



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research  
Vol. 8, Issue, 4, pp. 16537-16540, April, 2017

**International Journal of  
Recent Scientific  
Research**

DOI: 10.24327/IJRSR

## Research Article

### ORAL HYGIENE STATUS OF SCHOOL ADOLESCENT CHILDREN IN SEMI-URBAN AREAS

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DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0804.0167>

#### ARTICLE INFO

##### Article History:

Received 18<sup>th</sup> January, 2017  
Received in revised form 10<sup>th</sup>  
February, 2017  
Accepted 06<sup>th</sup> March, 2017  
Published online 28<sup>th</sup> April, 2017

##### Key Words:

Simplified Oral Hygiene Index, Plaque,  
Calculus deposits, Oral Hygiene Status

#### ABSTRACT

**Aim:** To assess and examine the oral hygiene status of the school adolescent children in semi-urban areas.

**Materials and Methods:** The examination was done in the semi-urban areas of Chennai involving 100 children. Sterilized mouth mirrors and explorers were used to calculate the Oral Hygiene Index (OHI). They were questioned about their brushing habits and various oral hygiene practices. The scores were accordingly calculated and OHS was determined.

**Background:** Oral diseases have been a persistent public health problem. Good oral health is a state of being free from chronic mouth and facial pain, ulcers, oral and throat cancers, periodontal diseases, tooth decay etc. Poor oral hygiene occurring due to plaque and calculus deposits with increasing age has been reported among adolescents. Oral Hygiene status can be determined by Simplified Oral Hygiene Index method.

**Conclusion:** Oral health awareness is required for getting knowledge, acquiring a good behavior and attitude towards oral health targeted at the adolescents. Hence, everyone should inculcate good brushing habits for a good oral hygiene status.

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#### INTRODUCTION

The practice of keeping the mouth germ free and teeth clean for the prevention of dental problems like dental caries, halitosis, gingivitis and periodontal diseases is referred to as good oral hygiene.<sup>[1]</sup> This will also prevent chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, tooth loss, and other disorders that affect the oral cavity<sup>[2,3]</sup>. Poor nutrition, smoking and alcohol intake influence a person's oral health. It can pose a risk for respiratory, cardiovascular diseases like stroke etc. But severe consequences can be avoided by adopting daily habits of tooth brushing at least twice a day and flossing at least once a day. This was recommended by the American Dental Association (ADA)<sup>[3,4]</sup>

In India, dental caries has been consistently increasing over the last two decades in about 80% of children and 60% of adults<sup>[5]</sup>. When the rural and urban areas are compared, variations exist in oral health practices and the prevalence of oral diseases<sup>[6]</sup>. Rural people are more likely to have untreated dental caries than urban people in the developed countries. They have lower prevalence of dental caries, severe periodontal scores, and poorer oral hygiene than urban dwellers in developing countries.<sup>[7,8]</sup> Surveys indicate that in spite of better tooth brushing behaviors, more children and adolescents

had gingival inflammation, plaque and calculus accumulation when compared to 10-20 years back<sup>[9]</sup>. For the prevention of gum diseases, personal and professional plaque removal and professional calculus removal is the accepted method. In order to reduce plaque, gingival diseases, stannous fluoride can be used.<sup>[10,11]</sup>

Nowadays, people are more conscious about getting various communicable and non-communicable diseases. Due to this the oral diseases has been widely neglected. It's limited to treatment procedures but never as prevention<sup>[12]</sup>. Now almost everybody in the world suffers from dental caries. Because of this negligence, oral diseases are spreading at a rapid rate and is ranked the fourth most expensive diseases to be treated worldwide. The pressure lies on the poor people and socially marginalized who cannot afford the expense of these treatments.<sup>[13]</sup>

This public health issue is to be tackled soon and so oral hygiene should be given importance. There are Dental Health Education (DHE) Program which aims to improve the oral hygiene status of the people by campaigns, talks at the school level, community dental health checkups etc<sup>[14,15]</sup>. National Rural Health Mission's School Health Program conducts oral health awareness, dental screening program for children for early identification and prevention of dental problems<sup>[16]</sup>.

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This study was undertaken to assess the oral hygiene knowledge among the adolescent children, examine oral hygiene status in the semi urban areas and further promote and create awareness for their betterment.

**MATERIALS AND METHODS**

A pilot cross sectional study was performed which involved 100 adolescent children of the age group 13 to 18. These school going children were from the semi-urban areas of Chennai city. The areas were chosen based on the proximity from the dental college. Among the 100 participants, 54 were males and 46 were females.

**Collection of data**

Data was collected through interviewer administered questionnaires and clinical examination. The Oral Hygiene Status was assessed using Oral Hygiene Index (simplified) method. The participants’ age, gender, brushing method, brushing habits etc. was asked to them.

**Assessment of OHS**

Oral Hygiene Index simplified is calculated by the examination of debris and calculus. Sterilized mouth mirrors and explorers were used to determine this. These were seen on the buccal surfaces of specific 6 teeth, namely: 11, 16, 26, 31, 36, and 46. In the absence of a particular tooth, the tooth adjacent to it was examined.

**Examination procedure**

During the examination, certain scores were given for debris and calculus index. The scores for debris index were given as follows:

0 - no debris or stain present, 1- debris covering less than 1/3<sup>rd</sup> of the tooth surface, 2- debris covering between 1/3<sup>rd</sup> and 2/3<sup>rd</sup> of the tooth surfaces and 3- debris covering more than 2/3<sup>rd</sup> of the tooth surfaces. Similarly, the scores for calculus index were allotted as follows:

0 - no calculus present, 1- supragingival calculus present covering less than 1/3<sup>rd</sup> of the tooth surface, 2- supragingival covering between 1/3<sup>rd</sup> and 2/3<sup>rd</sup> of tooth surface or scattered subgingival calculus, 3- supragingival calculus covering more than 2/3<sup>rd</sup> of the tooth surface or a continuous band of subgingival calculus felt when the explorer is run across the tooth surface.

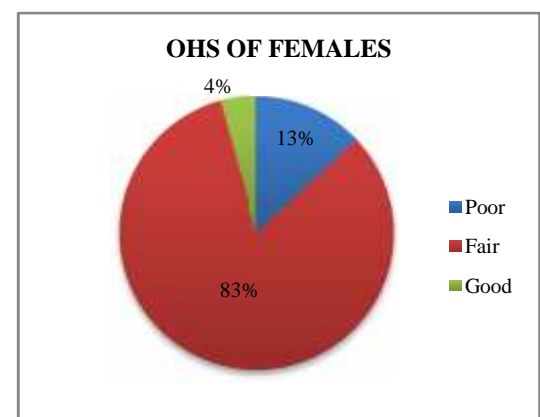
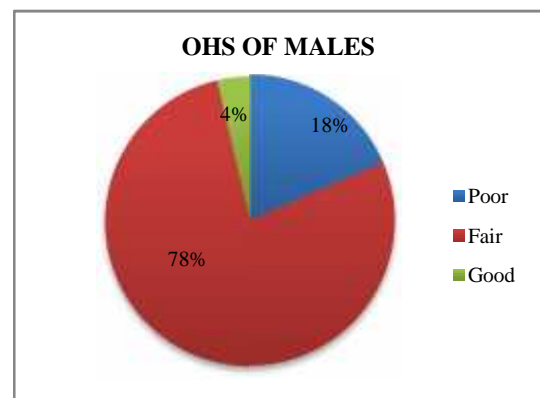
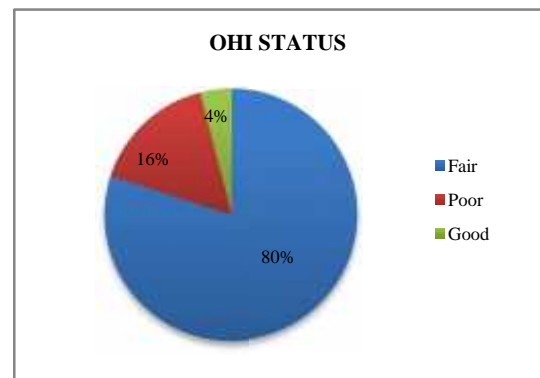
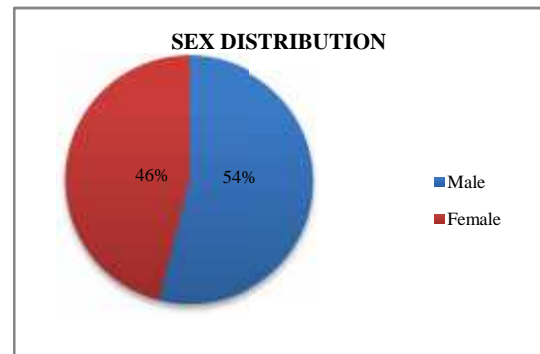
The scores of DI and CI are calculated separately. The individual scores of each tooth are added together and then divided by the total number of teeth examined. This gives the DI and CI scores separately which are added together to give the Oral Hygiene Index (simplified). The interpretation of these scores is given below:

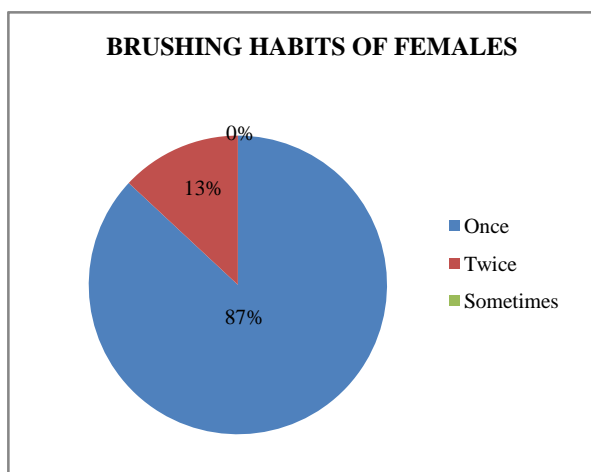
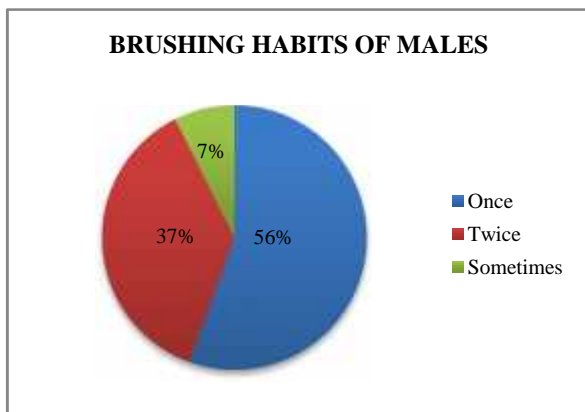
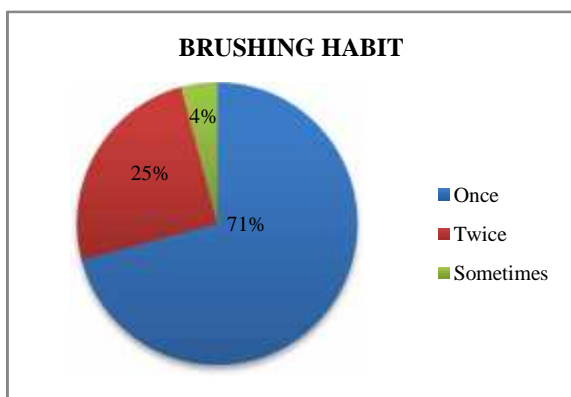
Good: 0-1.2, Fair: 1.3 to 3 and Poor: 3.1 to 6.

**RESULTS**

Among all the 100 participants, 46 were females and 54 males. As the pie charts show below, 80% of all the adolescent children of the age group 13-18 had a fair oral hygiene status. It was also observed that that 18% of the males had poor OHS, whereas in females it was 13%. This is because of their improper brushing habits. Only about 25% had the habit of

brushing twice. When questioned about their dental visits, it was found many neglected the importance of dental checkup. The following are the results showing the oral hygiene status, brushing habits on the basis of age and gender.





## DISCUSSION

Oral health is also equally important in a person's life apart from the general health. In order to improve the oral health and practices among the people, the WHO (World Health Organization) have prioritized the importance of oral health by promoting in the schools. [17]. They have advised to adopt certain preventive strategies due to the high prevalence of calculus and plaque accumulation<sup>[3,17,18]</sup>.

About 80% of the people had a fair enough oral hygiene, and 4% had poor oral hygiene status. The poor oral hygiene status was a relevant explanation for oral health problems like toothache and gingival bleeding. This self reported tooth ache and gingival bleeding was comparable to findings of study among the urban population in Benin City<sup>[19]</sup>. Studies from Kuwait have reported to have 67% fair and 29% poor oral hygiene status and that of India was 68% fair and 2% poor.

<sup>[20,21]</sup> The primary factor for chronic gingivitis, periodontal disease etc. is the formation of dental plaque.<sup>[22]</sup> Sweet and high sugary foods will increase the rate of plaque proliferation and the composition of plaque.<sup>[23]</sup> All these problems arise due to improper brushing and flossing of teeth. Also, in a recent study conducted in Tanzania, Mashoto *et al* reported that 21.9% of school children never brushed their teeth and 32.9% met the standard criteria.<sup>[24]</sup> This is totally comparable to the results we obtain since only 4% of the people were irregular in their brushing habits. But a study in Denmark showed that very good habits have been inculcated since 68% of the people brushed at least twice daily and 11% dental flossing.<sup>[25]</sup>

It was also found that 83% of the females had a fair oral hygiene status which was more than the male participants. This was similar to the studies among the school children in South West Nigeria.<sup>[26,27]</sup> This is due to the fact that better health practices, frequent tooth cleaning and behavioral differences than compared to males is exhibited by the females. The only one reason which attributes to these problems is that people neglecting their much needed dental checkups. It could also be due to poor access to dental treatments, inequitable distribution of the dental workforce and lack of governmental dental services in the surrounding semi-urban areas. This problem generally not faced by the people living in urban areas since they will have an exposure to higher level of education.

## CONCLUSION

From the results and discussion, it was found that 4% was good, 80% fair and 16% poor oral hygiene. It was also seen that females showed better oral hygiene conditions than the males. We can conclude that due to the rising poor oral hygiene in the adolescent age group, there is an immediate need for implementation of various policies and programmes. When the oral health literacy is increased, there would be a change in the preventive dental behavior and attitudes. Therefore, by conducting school dental health programmes, the children can minimize the dangers and consequences of oral diseases in the long run, since they are the adults of tomorrow.

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**How to cite this article:**

Shreya Kothari and Dhanraj M.2017, Oral Hygiene Status of School Adolescent Children in Semi-Urban Areas. *Int J Recent Sci Res*. 8(4), pp. 16537-16540.DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0804.0167>

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