Research Article

STATUS OF MALOCCLUSION AMONG ADULTS IN RURAL AREAS

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A R T I C L E   I N F O

A B S T R A C T

The aim of the study to is to survey the prevalence of malocclusion among adults residing in rural areas. Malocclusion is the imperfect positioning of the teeth when jaws are closed. Problems with teeth alignment is easier and quicker to treat when they are corrected early. Malocclusion can lead to complications such as discomfort , tooth decay and chewing difficulty. Malocclusion is a causative problem in a lot of dental diseases so it's documentation will help create awareness among the public.

INTRODUCTION

The people equate good dental appearance with success in many aspects. Increased concern for dental appearance during adolescents to early adulthood has been observed. (15) The literal meaning of malocclusion is bad bite.(16) A malocclusion is defined as the imperfect positioning of teeth when the jaws are closed. Extra teeth, lost teeth, impacted teeth or abnormally shaped teeth have been cited as the reason for malocclusion. A small underdeveloped jaw, caused by lack of masticatory stress during childhood, can cause tooth overcrowding.Ill-fitting dental fillings, crowns, appliances, retainers, or braces as well as misalignment of jaw fractures after a severe injury are other causes.

Tumors of the mouth and jaw, thumb sucking, tongue thrusting, pacifier use beyond age 3, and prolonged use of a bottle have also been identified as causes.Malocclusion is second most commonest of the dental diseases in children and young adults, next to dental caries. (2)The total population of India (approximately 1022 million) spreads over more than 6.4 lakhs villages, 5661 towns and cities, 5564talukas, 7 union territories and 28 states. India is predominantly rural as over 72% of people continue to live in rural areas. The proportion of urban population to the total has been increasing steadily at a faster pace (14). The main objective of this study was to evaluate the prevalence of malocclusion among adults in rural areas. This study will also help to create awareness among the general public about malocclusion and its side

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effects as well as how malocclusion is generally a causative agent for a lot of dental diseases. Treatment for malocclusion includes tooth extraction, dental braces and in some cases jaw surgery. In a study done by Kaur H, Pavithra U S and Abraham R on the prevalence of malocclusion among adolescents in South Indian population they found that 15.43% of the rural population had class 1 occlusion. They also found that 89.45% had class 1, 8.37% had class 2 and 2.14% had class 3.(1)Most of the studies done on the prevalence of malocclusion have been been conducted on children ranging from the age of 5 to 17.The present study will be significant since it is conducted on adults ranging from 25-76.

MATERIALS AND METHOD

The study was conducted using asample size of a 150 people. The examination was conducted on the basis of angle classification and skeletal classification.

Angle Classification

Edward Angle based his classification on the relative position of the maxillary first molar. According to Angle the mesiobuccal cusp of the upper first molar should align with the buccal groove of the mandibular first molar. The teeth should all fit in a line of occlusion. Any variation from this resulted in malocclusion which can be classified into three types.

Class 1

This is the most common type of malocclusion. The bite is normal, but the upper teeth slightly overlap the lower teeth.

Class 2

This type of malocclusion is called retrognathism or overbite. It occurs when the upper jaw and teeth severely overlap the bottom jaw and teeth.

Class 3

This type of malocclusion is called prognathism or underbite. This occurs when the lower jaw protrudes or juts forward causing the lower jaw and teeth to overlap the upper jaw and teeth.

Skeletal Classification

Skeletal classification takes into account the classification of the facial skeletal pattern and its relationship with the teeth. There are three classes under skeletal classification as well.

Class 1

The bones of the face and the jaw are in harmony with one another and with the rest of the head. The maxilla is slightly ahead of the mandible. The profile is orthognathic.

Class 2

Subnormal distal mandibular development in relation to the maxilla. Maxillary dental arch is narrower than mandibular and there is crowding in the canine region, crossbite and reduced vertical height. Protrusion of the maxillary anterior teeth. The profile is retrognathic.

Class 3

Overgrowth of the mandible and obtuse mandibular angle. The profile is prognathic at the mandible.

RESULTS

The survey was conducted using 150 people from the rural areas. The examination was done using Angle classification and Skeletal classification. The results of the survey are given below:

Angle Classification
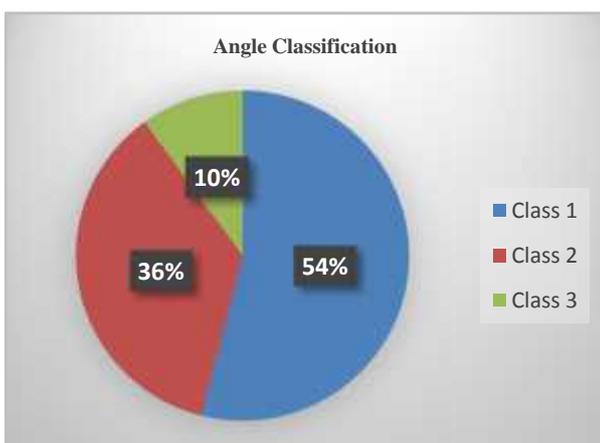
The examination done using Angle classification it was found that 81 people had class 1 malocclusion, 54 people had class 2 malocclusion and 15 people had class 3 malocclusion.

Skeletal Classification
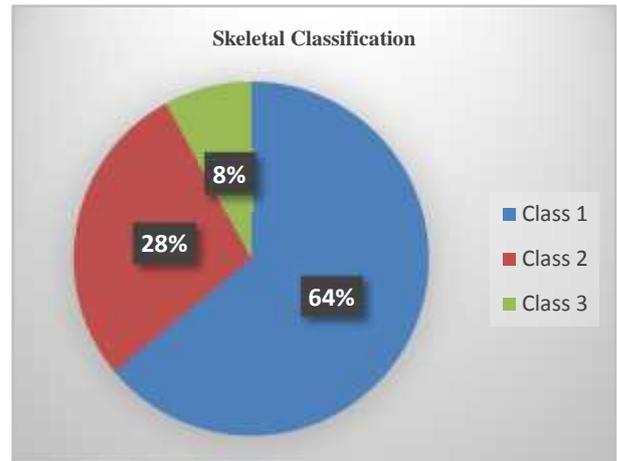
The examination done using Skeletal Classification it is found that 96 people have class 1 malocclusion, 42 people have class 2 malocclusion and 12 people have class 3 malocclusion.

DISCUSSION

This survey was conducted in rural areas. This study provides an estimate of the prevalence of malocclusion in rural areas. Qualitative and quantitative methods available for measuring malocclusion are not truly inclusive of all occlusal criteria,(3)(4) thus, an alternative approach was used to register malocclusion by using occlusal characteristics. Angle's classification that is reliable, repeatable, (5) and idealistically oriented for a broad population study.(1)(6)

Class 1 malocclusion was present in 54% of the population. This was similar to the finding of Usha Mohan Das and Ali Borzabadi that crowding anterior was most common finding in subjects with class I malocclusion. (7)(8). This was in accordance with study conducted by Woon (9) that stated crowded dentition was also a norm for the three races: Chinese, Malay, and Indian. Prevalence of crowding was same as seen in the Hvar island, Croatia; among Lithuanian school children; in Naples; in Rio de Janeiro State, Brazil; and Jordanian subjects.(10) (11)(12)(13)

CONCLUSION

With increasing knowledge about orthodontic treatment, there is also increase in demand for treatment. From the present study it is seen that class 1 malocclusion in both angle classification and skeletal classification was found be have more common occurrence. This study helped to create awareness about malocclusion among the general public. The study also provided vital information about the prevalence of malocclusion in rural areas.

References

1. Kaur H, Pavithra U S, Abraham R. Prevalence of malocclusion among adolescents in South Indianpopulation. *J IntSoc Prevent Communit Dent* 2013;3:97-102
2. Parkash H, Mathur VP. National oral health care program. *Indian Pediatrics*2002;39(11):1001-5.
3. Massler M, Frankel JM. Prevalence of malocclusion in children aged 14 to 18 years. *Am J Orthod* 1951;37:751-68.

4. Kerr J, Buchanan IB, McColl JH. The use of PAR in assessing the effectiveness of removable orthodontic appliances. *Br J Orthod* 1993;20:351-7.

5. Silva RG, Kang DS. Prevalence of malocclusion among Latino adolescents. *Am J Orthod Dentofacial Orthop* 2001;119:313-5.

6. Graber TM. Orthodontic: Principles and Practice. 3 rd ed. Philadephia: W.B. Saunders Co; 1972.

7. Borzabadi-Farahani A, Borzabadi-Farahani A, Eslamipour F. Malocclusion and occlusal traits in an urban Iranian population. An epidemiological study of 11 to 14-year-old children. *Eur J Orthop* 2009;31:477-84.

8. Das UM, Venkatsubramanian, Reddy D. Prevalence of malocclusion among school children in Bangalore, India. *Int J Clin Ped Dent* 2008;1:10-2.

9. Woon KC, Thong YL, Abdul Kadir R. Permanent dentition occlusion in Chinese, Indian and Malay groups in Malaysia. *Aust Orthod J* 1989;11:45-8.

10. Lauc T. Orofacial analysis on the Adriatic islands: An epidemiological study of malocclusions on Hvar Island. *Eur J Orthod* 2003;25:273-8.

11. Perillo L, Masucci C, Ferro F, Apicella D, Baccetti T. Prevalence of orthodontic treatment need in southern Italian schoolchildren. *Eur J Orthop* 2010;32:49-53.

12. Proffit WR, Fields HW. Contemporary Orthodontics. 4 th ed. Chicago: Mosby Year Book; 2007.

13. Al-Ibrahim HM, Telfah HD, Hyasat AN. Frequency of malocclusion in an orthodontically referred Jordanian population. *J R Med Sci* 2010;17:19-23.

14. Bulletin on rural health statistics in India March-2003. Issued by infrastructure division, Department of Family Welfare, Ministry of Health and Family Welfare, Nirman Bhawan, New Delhi.

15. Onyeaso CO, Sanu OO. Perception of personal dental appearance in Nigerian adolescents. *Am J Orthod Dentofac Orthop* 2005;127:700-6.

16. Sureshbabu AM, Chandu GN, Shafiulla MD. Prevalence of malocclusion and orthodontic treatment needs among 13 - 15 year old school going children of Davangere city, Karnataka, India. *J Indian Assoc Public Health Dent* 2005;6:32-5.

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