

ORIGINAL RESEARCH

Assessment of prevalence of malocclusion among school going children of a known population: A cross-sectional study

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ABSTRACT:

Background: Malocclusion compromises the health of oral tissues and also can lead to psychological and social problems. Hence; the present study was undertaken for assessing the prevalence of malocclusion among school going children of a known population. **Materials & methods:** A total of 200 school going children between the age group of 10 to 16 years were analyzed during the study period. Complete demographic and clinical details of all the patients were obtained. Mouth mirror and probe was used for carrying out oral examination. Classification of malocclusion was done according to angle's classification of malocclusion. Age and gender-wise classification of malocclusion was done. **Results:** 38.5 percent of the patients had class I malocclusion while 31 percent and 29.5 percent had class III malocclusion. While assessing the age and gender-wise distribution of patients according to type of malocclusion, non-significant results were obtained. **Conclusion:** Early identification of dental malocclusion is necessary for early treatment therapy to be initiated.

Key words: Malocclusion, School going children.

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INTRODUCTION

Well aligned teeth not only contribute to the health of the oral cavity and stomatognathic system, but also influence the personality of the individual. Malocclusion compromises the health of oral tissues and also can lead to psychological and social problems. A systematic and well-organized dental care program for any target population in a community requires some basic information, such as the prevalence of the condition. In more developed parts of the world, where the specialties of Orthodontics and Pedodontics have been established, adequate basic information is available on the prevalence of this condition.¹⁻³

In developing nations, such information still lack. Studying the prevalence of malocclusion helps to establish the appropriate preventive and orthodontic

treatment programs. The prevalence of malocclusion has been reported for different populations. These reports show great variations, including those conducted in the same population. These variations could be related to the differences in ethnicity, sample size, recording methods, or subjects' age.⁴⁻⁶ The prevalence of malocclusion and orthodontic treatment needs among 12-15 years old school children of Udaipur, India in a study conducted by Tak M et al. The prevalence of malocclusion and orthodontic treatment needs was assessed using dental aesthetic index (World Health Organization, 1997). General information on demographic data was also recorded. 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.⁷ Hence; the present study was undertaken for assessing the prevalence of malocclusion among school going children of a known population.

MATERIALS & METHODS

The present study was conducted with the aim of assessing the prevalence of malocclusion among school going children. A total of 200 school going children between the age group of 10 to 16 years were analyzed during the study period. Complete demographic and clinical details of all the patients were obtained. Mouth mirror and probe was used for carrying out oral examination. Written consent was obtained from guardians/parents of all the subjects before the starting of the study after explaining in detail the entire research protocol. Classification of

malocclusion was done according to angle’s classification of malocclusion. Age and gender-wise classification of malocclusion was done. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. Chi- square test was used for evaluation of level of significance.

RESULTS

In the present study, a total of 200 children were analyzed. Mean age of the patients was found to be 12.8 years. 61.5 percent of the patients belonged to the age group of 10 to 13 years. 38.5 percent of the patients belonged to the age group of 14 to 16 years. 68 percent of the patients were males while the remaining 32 percent of the patients were females. 59.5 percent of the patients were of rural residence while the remaining was of urban residence. 38.5 percent of the patients had class I malocclusion while 31 percent and 29.5 percent had class III malocclusion. While assessing the age and gender-wise distribution of patients according to type of malocclusion, non-significant results were obtained.

Graph 1: Demographic data

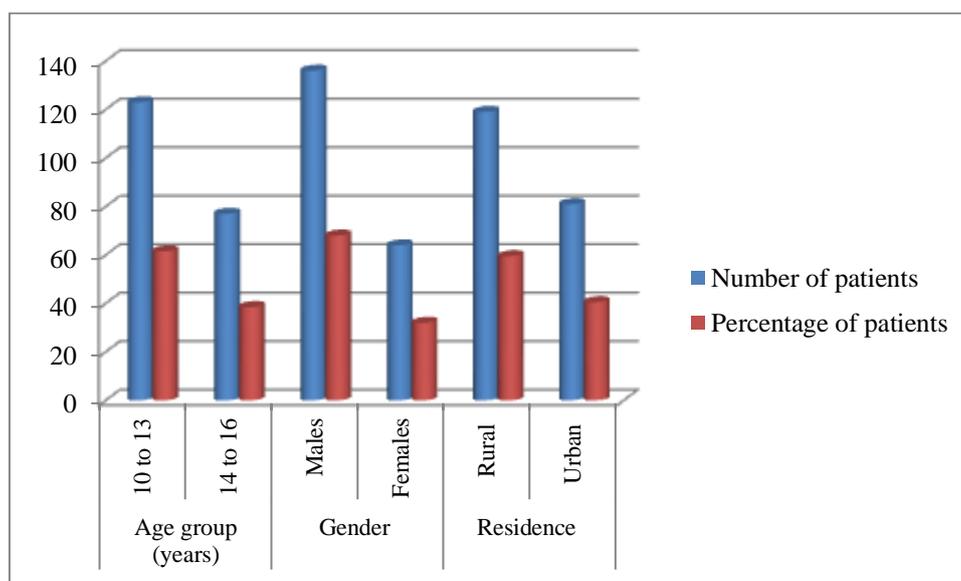


Table 1: Prevalence of malocclusion

Type of malocclusion	Number of patients	Percentage of patients
Class I	79	38.5
Class II	62	31
Class III	59	29.5

Table 2: Age and gender-wise distribution of patients according to type of malocclusion

Parameter	Type of malocclusion			p- value
	Class I	Class II	Class III	
Age group (years)	10 to 13	53	39	0.425
	14 to 16	26	23	
Gender	Males	59	45	0.096
	Females	20	17	

DISCUSSION

The high prevalence of malocclusion has made it a public health problem in the world; it is now considered the third highest oral health priority. "A malocclusion is defined as irregularity of the teeth or a molar relationship between the dental arches beyond the range of what is accepted as normal. Malocclusion is one of the most common dental problems as well as dental caries, periodontal disease, and dental fluorosis. Also, maloccluded dentition can cause disturbances in oral function and psychosocial problems due to impaired dentofacial."⁷⁻⁹

Patients who seek orthodontic treatment are concerned with improving their appearance and social acceptance, often more than they are with improving their oral function or health. Enhancing these aspects of quality of life is an important motive for undergoing orthodontic treatment. Orthodontic anomalies have been associated with psychosocial distress, poor periodontal condition and impaired masticatory function and so should be regarded as a health problem.^{10, 11} Hence; the present study was undertaken for assessing the prevalence of malocclusion among school going children of a known population.

In the present study, a total of 200 children were analyzed. Mean age of the patients was found to be 12.8 years. 61.5 percent of the patients belonged to the age group of 10 to 13 years. 38.5 percent of the patients belonged to the age group of 14 to 16 years. 68 percent of the patients were males while the remaining 32 percent of the patients were females. 59.5 percent of the patients were of rural residence while the remaining was of urban residence. 38.5 percent of the patients had class I malocclusion while 31 percent and 29.5 percent had class III malocclusion. Das UM et al determined the prevalence of malocclusion among school children of Bangalore city, India during their mixed dentition period. The sample consisted of 745 children (388 males and 357 females) in the age group of 8-12 years randomly selected from twelve different schools in Bangalore city. The subjects were randomly selected, and none had received previous orthodontic treatment. Occlusal anteroposterior relationships were assessed based on the Angle classification. Also various malocclusion features associated with class I malocclusion according to Dewey's modification of Angle's classification were assessed. The results showed that about 71% of the subjects had malocclusion. Class I malocclusion constituted the major proportion of malocclusion which was found in 62% of the studied population. No significant difference was found between boys and girls neither in the overall prevalence of malocclusion nor in various forms of malocclusion. Crowded incisors were found to be most common finding in subjects with class I malocclusion. A number of studies have been conducted to determine the prevalence of malocclusion among Indian children and it has been

reported that the results range from a value as low as 19.6% (Miglani DC, Chennai 1961) to as high as 90% (Sidhu SS, Delhi).⁶

In the present study, while assessing the age and gender-wise distribution of patients according to type of malocclusion, non-significant results were obtained. Albakri FM et al determined the prevalence of malocclusion among male school children aged 12-15 years old in Riyadh, Saudi Arabia. Five hundred (500) school children in Riyadh city, Saudi Arabia with an age of 12-15 years participated in this study. The prevalence of malocclusion among the students was determined using a clinical examination form specially prepared for this study. The required information was collected from each subject, and descriptive statistics were performed. The Molar Class I relation involved the highest percentage of the sample (71.2%) while Class II relation involved only 23% which was four times of Class III (5.8%). The maxillary arch crowding was present in 23.2% of the sample which was double than that of spacing. Whereas, the mandibular arch crowding was present in 28% of the sample which was three times more than spacing (8.8%). The open bite was present in 4% of the sample while deep bite was present in 9.6%. The prevalence of malocclusion involved the highest percentage in Class I in comparison with other malocclusions.¹⁰

CONCLUSION

From the above results, the authors concluded that early identification of dental malocclusion is necessary for early treatment therapy to be initiated. However; further studies are recommended.

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