



Original Research

Assessment of Prevalence of Dental Fear and its Relation with Caries in School Children

¹Lalit Patil, ²Manish Shivaji Jadhav, ²Krishnapriya Nene, ³Siddharth Swarup, ⁴Rohit Wadhwa,
⁵Saurabh Yadav

¹Assistant Professor, Department of Pediatric and Preventive Dentistry, Dr. D.Y. PatilVidyapeeth, Dr. D.Y. Patil Dental College and Hospital, Pimpri, Pune., ²Assistant Professor, Department of Prosthodontics, Dr. D.Y. PatilVidyapeeth, Dr. D.Y. Patil Dental College and Hospital, Pimpri, Pune, ³Associate Professor, Department of Prosthodontics, Dr. D.Y. PatilVidyapeeth, Dr. D.Y. Patil Dental College and Hospital, Pimpri, Pune, ⁴Senior Lecturer, Department of Conservative Dentistry and Endodontics, Desh Bhagat Dental College and Hospital, Mandi Gobindgarh, ⁵Reader, Department of Pediatric and Preventive Dentistry, Children Dental College, Azamghar (UP).

Abstract

Background: Fear is usually defined as an individual's response to an actual threatening event or a dangerous situation to protect one's life. Dental anxiety refers to patient's specific reaction toward stress associated with dental treatment in which the stimulus is unknown, vague or not present at the moment. Dental anxiety is a major complication for both patient and dentist. Dental fear has been related to personality, increased general fears, and previous painful dental experiences, parental dental fear, age, and gender. **Aim of the study:** To assess prevalence of dental fear and its relation with caries in school children. **Materials and methods:** The study was conducted in the Department of Pedodontics of the Dental institution. For the study, a total of 200 primary school children were randomly selected and were requested to participate in the study after confirmation from their parents and teachers. Among 200 children, 102 were boys and 98 were girls. The age of the selected children ranged between 6 to 12 years. Dental examination for children was done by two calibrated examiners to correlate dental caries and children's dental fear. **Results:** We observed that low caries was most common in primary teeth. However, highest

mean score was seen in moderate caries patients. The mean fear scores were similar in all type of caries. On comparison, it was found that these results are non-significant. Children with low caries are highest in permanent teeth. **Conclusion:** From the results of this present study this can be concluded that dental fear is significantly common in school children and is similar in children having primary and permanent teeth caries.

Keywords: DMFT, caries, dental fear

Corresponding Author: Dr. Lalit Patil. MDS, Assistant Professor, Department of Pediatric and Preventive Dentistry, Dr. D.Y. PatilVidyapeeth, Dr. D.Y. Patil Dental College and Hospital, Pimpri, Pune.

How to Cite: Patil L, Jadhav MS, Nene K, Swarup S, Wadhwa R, Yadav S. Assessment of Prevalence of Dental Fear and its Relation with Caries in School Children. IDA Lud J –/e Dent 2021;5(1):46-52.

INTRODUCTION

Fear is usually defined as an individual's response to an actual threatening event or a dangerous situation to protect one's life.¹ An existing specific stimulus like injection or drilling can provoke dental fear.² Dental anxiety refers to patient's specific reaction toward stress associated with dental treatment in which the stimulus is unknown, vague or not present at the moment. Regardless, in both these situations the patient's emotional reactions could be practically similar.³ Dental anxiety is a major complication for both patient and dentist. This apprehension leads patients to postpone or cancel dental visits or avoid treatment entirely. It is confirmed that anxious patients have more decayed, missing and less filled teeth in comparison to non-anxious patients. The etiology of dental fear in children is multifactorial. Dental fear has been related to personality, increased general fears, and previous painful dental experiences, parental dental fear, age, and gender.⁴ Girls and younger children are most often reported as more fearful than

boys and older children.⁵ Prevalence estimates of childhood dental fear vary considerably, from 3 to 43% in different populations.⁶ Hence, the present study was conducted to assess prevalence of dental fear and its relation with caries in school children.

MATERIALS AND METHODS

The study was conducted in the Department of Pedodontics of the Dental institution. For the study, a total of 200 primary school children were randomly selected and were requested to participate in the study after confirmation from their parents and teachers. Among 200 children, 102 were boys and 98 were girls. The age of the selected children ranged between 6 to 12 years. A written informed consent was signed from the parents of the pupils after explaining them verbally about the study. CFSS-DS was given to the children to fill. Dental examination for children was done by two calibrated examiners to correlate dental caries and children's dental fear. Indices used to assess the child's caries experience were decayed, missed, and filled

teeth (dmft) for primary teeth, and DMFT for permanent teeth based on World Health Organization (WHO) criteria.

The statistical analysis of the data was done using SPSS version 11.0 for windows. Chi-square and Student’s t-test were used for checking the significance of the data. A p-value of 0.05 and lesser was defined to be statistically significant.

RESULTS

Table 1 shows mean total fear scores based on caries experience in primary teeth. We observed that low caries was most common in primary teeth. However, highest mean score was seen in moderate caries patients. The mean fear scores were similar in all type of caries. On comparison, it was found that these results are non-significant (Fig 1).

DMFT level	Number of children	Mean fear scores	p-value
No	44	23.68	0.09
Low	62	26.21	
Moderate	59	28.29	
High	35	25.91	
Total	200	26.02	

No caries = 0; Low caries <2.7; Moderate caries ≥2.7 to ≤ 4.4; High caries ≥4.5

Table 1: Mean total fear scores based on caries experience in primary teeth

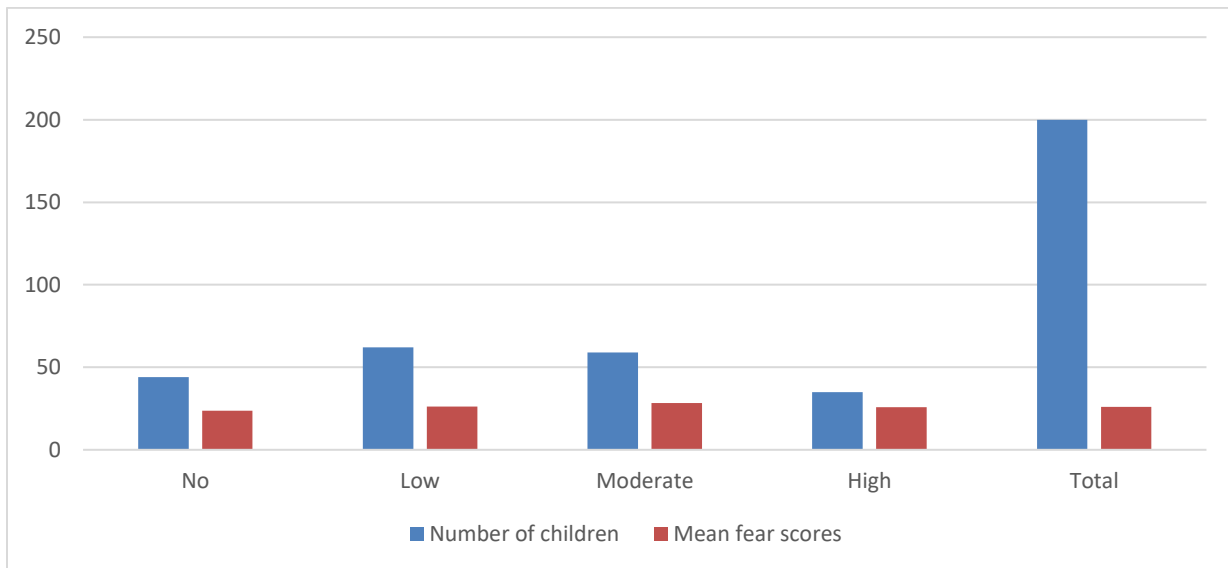


Fig 1: Mean total fear scores based on caries experience in primary teeth

DMFT level	Number of children	Mean fear scores	p-value
No	44	25.39	0.002
Low	62	27.26	
Moderate	59	28.25	
High	35	29.63	
Total	200	27.55	

Table 2: Mean total fear scores based on caries experience in permanent teeth

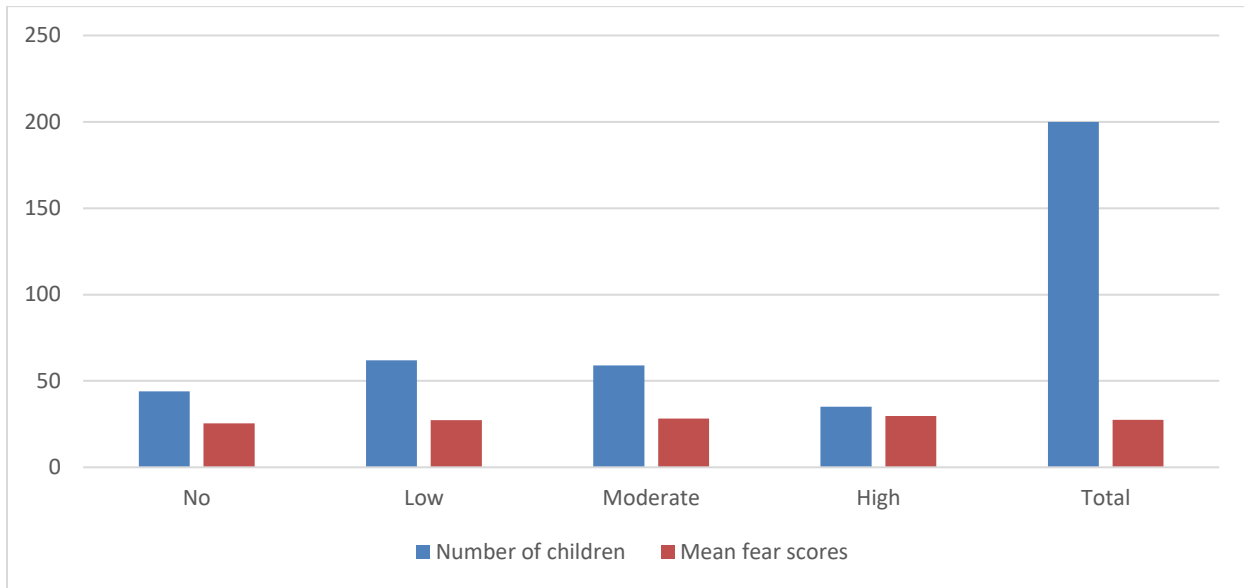


Fig 2: Mean total fear scores based on caries experience in permanent teeth

Table 2 shows mean total fear scores based on caries experience in permanent teeth. Children with low caries are highest in permanent teeth. However, highest mean fear score was found in cases with high DMFT. On comparing the results were found to be statistically significant (Fig 2).

DISCUSSION

In the present study, we observed that mean fear score for children with primary teeth caries was 26.02. Similarly, mean fear score for children with permanent teeth caries was 27.55. The results were compared with

studies from the literature. Kakkar M et al provided insight on dental fear amongst schoolchildren and evaluate the association between caries experience and fear of dental procedures. A sample size of 250 students (both sexes) of ages 10-14 years were enrolled in the study. Before dental examination, each participant was informed about the study and given the Children's Fear Survey Schedule - Dental Subscale (CFSS-DS) questionnaire. Children who scored greater than 38 were included in the 'with dental fear' group and those who scored less than 38 were assigned to the

'without dental fear' group. All oral check-ups were carried out on the school premises according to WHO criteria. There were 105 children (42%) who experienced dental fear. As CFSS-DS scores increased, scores on the Decayed, Missing and Filled Surfaces Index (DMFS) also increased. Scores were highest on "injections" followed by "dentist drill" and "feeling of choking". Children were significantly less anxious about items of dental treatment if they had experienced that particular form of treatment. Female participants were found to be more dentally anxious than the male participants. They concluded that the data revealed dental fear in 10-14 years old children and showed that dental fear scores decreased with increase in age and experience. P BJ et al assessed the level of fear of dental procedures among 6-12 year school children and correlate the prevalence of dental caries with their dental fears scores. The study sample of 444 school children, comprising of 224 girls and 220 boys in the age group of 6-12 years old from a private English medium school were selected. Each student was asked to independently complete a Children's Fear Survey Schedule – Dental Subscale (CFSS-DS) questionnaire. Children having a score of ≥ 38 were included in the "dental fear" group while those scoring <38 were placed in the "without dental fear" group. All dental examinations were performed in the classroom. Fear scores were highest for "Injections," "Choking," and "Dentist drilling". The overall mean score of CFSS-DS in our study was 37.0 ± 8.89 , mean score of DMFT and DMFS were 0.58 ± 0.74 and 0.73 ± 1.09 , respectively. Mean score of deft and defs were 4.40 ± 2.34 and 7.28 ± 5.49 , respectively. They concluded that the prevalence of dental fear in 6-12 year old children and there was no statistically significant co-relation between the level of

dental fear and dental caries in these children.^{7,8}

Yon MJY et al investigated the fear level of kindergarten children in the general population during dental outreach in a familiar kindergarten setting, and to explore the factors associated with the dental fear of kindergarten children. Method: Consecutive sampling method was used to select kindergarten children aged 3 to 5 to participate in a questionnaire survey and an outreach service. A behavioral observation type of instrument for dental fear and anxiety assessment—Frankl Behaviour Rating Scale (FBRS)—was chosen to investigate the fear level of the children. Bivariate analyses between various factors and children's dental fear and anxiety were carried out using Chi-square test. Results: A total of 498 children participated in this study. Almost half (46%) of the children have had caries experience, and the mean dmft score was 2.1 ± 3.4 . The prevalence of dental caries was 32%, 43%, and 64% in the 3-, 4- and 5-year-olds, respectively. Only 4% of the children scored negatively for dental fear and anxiety (95% CI 2.3%–5.7%). Children at three years of age displayed more dental fear and anxiety than children of older ages, but the difference in dental fear and anxiety among the genders and caries status was not statistically significant. Most of the children (92%) brushed daily, but only 20% of them used toothpaste. Most (85%) of them had never visited the dentist, and over 70% of them were mainly taken care by their parents. High levels of positive and cooperative behavior and low levels of fear were found in this population. No statistical significance was found between the child's dental fear and any factors except age. Conclusion: Children generally displayed low fear or

anxiety levels in a dental outreach consisting of a non-invasive oral examination and preventive treatment in a familiar kindergarten setting. Conducting regular outreach dental services to kindergartens by providing oral examination and simple remineralisation therapies could be a promising strategy to not only control childhood caries, but also manage and reduce dental fear and encourage long term dental attendance in line with the medical model. Dahlander A et al investigated changes in dental fear and anxiety (DFA) and verify factors associated with DFA in children. A longitudinal cohort study that included 160 children aged 7 years was carried out. A questionnaire was completed by parents at two time points and evaluated the immigrant background, maternal education, whether the child had ever had toothache, and whether the parents had dental fear. The oral clinical examination evaluated decayed, extracted, and filled primary teeth (deft). The children's fear survey schedule dental subscale (CFSS-DS) was used to assess the dental fear of the children. Multilevel mixed-effects logistic regressions analyses were used. The CFSS-DS found that 7% of the children had dental fear at age 7 and mean CFSS-DS was 22.9. At 9 years of age, 8% reported dental fear and the mean increased to 25.4. Parental dental fear, experience of toothache, and report of painful dental treatment and caries development between 7 and 9 years of age were factors that were significantly related to development of DFA. There was a change in DFA between 7 and 9 years of age. Dental fear and anxiety is a dynamic process in growing individuals and is significantly related to painful symptoms and experiences of dental care as well as parental dental fear.

9, 10

CONCLUSION

From the results of this present study this can be concluded that dental fear is significantly common in school children and is similar in children having primary and permanent teeth caries.

REFERENCES

1. Arslan S, Erta E, Ülker M. *The relationship between dental fear and sociodemographic variables. Erciyes Med J.* 2011;33:295–300.
2. Jaakkola S, Rautava P, Alanen P, Aromaa M, Pienihäkkinen K, Riihää H, et al. *Dental fear: One single clinical question for measurement. Open Dent J.* 2009;3:161–6.
3. Humphris GM, Dyer TA, Robinson PG. *The modified dental anxiety scale: UK general public population norms in 2008 with further psychometrics and effects of age. BMC Oral Health.* 2009;9:20.
4. Klaassen MA, Veerkamp JSJ, Aartman IHA, Hoogstraten J. *Stressful situations for toddlers: Indications for dental anxiety? J Dent Child.* 2002;11:306–9.
5. Baier K, Milgrom P, Russell S, Mancl L, Yoshida T. *Children's fear and behavior in private pediatric dentistry practices. Pediatr Dent.* 2004;26:316–21.
6. 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.
7. Kakkar M, Wahi A, Thakkar R, Vohra I, Shukla AK. *Prevalence of dental anxiety in 10-14 years old children and its implications. J Dent Anesth Pain Med.* 2016;16(3):199-202. doi:10.17245/jdapm.2016.16.3.199
8. P BJ. *Dental subscale of children's fear survey schedule and dental caries*

- prevalence. *Eur J Dent.* 2013;7(2):181-185. doi:10.4103/1305-7456.110166
9. Yon MJY, Chen KJ, Gao SS, Duangthip D, Lo ECM, Chu CH. Dental Fear and Anxiety of Kindergarten Children in Hong Kong: A Cross-Sectional Study. *Int J Environ Res Public Health.* 2020;17(8):2827. Published 2020 Apr 20. doi:10.3390/ijerph17082827
10. Dahlander A, Soares F, Grindeffjord M, Dahllöf G. Factors Associated with Dental Fear and Anxiety in Children Aged 7 to 9 Years. *Dent J (Basel).* 2019;7(3):68. Published 2019 Jul 1. doi:10.3390/dj7030068.

Conflict of Interest: None

Source of Support: Nil



This work is licensed under a Creative Commons Attribution 4.0 International License