International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 08, 2020
ISSN: 1475-7192

Assessment of oral hygiene status and gingival diseases among school going children

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ABSTRACT--*Dental caries stars appearing in early childhood in both genders. It is still a common health problem. The present study was conducted to assess oral hygiene status and gingival diseases among school going children. This study was conducted among 450 school going children age ranged 8-12 years of both genders. The oral hygiene status was evaluated by using oral hygiene index simplified (OHI- S). Loe and silness index assessed gingival status and Periodontal status was determined with Russell's Periodontal index.8 years children had 82% decayed, 7.4% missing and 3.2% filled teeth. 9 years had 84.5% decayed, 6.3% missing and 8.4% filled teeth, 10 years had 86.2% decayed, 3% had missing and 12% had filled teeth, 11 years had 80% decayed, 2.5% had missing and15% had filled teeth and 12 years had 81.5%decayed, 1.4% had missing and 10.4% had filled teeth. The mean DMFT/ dmft score >3 in children with 8 years was seen in 2%, I 8 years in 3.5%, in 10 years in 4%, in 11 years in 3.2% and in 12 years in 3.8% and score 0 was present in 90%, 91%, 87%, 88% and 86% in years 8, 9, 10, 11 and 12 years old children respectively. Gingival status was mild in 22%, mild in 45%, moderate in 30% and severe in 3%. RPI was negative in 24%, mild gingivitis in 50%, gingivitis in 26% and gingivitis with pocket destruction was seen in 0%. Authors found that the caries, gingival and periodontal diseases were quite higher in higher age group as compared to lower. However, overall oral hygiene status found to be good.*

Key words--oral *hygiene status, Gingival diseases, Periodontal*

I. INTRODUCTION

Oral health is overall health. The occurrence of dental and oral diseases is universally present. These diseases have to be treated as they are irreversible.[1] These demand high care professional opinion. The prevalence of dental caries and gingival diseases among children is on rise.[2] Pain, difficulty in eating, drinking and swallowing are common complains among these patients. Dental caries stars appearing in early childhood in both genders. It is still a common health problem.[3]

A good oral hygiene can prevent occurrence of both dental caries and periodontal diseases. Dental caries is an irreversible microbial disease of calcified tissue characterized by destruction of organic and demineralization of inorganic portion of tooth.[4] Dental caries can be prevented by effective tooth brushing. It should be started as soon as first tooth erupts in the oral cavity. Parents should take care of their child's oral health. They should assist their child to brush. The use of fluoridated toothpaste is preferred.[5] 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. The use of sugar products such as chocolates, candies, gums and sticky food should be avoided. Brushing in the morning and at the evening after meals minimize the prevalence of dental caries.[6]

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Received: 12 Mar 2020 | Revised: 22 Apr 2020 | Accepted: 09 May 2020

Plaque accumulation around the teeth is the leading cause of gingivitis and periodontitis. Modification of life style can be helpful in preventing these diseases.

These diseases although prevalent across most socioeconomic strata are more common among the poorer class largely reflective of the prevailing oral health-related inequalities in our society.[7]

They have tried to correlate these differences to the lack of information about basic oral health care, especially at school level. The level of oral health-care knowledge in the middle school children can play a very crucial role, as their dentition is in a transition phase as well as child see the development of cognitive abilities. Understanding of level of oral health knowledge can help oral health agencies to develop an oral health-care policy in the prevention of dental problems in very early stage.[8]

Every child should be brought to the dentist every 6 months to have dental check up. School going children can be educated about their oral hygiene .[9] The present study was conducted to assess oral hygiene status and gingival diseases among school going children.

II. MATERIALS & METHODS

This study was conducted among 450 school going children age ranged 8-12 years of both genders in the department of Pedodontics. The study was approved from institutional ethical committee and parents of children were informed regarding the study and their consent was obtained. School authority's permission was also sought before commencing the study.

A thorough oral examination was performed by two dental surgeons. The oral hygiene status was evaluated by using oral hygiene index simplified (OHI- S). Loe and silness index assessed gingival status and Periodontal status was determined with Russell's Periodontal index. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

III. RESULTS

Table 1: Distribution of subjects

Age (Years)	Boys	Girls
8	35	30
9	45	35
10	56	40
11	64	35
12	60	50
Total	260	190

Table I shows that there were 35 boys and 30 girls of 8 years, 45 boys and 35 girls were of 9 years, 56 boys and 40 girls were of 10 years, 64 boys and 35 girls were of 11 years and 60 boys and 50 girls were of 12 years.

Table 2: Decayed, missing, filled teeth in children

Received: 12 Mar 2020 | Revised: 22 Apr 2020 | Accepted: 09 May 2020

Age (Years)	Decayed	Missing	Filled
8	82%	7.4%	3.2%
9	84.5%	6.3%	8.4%
10	86.2%	3%	12%
11	80%	2.5%	15%
12	81.5%	1.4%	10.4%
P value	0.94	0.05	0.02

Table III shows that 8 years children had 82% decayed, 7.4% missing and 3.2% filled teeth. 9 years had 84.5% decayed, 6.3% missing and 8.4% filled teeth, 10 years had 86.2% decayed, 3% had missing and 12% had filled teeth, 11 years had 80% decayed, 2.5% had missing and15% had filled teeth and 12 years had 81.5%decayed, 1.4% had missing and 10.4% had filled teeth. The difference was significant (P< 0.05).

Table 3: DMFT/dmft score of children

DMFT/dmft score	8	9	10	11	12
0	90%	91%	87%	88%	86%
1-3	8%	5.5%	9%	8.8%	10.2%
>3	2%	3.5%	4%	3.2%	3.8%

Table III shows that mean DMFT/ dmft score >3 in children with 8 years was seen in 2%, I 8 years in 3.5%, in 10 years in 4%, in 11 years in 3.2% and in 12 years in 3.8% and score 0 was present in 90%, 91%, 87%, 88% and 86% in years 8, 9, 10, 11 and 12 years old children respectively.

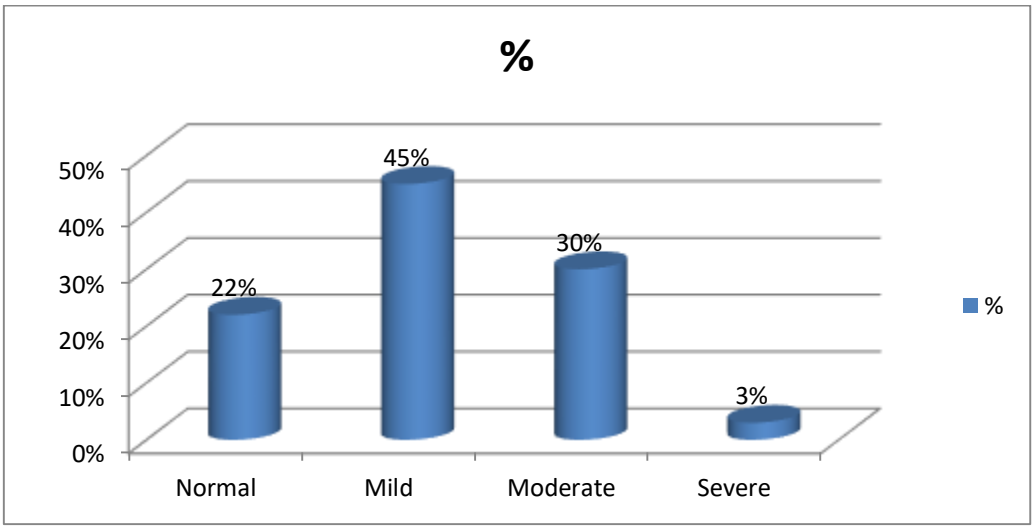

Figure 1: Gingival status in children

Graph I shows that gingival status was mild in 22%, mild in 45%, moderate in 30% and severe in 3%.

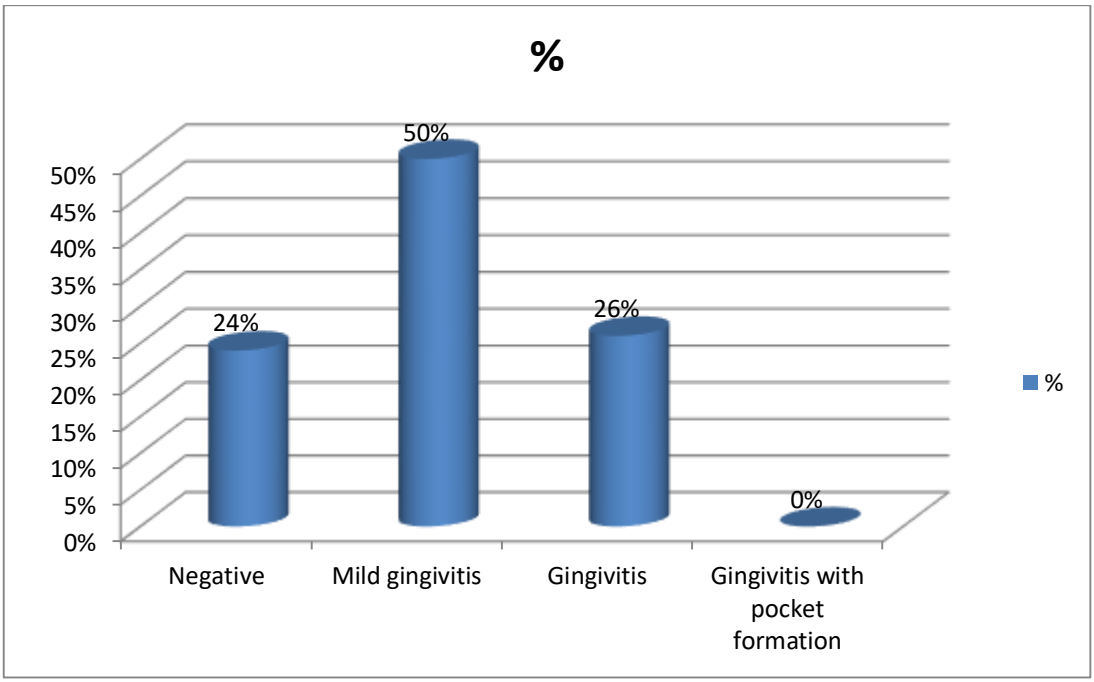

Figure 2: Rusell's periodontal index in children

Graph II shows that RPI was negative in 24%, mild gingivitis in 50%, gingivitis in 26% and gingivitis with pocket destruction was seen in 0%.

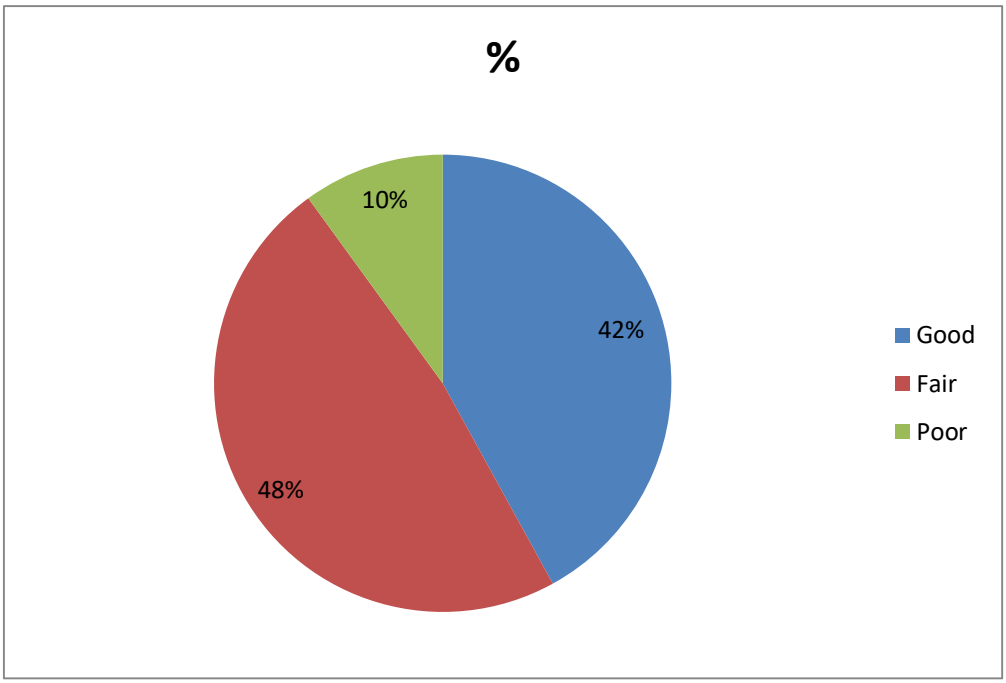

Figure 3: Oral hygiene index in children

Graph III shows that OHI was poor in 10%, fair in 48% and good in 42%.

IV. DISCUSSION

Oral hygiene status determines the awareness about someone's oral health. School going children are more prone to develop dental caries as there in uncontrolled consumption of sugar products and lack of adhering to proper brushing habits.[10] The present study was conducted to assess oral hygiene status and gingival diseases among school going children.

In our study, there were 35 boys and 30 girls of 8 years, 45 boys and 35 girls were of 9 years, 56 boys and 40 girls were of 10 years, 64 boys and 35 girls were of 11 years and 60 boys and 50 girls were of 12 years. Rodan et al[11] examined gingival index (GI) and plaque index (PI) and oral hygiene habits in 6-11 years old school children and found that 29.8 % children had healthy gingiva, 38.5 % had mild gingivitis, 31.4 % had moderate gingivitis, and 0.3 % had severe gingivitis with non- significant difference (P > 0.05). It was found that 36.8 % of the examined students never brushed their teeth. Average gingival index (GI) was 0.77 and average plaque index (PI) was 0.61.

We found that 8 years children had 82% decayed, 7.4% missing and 3.2% filled teeth. 9 years had 84.5% decayed, 6.3% missing and 8.4% filled teeth, 10 years had 86.2% decayed, 3% had missing and 12% had filled teeth, 11 years had 80% decayed, 2.5% had missing and15% had filled teeth and 12 years had 81.5%decayed, 1.4% had missing and 10.4% had filled teeth. Mittal et al[12] conducted a study among 1003 children with 619 in 5 years age group and 384 in 12 years group. The prevalence of dental caries was 68.5% in 5 years old children, dental fluorosis was 22.5% and treatment needs were 63.7%. The prevalence of dental caries was in 12 year age group was 37.5%, dental fluorosis was 76.04%, highest community periodontal index score was 2, seen in 80.2% and overall treatment needs were 44.3%.

We observed that the mean DMFT/ dmft score >3 in children with 8 years was seen in 2%, I 8 years in 3.5%, in 10 years in 4%, in 11 years in 3.2% and in 12 years in 3.8% and score 0 was present in 90%, 91%, 87%, 88% and 86% in years 8, 9, 10, 11 and 12 years old children respectively.

Some studies have revealed increased caries incidence in early age groups. This can be due to the fact that thickness of enamel in the deciduous teeth is 1 mm and in case of permanent teeth is 2.5 mm.[13]Thinner enamel is more prone to be involved as compared to thicker enamel. Lower calcium content of deciduous teeth and structural differences may increase caries susceptibility in deciduous teeth along with lack of preventive measures. Another reason could be that WHO index does not record incipient caries but records only when the caries involves dentin, resulting in slight underestimation of caries in 12 year group.[14]

We found that gingival status was mild in 22%, mild in 45%, moderate in 30% and severe in 3%. RPI was negative in 24%, mild gingivitis in 50%, gingivitis in 26% and gingivitis with pocket destruction was seen in 0%. We found that OHI was poor in 10%, fair in 48% and good in 42%.

The overall oral hygiene status in our study was good. Parents are well aware about their children oral health. The limitation of the present study is small sample size. Moreover, the effect of parental education level and economic status were not discussed.

V. CONCLUSION

Authors found that the caries, gingival and periodontal diseases were quite higher in higher age group as compared to lower. However, overall oral hygiene status found to be good.

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Received: 12 Mar 2020 | Revised: 22 Apr 2020 | Accepted: 09 May 2020