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Oral Hygiene Status and Prevalence of Gingival Diseases in 11 to 13 Year Children in Srinagar, India

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Original Research Article

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Abstract: A cross-sectional study was carried out among children of age group 11-13 years, visiting different dental clinics of Srinagar city. The sample comprised of 175 boys and 125 girls. The information regarding oral hygiene maintenance and the oral hygiene status was filled. The oral hygiene status was assessed by using Oral Hygiene index simplified (OHI-S) by green and Vermillion and gingival health was assessed with Gingival Index by Loe and Silness. Prevalence of gingivitis was found to be 65%, with males being highly affected by gingival disease.
Keywords: Children, gingivitis, Prevalence.

INTRODUCTION

Several epidiomological studies have been conducted worldwide, to assess the prevalence of oral diseases and treatment needs among children. The result of these studies have shown, dental caries and gingival diseases to be the most common oral diseases in children [1-4] However, in contrast to the trends of dental caries the prevalence of gingivitis has shown a worldwide increase [5].

Gingivitis is characterized by the presence of clinical signs of inflammation that are confined to the gingiva and associated with teeth showing no attachment loss [6]. Lack of good oral hygiene is the main predisposing factor for gingivitis in children, which affects overall well-being of a child [7]. Due to poor oral hygiene, gingival inflammation has been found commonly among children of low socioeconomic status [8, 9]. Dental plaque which is a structured, resilient, yellowish grey substance that adheres to the intraoral hard surfaces is primarily composed of bacteria in a matrix of salivary glycoproteins & extracellular polysaccharides.

This makes it impossible to remove the plaque by rinsing or the use of sprays.

Jose A and Joseph MR, reported prevalence of gingivitis to be 15%, among 12 to14 year old children [10] Sharva V *et al.*, reported prevalence of gingivitis to be 59% in 12-15year old children [11]. The early evaluation and intervention of gingivitis and periodontitis can minimize the chance of tooth loss. Hence, this study was conducted to find the prevalence of gingivitis in children of age group 11-13 years, visiting different dental clinics of Srinagar city, India.

METHODOLOGY

The present study was a cross-sectional study done between September 2017 to November 2017, among 300 children of age group 11-13 years, visiting different dental clinics of Srinagar city. The sample comprised of 175 boys and 125 girls. Parents were explained about the entire procedure and use of the study and consent was taken from them. Only those children were included in whom parents gave their consent to carry out the dental examination. Children undergoing orthodontic treatment, mentally retarded children, children with systemic diseases and children with the presence of other disabilities were excluded from the study. The information regarding oral hygiene maintenance and the oral hygiene status was filled. The oral hygiene status was assessed by using Oral Hygiene index simplified (OHI-S) by green and Vermillion and gingival health was assessed with Gingival Index by Loe and Silness. The indices were recorded using mouth mirror, explorer and periodontal probe on a dental chair, each examination taking around 5 to 10 minutes. Data were collected, tabulated, and analyzed using Chi-square test and fishers exact test. The level of significance was set at 0.05.

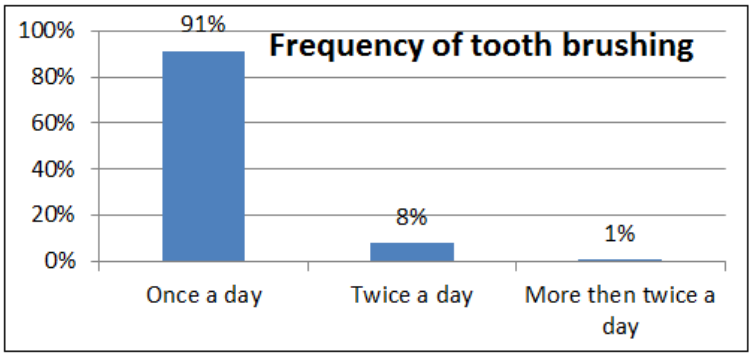
RESULTS

Distribution of sample is shown in Table-1.

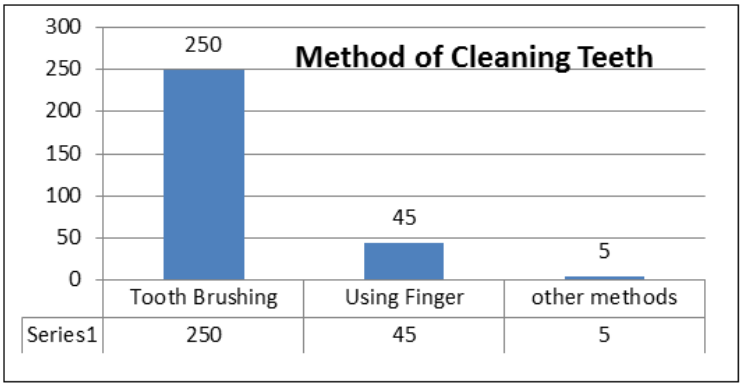
Table-1: Sample Distribution

AGE	GENDER		TOTAL
	MALES	FEMALES	
11	78	59	137
12	48	38	86
13	49	28	77
Total	175	125	300

Frequency of tooth brushing and method of cleaning teeth is shown in bar graph-1 and 2



Graph-1: Frequency of tooth brushing



Graph-2: Method of cleaning teeth

Graph-3 represents the oral hygiene index of the subjects. Out 0f 300 subjects examined, 65% of the sample showed fair oral hygiene status whereas, 31% were having good oral hygiene status and remaining 4% showed poor oral hygiene

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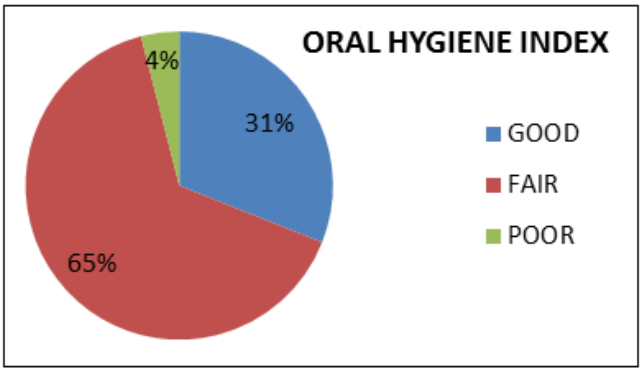
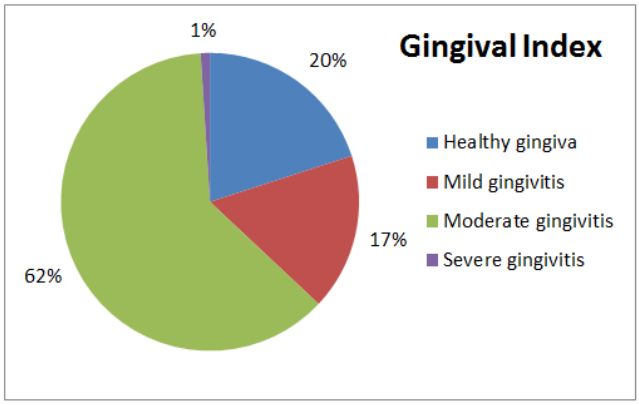


Graph-3: oral hygiene index

Graph-4 illustrates the Gingival index of the subjects being examined. Only 20 % of the children showed healthy gingival, 62% had moderate gingivitis and 17% had mild gingivitis



Graph-4: gingival index

Prevalence of gingival disease based on age and gender is represented in Table-2 and 3. A significant difference (0.003) was seen between male and females, with males being highly affected by gingival disease. The difference between the age groups was highly significant (0.000) with 11 year children showing increased gingival lesions than rest of the age groups.

Table-2: gingival disease prevelance based on age

Age In Years	Disease	Healthy	P Value
11(137)	90	47	0.000 (P<0.05)
12(86)	56	30	
13(77)	49	28	

Table-3: Gingival disease based on gender

Gender	Disease	Healthy	P Value
Males (175)	101	74	0.003 (P<0.05)
Females(125)	78	47	

DISCUSSION

Daily removal of supragingival plaque is considered essential for the prevention of oral disease as well as in maintaining the good oral hygiene. By reducing the biofilm mass there will be reduction in proportion of pathogenic bacteria that in turn will help prevent caries and periodontal disease [12]. There is significant co-relation between plaque retention and gingival inflammation [13]. The use of soft-bristled brushes, interdental brushes and dental floss have all been recommended for the removal of plaque from the various surfaces of the teeth during home care [14]. In this study Majority of students examined used tooth brush and tooth paste to clean their teeth; 40 children use finger to clean their teeth, whereas 5 children used other method like use of miswaak for teeth cleaning.

91% of them brushed once daily whereas 8% of Children brushed twice daily and 1% brushed thrice daily. According to a study by Polk *et al.*, increasing the intention of children to brush twice a day who are brushing once a day or less, could be an effective way to increase their reported brushing frequency [15].

Oral hygiene status examination revealed that majority 65% of the sample showed fair oral hygiene status whereas, 31% were having good oral hygiene status and remaining 4% showed poor oral hygiene.

When gingival index was considered 20% of the population examined had healthy gingival, 17% had mild gingivitis, 62% moderate Gingivitis and 1% showed severe gingivitis.

Prevalence of gingivitis was found to be 65% which is less than the results found by Bhayya *et al.*, [16] showing prevalence of gingivitis to be 81% among school children. Dhar *et al.*, [17] reported 84.37% prevalence of gingivitis among school going children of rural areas in Udaipur district.

As the present study showed that majority of the participants used tooth brush as a method for cleaning teeth, only 20 % of the children showed healthy gingiva which could be due to improper tooth brushing technique or inadequate tooth brushing time. Males were found to be more affected by gingivitis than females (0.003). This might be due to better oral hygiene awareness among girls.

The identification of etiological factors and other risk factors of gingivitis is of vital importance for the establishment of various preventive measures [6].

With the increase in age children can understand the importance of teeth and learn maintenance of oral hygiene [18]. In order to prevent gingivitis dental health education should be provided to children in schools. Dentists should give information and training on regular plaque control methods to decrease the prevalence of gingivitis among children.

CONCLUSION

In order to improve the oral health knowledge and establish good oral hygiene habits in children programmes should be implemented in schools. It is essential to encourage the concept of oral hygiene care at an early stage and effectively supervise the oral cleaning habits of children. Children's oral health care is the responsibility of dental health professionals, parents and society.

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