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RESEARCH ARTICLE

PREVALENCE OF DENTAL FEAR & ITS RELATIONSHIP TO DENTAL CARIES & GINGIVAL STATUS AMONG SCHOOL CHILDREN IN MALAPPURAM DISTRICT, KERALA: A CROSS-SECTIONAL STUDY

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ABSTRACT

Child's dental fear has been reported as one of the reasons that increase, aggravate dental diseases and facilitate other oral diseases. This study is aimed to describe prevalence of dental fear and to assess the relationship between dental caries, gingival status and dental fear in 6-12-year-old children at Malappuram District. The sample comprised of 300 children aged 6-12 years. The questionnaire examined the profile of participants and assessed their dental fear using the Children's Fear Survey Schedule-Dental Subscale (CFSS-DS). Children have "dental fear" when the total CFSS-DS score is greater than or equal to 53. By contrast, those without dental fear gain the total point which is less than 53. After completing the questionnaire, a dental examination was undertaken by using OHI-S Index, DMFT Index and Gingival Index. The 3 indices were found to be higher in fearful child [OHI-S Index (3.17± 0.45), Gingival Index (2.34 ± 0.45), DMFT Index (7.35± 1.65) when compared with fearless child. Our findings demonstrated the status of 6-12-year-old children's dental fear at Malappuram district and reported that dental caries and gingival status had correlation with child dental fear score ($p < 0.05$).

INTRODUCTION

Fear is a psychological construct which is not directly observable but may manifest itself through cognitive, behavioural and physiological responses according to the cognitive vulnerability model of fear [1]. Anxiety is understood as a feeling of fear or apprehension about what is to come. Anxiety arises internally, and the cause of it may not be immediately apparent from the surrounding environment [2]. However, highly fearful or anxious children generally experience dental visits and treatments in a more negative way. They may experience various levels of apprehension before, during, and after dental treatment which may be mild and temporary or severe and affect an individual long before the date of the scheduled appointment (3).

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 [4]. Dental anxiety is a major complication for both patient and dentist. [5] This apprehension leads patients to postpone or cancel dental visits or avoid treatment entirely. This study aims to evaluate the prevalence of dental fear and its association with dental caries and gingival disease in 6-12-year-old school children in Malappuram district.

AIM

To assess prevalence of Dental Fear & its relationship to dental caries and gingival status among school children in Malappuram District.

OBJECTIVES

- To assess the prevalence of dental fear among school children.
- To assess prevalence of dental caries among school children.
- To assess gingival status/Oral hygiene status among school children.
- To assess correlation between dental fear & caries and gingival/Oral hygiene status.

MATERIALS AND METHOD

- Study design: Cross sectional study
- Sampling method: Convenience sampling
- Study location: 4 panchayaths (Kaladi/Edappal/Vattankulam/Thavanoor)
- Study population: School children (6-12 age group)
- Duration of study: 2months (August –September ‘2022)

Ethical clearance: obtained from Institutional Ethical Committee.

SAMPLE SIZE ESTIMATION

Estimated sample size-
$$\frac{Z^2 \times p \times q}{d^2}$$

$$Z \text{ alpha} = 1.96(95\% \text{ confidence, two tailed test}) \quad p = \text{prevalence} = 25\%(\text{reference}) \quad \text{precision level} (d) = 0.05$$

$$\text{Sample size} = \frac{(1.96)^2 \times 0.25 \times 0.75}{0.05^2} = \frac{3.96 \times 0.25 \times 0.75}{0.0025} = 297 \approx 300$$

Estimated sample- 300

Inclusion criteria: Age 6-12 years

Exclusion criteria: Children with any systemic diseases

TRAINING AND CALIBRATION OF EXAMINER: The examiners were trained and calibrated to ensure uniform interpretation.

GROUP	DFS>53 (FEARFUL CHILD) (n=156)	DFS<53(NO FEARFUL CHILD) (n=144)	t test
GINGIVAL INDEX	2.34 ± 0.45	1.88 ± 0.45	0.0001*
OHI-S INDEX	3.17 ± 0.45	1.36 ± 0.79	0.0001*
DMFT INDEX	7.35 ± 1.65	5.46 ± 0.25	0.0001*

Inter-examiner reliability was tested by repeating the examination on a group of 5 children of 6-12 year. Reliability Value, $\chi = 0.92$ & $0.88, 0.90$ for Dental Caries Index, Gingival Index & OHI-S Index respectively and was found to be high.

RESULTS

Of the 300 children examined, 156 children had dental fear (DFS \geq 53) which account for 52% of total participants and 144 children without dental fear which is about 48% of total participants. This result was noticeably different with $p < 0.05$. $P < 0.05$ is statistically significant (Independent Ttest).

DISCUSSION

The clinical practitioner feels difficulties while doing dental treatments especially in children. Basic reason for the less

cooperation of the child during dental treatment is due to dental fear. According to the study conducted by Tuba Tal *et al.*,(6) Armfield JM *et al.*,(1) Schuller A *et al.*,(7) dental fear is higher in children those with higher DMFT Index. Also study by Armfield JM *et al.*, (1) Schuller A *et al.* (7) Marya CM *et al.* (8) shown that OHI-S and Gingival Index is higher in fearful group.

CONCLUSION

The prevalence of dental fear in the studied subject at Malappuram district was 52 %. We found that dental caries and gingival index had a correlation with child dental fear score. Fearful child has reported poor oral health regarding Gingival index, OHI-S and DMFT index. By addressing the fear of the child through parents/ teachers could reduce the fear factor and thereby improve the oral health of the children.

RECOMMENDATION

To conduct the study with increased sample and in a diverse population would improve the generalizability.

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