pract. 2000; 1:42–59.

Table 1. Distribution of sample for age and gender.

		NO.	%
Age	4-9 year	59	49.1%
	10-14 year	61	50.8%
Gender	Male	66	55%
	Female	54	54%

Table 2. The gender-based distribution of the children using the CFSS-DS Scale.

Fear level	Male	Female	Chi-square (*P*)
< 38	40(33.3%)	20(16.6%)	6.59 Critical value=3.84 df=1 p < 0.05
≥ 38	26(21.6%)	34(28.3%)	

Table 3. The distribution of the studied children according to the CFSS-DS Scale based on age.

Fear level	4-9 years	10-14years	Chi-square (*P*)
< 38	13(10.8%)	26(21.6%)	Chi-square=5.79 Critical value=3.84 df=1 p < 0.05
≥ 38	46(38.3%)	35(29.1%)	

Table 4. Comparison between male and female CFSS-DS mean scores.

Questions	Overall	Male	Female	P value
1- Dentist	2.63±0.8	2.37±0.8	2.88±0.9	0.048
2-doctors	1.88±0.25	1.92±0.4	1.85±0.1	0.31
3-injection	3.39±0.1	3.18±0.1	3.61±0.1	0.021
4-have somebody examine you	2.70±0.66	2.63±0.63	2.77±0.7	0.37
5-having to open your mouth	2.55±0.35	2.51±0.51	2.59±0.2	0.13
6-having a stranger touch you	1.94±0.15	1.92±0.1	1.96±0.2	0.203
7-having somebody look at you	1.73±0.52	1.87±0.8	1.59±0.2	0.051
8-the dentist drilling	3.57±0.57	3.33±0.3	3.81±0.8	0.023
9-the sight of dentist drilling	1.91±0.43	1.87±0.87	1.96±0.1	0.61
10-the noise of dentist drilling	1.92±0.34	1.89±0.39	1.96±0.29	0.072
11- having somebody put instrument in your mouth	2.38±0.53	2.39±0.3	2.37±0.7	0.98
12-chocking	3.58±0.51	3.25±0.7	3.91±0.3	0.041
13-having to go to the hospital	1.55±0.72	1.48±0.48	1.62±0.96	0.308
14-people in white uniform	1.86±0.8	1.96±0.9	1.77±0.7	0.15
15-having the dentist give you an injection	3.83±0.5	3.60±0.6	4.07±0.4	0.003
Total	37.20±7.12	36.17±7.78	38.24±6.47	0.062

Table 5. Comparison of mean DMFT and dmft according to gender.

Variable	Males	Females	T-value	P-value
DMFT	2.35	5.61	5.99	p < 0.05
dmft	3.20	6.61	6.94	p < 0.05

Table 6. Comparison of mean DMFT and dmft according to age.

variable	4-9 years	10-14 years	T-value	P-value
DMFT	1.49	3.57	4.39	p =0.03 p < 0.05
dmft	6.27	2.21	6.94	p < 0.005 p=0.005