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Assessment of prevalence of dental fear and its relation with caries in school children

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ABSTRACT:

Background: The establishment of a dental home early in life would prevent the development of dental caries and oral health problems. Dental fear may lead to lack of child cooperation, and therefore poor oral health. If dental fear was identified and managed successfully during childhood, this could prevent the progression of dental fear into adulthood. **Aim:** To assess the 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 100 primary school children were randomly selected and were requested to participate in the study after confirmation from their parents and teachers. Among 100 children, 66 were boys and 44 were girls. The age of the selected children ranged between 6 to 12 years. **Results:** We observed that high 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. In contrast to primary teeth, children with no caries are highest in permanent teeth. However, highest mean fear score was found under the ground. **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.

Key words: Caries, primary teeth, permanent teeth, dental fear.

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INTRODUCTION:

The establishment of a dental home early in life would prevent the development of dental caries and oral health problems. Dental fear may lead to lack of child cooperation, and therefore poor oral health. If dental fear was identified and managed successfully during childhood, this could prevent the progression of dental fear into adulthood.^{1,2} A dentist could recognize the different aspects of dental fear in each child and therefore guide his or her behavior accordingly.³ The Children's Fear Survey Schedule-Dental Subscale (CFSS-DS) is a well-known psychometric scale that was developed in 1982 for assessing dental fear in children.⁴ It has been shown to have good reliability-validity. CFSS-DS is used to register

differences in dental fear between experimental and control groups to select fearful and non-fearful children from a larger reference population and to estimate the prevalence of dental fear in children. CFSS-DS has been shown to be better in some situations than other scales such as the Venham Picture Test and the Dental Anxiety Scale.^{5,6} Hence, the present study was conducted to assess the 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 100 primary school children were randomly selected and were

requested to participate in the study after confirmation from their parents and teachers. Among 100 children, 66 were boys and 44 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 statistical significant.

RESULTS:

Table 1 shows mean total fear scores based on caries experience in primary teeth. We observed that high 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). Table 2 shows mean total fear scores based on caries experience in permanent teeth. In contrast to primary teeth, children with no caries are highest in permanent teeth. However, highest mean fear score was found under the ground. On comparing the results were found to be statistically significant (Fig 2).

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

dmft level	Number of children	Mean fear scores	p-value
No	21	25.12	0.216
Low	17	24.69	
Moderate	14	26.73	
High	48	24.36	
Total	100	25.14	

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

Fig 1:

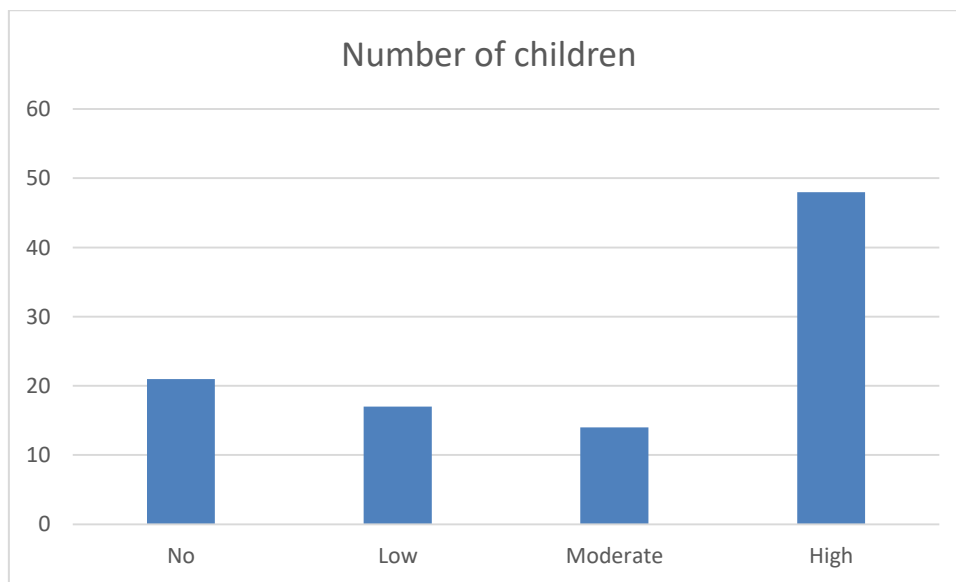
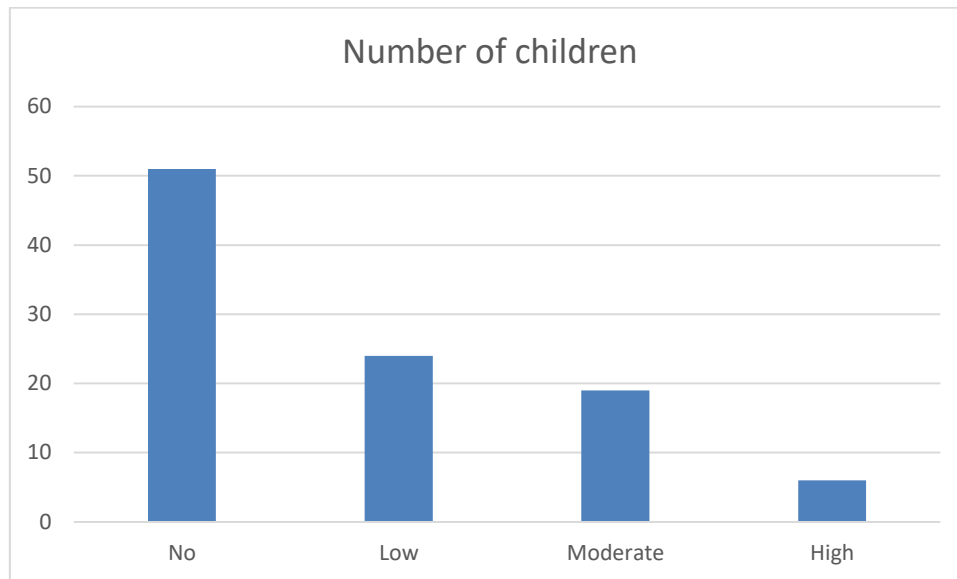


Table 2: Mean total fear scores based on caries experience in permanent teeth

DMFT level	Number of children	Mean fear scores	p-value
No	51	24.39	0.005
Low	24	25.65	
Moderate	19	26.41	
High	6	27.38	
Total	100	25.42	

Fig 2:



DISCUSSION:

In the present study, we observed that mean fear score for children with primary teeth caries was 25.14. similarly, mean fear score for children with permanent teeth caries was 25.42. the results were compared with studies from the literature. Alsatat FA et al assessed the level of dental fear among school children and determined its relationship with dental caries. The study design was a cross-sectional analytical study. A sample of 1,546 primary school children were randomly selected. The Children's Fear Survey Schedule-Dental Subscale (CFSS-DS) was completed in class to assess child dental fear. Caries experience was measured as decayed, missed, and filled permanent and primary teeth (DMFT/dmft) according to the World Health Organization (WHO) criteria. Approximately 24% of the participated children had high dental fear, and 12.50% of them had severe dental fear. Girls had higher rate of severe dental fear than boys (20% vs. 5%). The severity of caries was significantly increased in children who had higher fear scores (P = 0.035). they concluded that about one quarter of 6- to 12-year-old children had dental fear; about half of them had severe dental fear. Dental fear has a direct relationship with decayed permanent teeth and an inverse relationship with restored permanent teeth. Akbay Oba A et al evaluatde the level of fear of dental procedures among schoolchildren and assessed the relationship between caries experience and fear of dental procedures. 275 children aged 7-11 years were recruited for the study. Before conducting a dental examination, each subject was asked to independently complete a Children's Fear Survey Schedule - Dental Subscale (CFSS-DS) questionnaire. Children having a score of > or =38 were included in the group 'with dental fear' while those scoring <38 were placed in the 'without dental fear' group. All dental examinations were

performed on the school premises according to WHO criteria. Mean CFSS-DS value was 28.1, and the number of children who experienced dental fear was 40 (14.5%). It was found that Decayed, Missing and Filled Surface Index (DMFS-dfs) increased significantly with increasing CFSS-DS values. Fear scores were highest for 'Choking' (3.3), 'Injections' (2.6) and 'Having somebody put instruments in their mouth' (2.6). No significant differences in fear scores between boys and girls were found in this study. The data showed prevalence of dental fear in the 7-11-year-old children of this study. Dental fear scores decreased with increasing age.^{7,8}

Arapostathis KN et al evaluated the psychometric properties of a Greek version of the CFSS-DS. A sample of 260 children aged 4-12 completed the Greek version of the CFSS-DS while in the waiting room of a paediatric dentist. The dentist, who was unaware of the children's scores, rated the children's behaviour during the dental appointment using the Frankl scale. Children who returned for a second dental appointment during the study period completed the CFSS-DS a second time. The mean CFSS-DS score was 24.80 (standard deviation = 9.17). Age and gender were not related to mean scores. Invasiveness of dental treatment was not related to mean scores. Children who were most uncooperative/fearful on the Frankl had the highest mean scores (Kruskal-Wallis chi2 = 9.48; d.f. = 2; P = 0.009). The internal consistency (Cronbach's alpha) was 0.85, and the test-retest reliability (intraclass correlation) was 0.74. In conclusion, the Greek version of the CFSS-DS appeared to be reliable and valid. Further samples should include school samples, to include children who may not go to the dentist. Farooqi FA et al determined the prevalence of dental caries in the primary and permanent teeth and evaluated the brushing habits of school

children in Dammam, Kingdom of Saudi Arabia (KSA). Oral examination of the participants was conducted from February to May 2014. The total sample size for this cross-sectional study was 711. There were 397 children between the age of 6-9 years, who were examined for primary teeth caries, and 314 between the age 10-12 years were examined for permanent teeth caries. Primary and permanent dentitions were studied for decayed, missing, and filled teeth (dmft [primary teeth], DMFT [permanent teeth]). The overall prevalence of dental caries in primary and permanent teeth was almost 73% (n=711). Among the 6-9-year-old, the prevalence of caries was approximately 78% (n=397) whereas, among the 10-12-year-old children, it was approximately 68% (n=314). Mean dmft value among the 6-9-year-olds was 3.66 ± 3.13 with decayed (d) component of 3.28 ± 2.92 , missing (m) component of 0.11 ± 0.69 , and filled (f) component of 0.26 ± 0.9 . Mean DMFT value among the 10-12-year-old children was 1.94 ± 2.0 with decayed (D) component of 1.76 ± 1.85 , missing (M) component of 0.03 ± 0.22 , and filled (F) of component 0.15 ± 0.73 . Daily tooth brushing had a positive effect on caries prevention, and this effect was statistically significant for caries in primary teeth. They concluded that although the prevalence of dental caries in primary and permanent teeth was not found to be as high as other researchers reported from different cities of KSA, still the prevalence was high considering the World Health Organization future oral health goals. Awareness should be provided to students, as well as, teachers and parents regarding the importance of good brushing habits and regular dental visits.^{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.

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