Assessment Of Malocclusion And Orthodontic Treatment Needs Among 13- 15 Years Old School Children Of Andaman And Nicobar Islands

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ABSTRACT: Background: The present study was conducted to assess malocclusion and orthodontic treatment need among 13 to 15 years old school going children of Andaman and Nicobar islands.
Materials & Methods: 126 school children age ranged 13-15 years of both genders was involved. Orthodontic treatment needs was calculated using Dental esthetic index (DAI).

Results: 13 years had 48 males and 52 females, 14 years had 72 males and 140 females and 15 years had 80 males and 112 females. DAI score <25 was seen in 40 males and 72 females, 26-20 in 56 males and 80 females, 31-35 in 44 males and 96 females and >36 in 60 males and 56 females. The difference was non- significant (P> 0.05).

Conclusion: Maximum patients had severe malocclusion with dental esthetic index 31-35.

Key words: Dental esthetic index, Malocclusion, School children

1. INTRODUCTION

In India, children form about 38 to 40% of its 1,090 million total population, and 85% of them have high levels of dental disease. It is reported that about 35% of children suffer from maligned teeth and jaws affecting their proper functioning. Children who suffer from pain of dental origin are more likely to have more restricted activity days including missing school than those who do not. In worldwide Public Health Dental Disease Priorities, malocclusion features the third highest in prevalence.[1]

Malocclusion is defined as an irregularity of the teeth or a mal-relationship of the dental arches beyond the range of what is accepted as normal.[2] Although malocclusion is not life-threatening, it can be considered as a public health problem due to its high prevalence and prevention and treatment possibilities. Malocclusions feature the third highest prevalence among oral pathologies, second only to tooth decay and periodontal disease and therefore rank third among world-wide dental public health priorities.[3]

Class I malocclusion is when mesio- buccal cusp of maxillary first molar falls in mesio-buccal grove of mandibular first molar. Class II malocclusion is when disto- buccal cusp of maxillary first molar falls in mesio- buccal grove of mandibular first molar.[4] Class III malocclusion is when mesio- buccal cusp of maxillary first molar lie between mandibular first and second molar. Among all, Class II malocclusion is commonly seen. Class II malocclusion is further sub divided into div I and div II.[5]

Genetic and environmental factors, or a combination of both is the major cause of malocclusion among patients. Local factors like adverse or deleterious oral habits and alterations in tooth shape, their number and position in the arches play an important role.[6]The present study was conducted to assess malocclusion and orthodontic treatment need among 13 to 15 years old school going children of Andaman and Nicobar islands.

2. MATERIALS & METHODS

The present study was conducted in the department of dentistry. It comprised of 504 school children age ranged 13-15 years of both genders. Ethical approval was obtained from institutional ethical committee. The consent was obtained from parents.

Data such as name, age, gender etc was recorded.A careful oral examination was performed and orthodontic treatment needs was calculated using Dental esthetic index (DAI). Results thus obtained were statistically analyzed. P value less than 0.05 was significant.

Table I Distribution of subjects

Age group (Years)	Male	Female	Total
13	48	52	100
14	72	140	212
15	80	112	192
Total	200	304	504

Table I shows that 13 years had 48 males and 52 females, 14 years had 72 males and 140 females and 15 years had 80 males and 112 females.

Table II Assessment of Dental esthetic index score

DAI	Male	Female	Total	P value
<25	40	72	112	0.09
26-30	56	80	136	

31-35	44	96	140	
>36	60	56	116	
Total	200	304	504	

Table II, graph I shows that DAI score <25 was seen in 40 males and 72 females, 26-20 in 56 males and 80 females, 31-35 in 44 males and 96 females and >36 in 60 males and 56 females. The difference was non- significant (P> 0.05).

Graph I Assessment of Dental esthetic index score
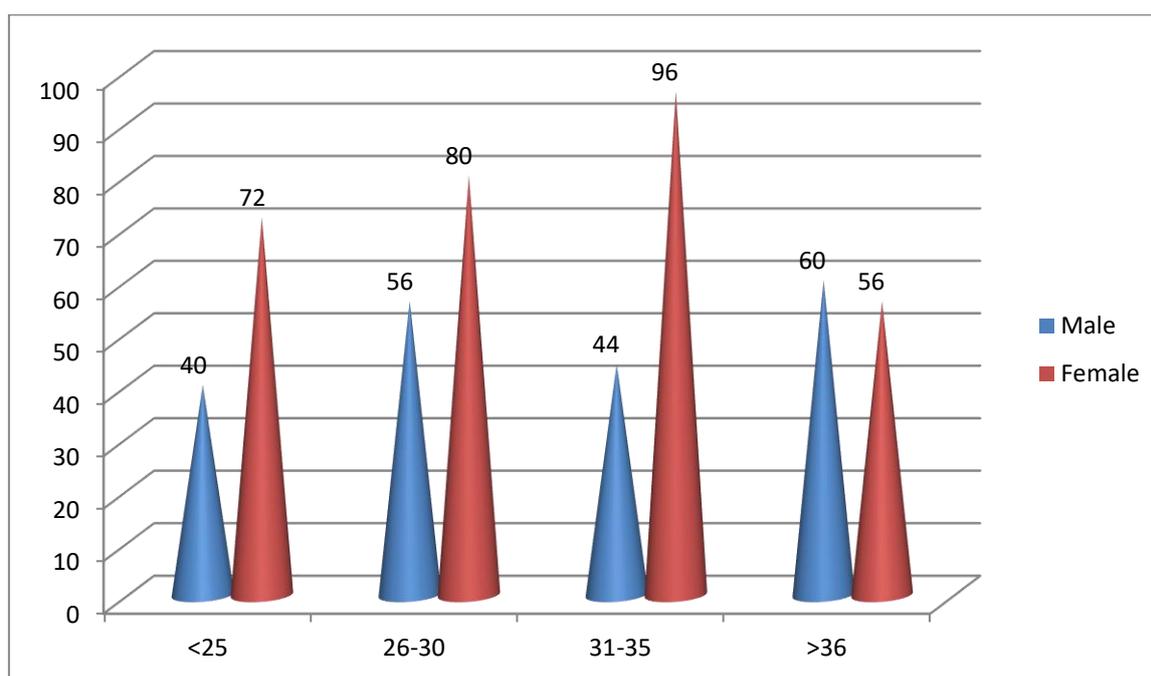
3. DISCUSSION

Malocclusions are the result of orofacial adaptability to various etiological factors, which result in various implications such as psychosocial problems related to impaired dentofacial aesthetics, disturbances of oral function, such as mastication, swallowing and speech and greater susceptibility to trauma and periodontal disease.[7] A number of studies have demonstrated its impact on quality-of-life. Since the public equates good dental appearance with success in many pursuits and societal forces define the norms for acceptable, normal and attractive physical appearance, an individual with malocclusion might develop a feeling of shame about their dental appearance and may feel shy in social situations or lose career opportunities.[8] There are several methods that may be used to evaluate, describe and classify occlusion. Since its development in 1986, the dental aesthetic index (DAI) has proven to be simple and rapidly applied. A previous report has demonstrated the high reliability and validity of this index, which also compares favorably with other indices. It is a cross-cultural index that links clinical and esthetic components mathematically to produce a single score. This index can be used for different communities and populations without requiring any modification.[9]The present study was conducted to assess malocclusion and orthodontic

treatment need among 13 to 15 years old school going children of Andaman and Nicobar islands..

In present study, 13 years had 48 males and 52 females, 14 years had 72 males and 140 females and 15 years had 80 males and 112 females. Tak et al[10] conducted a study among 887 subjects aged 12-15 years. The prevalence of malocclusion and orthodontic treatment needs was assessed using dental aesthetic index. Malocclusion and orthodontic treatment need was reported among 33.3% of the study subjects. A significant age and gender difference depicting preponderance among younger age group and a male proclivity was experiential. A significant improvement in anterior crowding and largest anterior maxillary irregularity with age was documented. Males had a significantly higher prevalence of anterior crowding, midline diastema and largest anterior maxillary irregularity than females.

We found that DAI score <25 was seen in 40 males and 72 females, 26-20 in 56 males and 80 females, 31-35 in 44 males and 96 females and >36 in 60 males and 56 females. Raina et al[11] evaluated cases of malocclusion and orthodontic treatment needs among 13–15 years old subjects. Prevalence of malocclusion found to be 32.5%. The mean DAI score was 24.81 seen in 14-years subjects whereas 13-years subjects had score of 24.42 and 15-years had 23.70, the difference was statistically significant (p< 0.05).

Sanadhya et al[12] assessed the prevalence of malocclusion and orthodontic treatment needs among 12-15-year-old school children among 947 school children offishermen of Kutch coast, Gujarat, India aged 12-15 years. The prevalence of malocclusion and orthodontic treatment needs was assessed using Dental Aesthetic Index. Malocclusion and orthodontic treatment need was reported among 33.4% of the participants. Younger age group and female gender had significantly greater treatment need. Males and older age groups had significantly lesser prevalence of anterior crowding and largest anterior maxillary irregularity.

4. CONCLUSION

Authors found that maximum patients had severe malocclusion with dental esthetic index 31-35.

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