

Assessment of Gingival Index In School Children: An Observational Study

Akriti Mahajan^{1*} Alka Choudhary² Gunjan Verma³ Shelly Singh⁴ Truppti P Sonone⁵ Prabhu Raj Singh⁶

¹Private Consultant, Department of Oral Medicine and Radiology, Jammu and Kashmir, India.

²PG Student, Department of Prosthodontics, Crown and Bridge, Himachal Dental College, Sundernagar, Himachal Pradesh, India.

³Senior Resident, Department of Periodontology, Faculty of Dental Sciences, KGMU, Lucknow, India.

⁴Private Consultant, Department of Conservative Dentistry and Endodontics, Clovedental, Panchkula, Haryana, India.

⁵Senior Lecturer, Department of Orthodontics and Dentofacial Orthopedics, Yerala Dental College, Mumbai, India.

⁶Senior Lecturer, Department of Prosthodontic Crown and Bridge & Implantology, Sinhgad Dental College and Hospital, Pune, India.

ABSTRACT

Background: Children with healthy gingival tissues most likely progress to adult life with good periodontal health. The present study was conducted to evaluate gingivitis in school children.

Materials & Methods: The present study was conducted on 254 children of age ranged 6-17 years of both genders. Gingival index proposed by Sillness & Loe was recorded as; 0 – no inflammation, 1- mild inflammation, 2- moderate inflammation and 3- severe inflammation.

Results: Out of 254 subjects, boys were 130 and girls were also 124. Age group 6-8 years had 10 boys and 8 girls, 8-11 years had 34 boys and 30 girls, 11-14 years had 38 boys and 42 girls and 14-17 years had 48 boys and 44 girls. The difference was non- significant ($P > 0.05$). Score 3 was seen in 38% boys and 42% girls, 2 in 34% boys and 26% girls, 1 in 15% boys and 18% girls while 0 in 12% boys and 14% girls. The difference was significant ($P < 0.05$).

Conclusion: Gingivitis is common in school children. Gingival score 3 was found in maximum number of children.

Keywords: Children, Gingivitis, Gingival index.

INTRODUCTION

Periodontal diseases including gingivitis and periodontitis are serious infection that if left untreated can lead to tooth loss. Gingivitis is reversible with professional treatment and good oral home care, whereas periodontitis is irreversible as this progress with destruction of bone.¹ Children with healthy gingival tissues most likely progress to adult life with good periodontal health. Previous reports indicate that a periodontal disease is the second most frequent dental problem in children and adults. Children often manifest periodontal disease as inflammation of the gingival

tissue. As a consequence of these diseases, if they are not treated on time, the destructive processes are progress in both solid and soft tissues together with losing teeth.² Epidemiologic studies indicate that gingivitis of varying severity is nearly universal in children and adolescents. These studies also indicate that the prevalence of destructive forms of periodontal disease is lower in young individuals than in adults. Epidemiologic surveys in young individuals have been performed in many parts of the world and among individuals with a widely varied background.³

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*Correspondence Dr. Akriti Mahajan.

Department of Oral Medicine and Radiology, Jammu and Kashmir, India.

Email: Not Disclosed

Gingivitis characterized by the presence of gingival inflammation without detectable loss of bone or clinical attachment is common in children. Although the microbiology of this disease has not been completely characterized, increased subgingival levels of *Actinomyces* sp., *Capnocytophaga* sp., *Leptotrichia* sp., and *Selenomonas* sp. have been found in experimental gingivitis in children when compared to gingivitis in adults. These species may therefore be important in its etiology and pathogenesis.⁴ The present study was conducted to evaluate gingivitis in school children.

MATERIALS & METHODS

The present study was conducted in the department of Pedodontics. It comprised of 254 children of age ranged 6-17 years of both genders. The study was approved from the institutional ethical committee. Informed consent was obtained prior to the study. General information such as name, age, gender etc. was recorded. All children were carefully assessed by with the help of mirror, twizzer and probe by an expert dentist. Gingival index proposed by Sillness & Loe was recorded as 0 – no inflammation, 1- mild inflammation, 2- moderate inflammation and 3- severe inflammation. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I: Distribution of subjects.

Total- 254		
Gender	Boys	Girls
Number	130	124

Table I, graph I shows that out of 254 subjects, boys were 130 and girls were also 124.

Graph I Distribution of subjects.

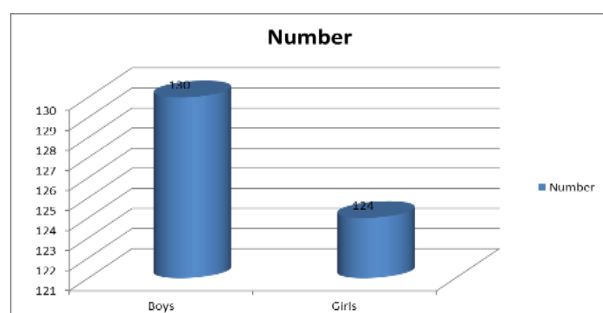
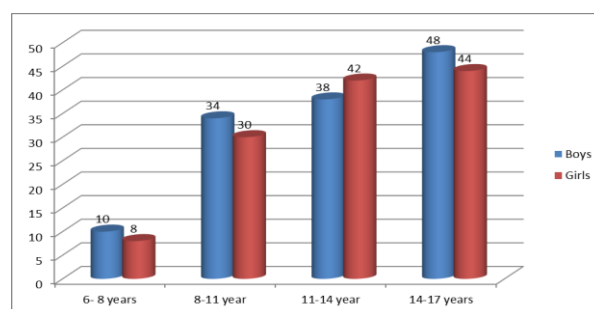


Table II: Age wise distribution of subjects.

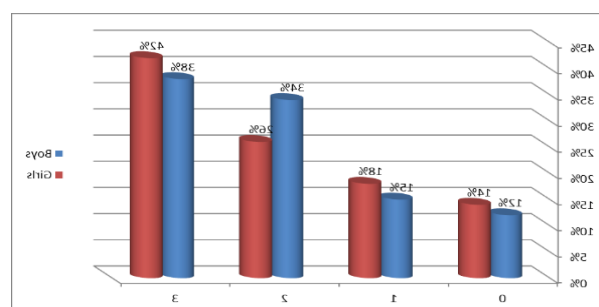
Age group	Boys	Girls	P value
6- 8 years	10	8	0.32
8-11 year	34	30	
11-14 year	38	42	
14-17 years	48	44	
Total	130	124	

Table II, graph II shows that age group 6-8 years had 10 boys and 8 girls, 8-11 years had 34 boys and 30 girls, 11-14 years had 38 boys and 42 girls and 14-17 years had 48 boys and 44 girls. The difference was non- significant ($P > 0.05$).

Graph II: Age wise distribution of subjects.



Graph III: Gingival index in subjects.



Graph III shows that score 3 was seen in 38% boys and 42% girls, 2 in 34% boys and 26% girls, 1 in 15% boys and 18% girls while 0 in 12% boys and 14% girls. The difference was significant ($P < 0.05$).

DISCUSSION

The term “periodontal diseases” includes any inherited or acquired disorders of the tissues that are investing and supporting the teeth (gingiva, cementum, PDL, and alveolar bone).⁵ Tooth brushing and other behaviors that comprise young people’s lifestyles may directly or indirectly

impinge on their health in the short or long term. Most of behavioral patterns were established in early childhood. Oral health behavior may constitute an integral part of an individual's lifestyle. It is essential to develop an effective education programs for oral health and practice targeted at young people.⁶ The present study was conducted to evaluate gingivitis in school children.

In present study, out of 254 subjects, boys were 130 and girls were also 124. Age group 6-8 years had 10 boys and 8 girls, 8-11 years had 34 boys and 30 girls, 11-14 years had 38 boys and 42 girls and 14-17 years had 48 boys and 44 girls. Bhatia et al⁷ in their study found that only 29.8 % had healthy gingiva, 38.5 % had mild gingivitis, 31.4 % had moderate gingivitis, and 0.3 % had severe gingivitis. The difference between both genders was not statistically significant $P > 0.05$. 36.8 % of the examined students never brushed their teeth. Average gingival index (GI) and average plaque index (PI) were 0.77 and 0.61 respectively.

We found that gingival score 3 was seen in 38% boys and 42% girls, 2 in 34% boys and 26% girls, 1 in 15% boys and 18% girls while 0 in 12% boys and 14% girls. Lopez et al⁸ assessed the prevalence of gingivitis among large group of adolescents in the United States and found that 82.1% of the participating subjects were having gingivitis. Similar findings of high prevalence of gingivitis among children and adolescents were reported by other studies worldwide.

Gingival problems, either in acute or chronic nature, are nearly universal among children and adolescents. Diagnosis of various types of gingivitis relied mainly on the clinical findings and manifestations. Those findings include redness and edema of the marginal gingiva and bleeding upon probing. As disease persists, gingival margin may become rolled, interdental papilla may become enlarged and bulbous, bleeding may start spontaneously, and probing depth may increase as a consequence of gingival overgrowth.⁹

Poor oral health has thus the potential of hampering the quality of life.¹⁰ Decreased food intake because of oral pain or poor dental status can cause low growth in children and may worsen the nutritional status. Pain might also have a negative impact on the ability to engage in social relations and children

might not get the full benefit of their education if suffering from pain and discomfort. While poor dental status among children has a negative effect on speech development, it may also have a socially stigmatizing effect in adolescents affecting social acceptance. However there is no definite picture, yet regarding the disease status among children in rural and backward areas of country.¹¹

Normal and abnormal fluctuation in hormone levels, including changes in gonadotrophic hormone levels during the onset of puberty, can modify the gingival inflammatory response to dental plaque. Similarly, alterations in insulin levels in patients with diabetes can affect gingival health.¹² In both situations, there is an increased inflammatory response to plaque. However, the gingival condition usually responds to thorough removal of bacterial deposits and improved daily oral hygiene.

CONCLUSION

Gingivitis is common in school children. Gingival score 3 was found in maximum number of children.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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