

Gingivitis & Dental Caries Status among the School Going Children of Jamshoro City

1. Munir Ahmed Banglani 2. Suneel kumar Punjabi 3. Noor Ahmed Khoso

1. Asstt. Prof. & Incharge Community Dentistry Dept. 2. Asstt. Prof., OMFS Dept.

3. Assoc. Prof. of Oral Pathology, Faculty of Dentistry, LUMHS, Jamshoro

ABSTRACT

Objective: The purpose of the study is to assess the gingivitis and dental caries status among school going children of Jamshoro city.

Study Design: Descriptive Study

Place and Duration of Study: This study was conducted at the out patients department of Liaquat University Hospital Jamshoro during the year Jan 2010 to Oct 2011

Materials and Methods: A descriptive study was conducted among 700 school going children. The general information and the information regarding oral hygiene practice and dental visits were obtained. The gingivitis of the subjects was assessed by using Loe and Silness Gingival Index. The dental caries status was assessed by using International Caries Detection and Assessment System.

Results: Out of 700 school children, n=270 (38.57%) were boys and remaining n=430 (61.42%) were girls, the age distribution was done in three groups and in group one total children were n=101 (14.42%), in group two n=187 (26.71%) and in group three n=432 (58.85%) children, Gingival Index according to Loe and Silness in grade zero were n=322 (46.00%) children, grade one n=165 (23.57%) children, grade two n=143 (20.42%) children and in grade three n=70 (7%) children, Dental Caries Status of school children in relation with age group was in age group one n=199 (28.42%) children, in age group two n=175 (25%) children and in age group three n=115 (16.42%) children.

Conclusion: The results of this study indicate that there is a moderate prevalence of gingivitis and dental caries among school going children of Jamshoro city. We the dental care providers, oral hygienist, parents and teachers trying to motivate the school going childrens for to improving the oral health of the oral cavity so that they can prevent themselves from common problems of the oral cavity.

Key Words: School children, gingivitis, dental caries, oral hygiene, treatment needs, Prevalance.

INTRODUCTION

Oral diseases are still major issue of consideration globally; principally periodontal diseases and dental caries that affect oral environment and as well as general status of individuals.¹

Despite major improvement in oral health globally these problems still persist in many developing and under develop countries.²

Among dental diseases, dental caries and gingivitis are major issue of debate worldwide. Dental caries is a multi-factorial, infectious disease that is characterized by first dissolution and then destruction of the calcified tissue of teeth (Enamel, Dentine and Cementum)³ mainly two groups of bacteria are responsible for initiating caries; *Streptococcus mutans* and *Lactobacillus* and if left untreated, the dental caries can lead to pain, tooth loss and some times life threatening infection.⁴

The prevalence of dental caries is higher world wide; like in India 50% to 60%⁵, in Italy 39.5%⁶ and Jeddah (Saudi Arabia) is near about 83%⁷, and this high prevalence of dental caries has been totally dependent on factors such as high sugar consumption, moving to a westernized diet, socioeconomic status of peoples, area of living urban / rural and last but not the least mother's

level of education and awareness regarding oral diseases.⁸

Gingivitis is one of the most common oral diseases that begins in early childhood and it is characterized by reversible, nonspecific inflammation of the gingiva, without the loss of periodontal tissue attachment.^{9, 10}

Many epidemiological studies of gingivitis have been carried out in developed and developing countries, its prevalence in USA 61.5% and 95% in India^{11, 12} and the prevalence of gingivitis is also different in different age group children like 1 to 9% in the year of 5 to 11 years and 1 to 46% in 12 to 15 years of children.¹³

In literature it is clearly mentioned that the prevalence of gingivitis in both genders is varies and according Massler et al¹⁴ have found Males to have a significantly higher prevalence than girls during adolescence while Parfitt et al¹⁵ found a higher peak level of gingivitis occurred earlier in girls than in boys.

The Clinical features of gingivitis are redness and swelling of gums, bleeding from sulcus on gentle probing, presence of deposits on teeth.¹⁶

The aetiological factors of gingivitis are poor oral hygiene that encourages the plaque, dietary inadequacies, malocclusion, carious lesions, systemic disease, faulty restorations, hormonal changes, socio-

economic conditions and mouth breathing is also reported in literature.^{17, 18}

Many studies show that the most common cause of gingivitis and dental caries is poor oral hygiene. Therefore, the best way of maintaining good oral hygiene with brushing teeth regularly for atleast twice a day is essential for removal of plaque and debris in order to contribute to good dental and periodontal health.¹⁹

The facts of this study may be beneficial for developing the future policies against the various factors in preventing the gingivitis and dental caries.

MATERIALS AND METHODS

A descriptive study was conducted to evaluate the prevalence of gingivitis and caries status among the school going childrens of Jamshoro city.

A predesigned patient's examination proforma was used to keep the record of the entire data. Patients attended the out patients department of Liaquat University Hospital Jamshoro during the year Jan 2010 to Oct 2011 were included with the sample of 700 patients. A routine intra-oral examination was performed for diagnosis of the disease, with the help of dental instruments, while patients seated in the dental chair. Evaluation of the disease was done by the visual method of examination, and with the periodontal probe where needed, according to the standardized method. Status and severity of gingivitis was assessed with Gingival Index by Loe and Silness and recorded, and for dental caries status detection done by International Caries Detection and Assessment System.²⁰

The collected data was entered and analyzed by SPSS version 11.

Gingival Index by Loe and Silness:

Criteria for Gingival index system:

Grade-0 = Normal gingiva

Grade-1 = Mild inflammation – Slight change in color and slight edema; No bleeding on probing.

Grade-2 = Moderate inflammation – Redness, edema and glazing; bleeding on probing.

Grade-3 = Severe inflammation – Marked redness and edema; ulceration; tendency to spontaneous bleeding.

International Caries Detection & Assessment System

0-Sound Tooth

1-First visual change in enamel

2-Distinct Visual change in enamel

3-Microcavitation

4-underlying dark shadow from dentine with or without cavitation

5- Distinct cavity with visible dentine

6- Extensive distinct cavity with visible dentine

RESULTS

Out of 700 school children, n=270 (38.57%) were boys and reaiming n=430 (61.42%) were girls as shown in Pie chart # 1.

The age distrubution was done in three groups and in group one total children were n=101 (14.42%), in group two n=187 (26.71%) and in group three n=432 (58.85%) children as shown in Chart # 2

Gingival Index according to Loe and Silness in grade zero were n=322 (46.00%) children, grade one n=165 (23.57%) children, grade two n=143 (20.42%) children and in grade three n=70 (7%) children as shown in table # 1.

Dental Caries Status of school children in relation with age group was in age group one n=199(28.42%) children, in age group two n=175 (25%) children and in age group three n=115 (16.42%) children as shown in Chart-3

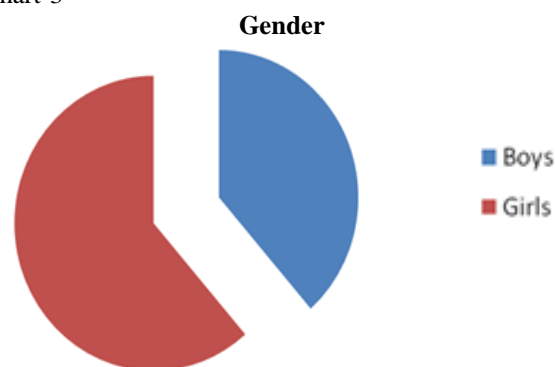


Chart No.1: Gender Distribution Pie

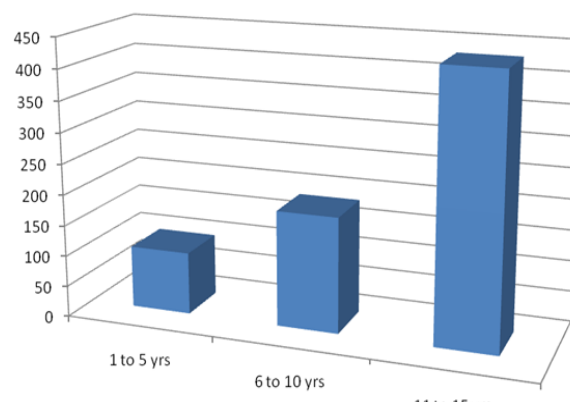


Chart No.2: Age Distribution (N=700)

Table No.1: Gingival Status of Patients inrelation with gender destitution

Gingival Status	# of Patients (N=700)	Gender		(%)
		Boys	Girls	
Grade-0	322	192	182	53.42%
Grade-1	165	64	101	23.57%
Grade-2	143	51	92	20.42%
Grade-3	70	15	55	10.00%
Total	700	270	430	100%

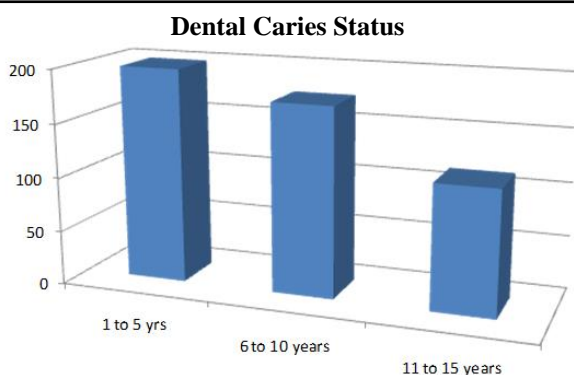


Chart No.3: Dental Caries Status of Patients in relation with age group

DISCUSSION

Dental plaque is a major cause of gingivitis, However there are other factors that may promote the prevalence of gingivitis like; systemic diseases, hormonal changes, sex, age, and economic conditions⁹. The result of this study group population indicates that prevalence of gingivitis was 57.67% among school going female children, these result are similar with the results of Kelly and Sanchez study²¹, but Marshal and Magnusson²² results showed more in boys as compared to girls and this change may be due to social and ethnical differences²³.

Oral hygiene negligence was the most common and significant issue in developing gingivitis in boys and girls at different ages which is in agreement with most of the similar studies done on this topic²³.

Dental caries is a multifactorial disease and the complex interaction of several aetiological factors result in increase the prevalence of the dental caries²⁴.

Since very few studies done on this topic in the rural areas of the Sindh Province and the results of this study subjects are similar with other studies done in different parts of the world^{5, 6, 7}.

The important feature of the this study was that there were very few children who had filling in their oral cavity and this may be due to poor knowledge and socioeconomic conditions of their parents.

CONCLUSION

The results of this study indicate that gingivitis and dental caries among school going children of jamshoro city was common. The dental health care has to play a major role in motivating and educating school going children for prevention of common oral health issues.

REFERENCES

- Peterson PE. The World Oral Health Report 2003: continuous improvement of oral health in the 21st century-the approach of the WHO Global Oral Health Program. *Commun Dent Oral Epidemiol* 2003; 31:3-23.

- Al-Ansari J, Honkala E, Honkala S. Oral health knowledge and behaviour among male health sciences college students in Kuwait. *BMC Oral Health* 2003;3:2.
- Holloway PJ, Moore WJ. The role of sugar in the etiology of dental caries. *J Dent* 1983; 11:189-213. doi:10.1016/0300-5712(83)90182-3.
- www.wikipedia.org. Cavities/tooth decay, hosted on the Mayo Clinic website. Page accessed May 25, 2008.
- Patro BK, Kumar BR, Goswami A, Mathur VP, Nongkynrih B. Prevalence of dental caries among adults and elderly in an urban resettlement colony of New Delhi. *Indian J Dent Res* 2008;19:95-98.
- Perinetti G, Varvara G, Esposito P. Prevalence of dental caries in schoolchildren living in rural and urban areas: results from the first region-wide Italian survey. *Oral Health Prev Dent* 2006; 4:199-207.
- Gandeh MBS, Milaat WA. Dental caries among schoolchildren: report of a health education campaign in Jeddah, Saudi Arabia. *Eastern Mediterranean Health J* 2000; 6:396-401
- Patel DR, Parkar SM. Assessment of gingival and dental caries status among 12 and 15 years old school going children of Ahmedabad city-A pilot study. *Th J Ahmedabad Dent Coll & Hospt* 2011;2:17-21.
- Kinoshita S, Wen R, Sueda T. *Atlas a Color de Periodoncia*. Spain: Espaxs; 1998.p.1-10.
- Marshall-Day CD, Shourie KL. A roentgenographic survey of periodontal disease in India. *J Am Dent Assoc* 1949; 39:572-88.
- Bhat M. Periodontal health of 14-17-year-old US schoolchildren. *J Public Health Dent* 1991;51(1): 5-11.
- Varma BRR, Nayak RP. *Current concepts in periodontics*. 1st ed. SA Medi Publishing House; 2002. p.106.
- Stein GE. Enfermedad periodontal en niños y adolescentes. *Práctica Odontológica* 1997;18:33-36.
- Massler M, Cohen A, Schour I. Epidemiology of gingivitis in children. *J Am Dent Assoc* 1952;45: 319-324.
- Parfitt JG. A five-year longitudinal study of the gingival conditions of a group of children in England. *J Periodontol* 1957; 28:26-32.
- American Academy of Periodontology. Parameters of care. *J Periodontol* 2000; 71 : 847-883.
- Peretz B, Bimstein E, Macheti EM. Periodontal status in childhood and early adolescence. *J Clin Pediatr Dent* 1996; 20:229-32.
- Gulati MS, Grewal N, Kaur A. A comparative study of effects of mouth breathing and normal breathing on gingival health in children. *J Indian Soc Pedod Prev Dent* 1998; 16:72-83.
- Addy M, Hunter ML, Kingdon A, Dummer PM, Shaw WC. An 8-year study of changes in oral

- hygiene and periodontal health during adolescence. Int J Paediatr Dent 1994 ; 4:75-80.
20. Zandoná AF, T. Zero D. Diagnostic tools for early caries detection. J Am Dent Assoc 2006;137: 1675-1684.
21. Kelly JE. Saez MJ. Periodontal disease and oral hygiene among children. Vital Health Stat 1972; (117):1-28.
22. Marshall-day CD, Stephens RG, Quigley LFJ. Periodontal disease: prevalence and incidence. J Periodontol 1955; 26:185-203.
23. Ketabi M, Tazhibi M and Mohebrasool S. The Prevalance and Risk Factors of Gingivitis Among the Children Referred to Isfahan Islamic Azad University (Khorasgan Branch) Dental School, In Iran. Dent Res J 2006;3:1-5.
24. Rao A, Sequeira SP, Peters S. Prevalence of dental caries among school children of Moodbidri. J Ind Soc Pedod Prev Dent 1999;17:45-8.

Address for Corresponding Author:**Dr Suneel kumar Punjabi**

507 5th floor Citizen Plaza opp Aga Khan Hospital
Main Jamshoro Road
Qaismabad, Hyderabad
Cell No. 0333-3603176
drsuneelpanjabi@yahoo.com