

ORIGINAL RESEARCH

Prevalence Of Malocclusion In 15 Years Old School Going Children In Ahmedabad City

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ABSTRACT

Introduction: The objective of this study was to determine the prevalence of malocclusion among school children of Ahmedabad city, Gujarat State, India after their mixed dentition period at the age of 15 year.

Materials And Methods: The sample consisted of 930 children (486 males and 444 females) in the age 15 year selected from twelve different schools in Ahmedabad city. The subjects were selected from zone wise divided schools and none had received previous orthodontic treatment. Occlusal anteroposterior relationships were assessed based on the Angle classification.

Results: The results showed that about 74% of the subjects had malocclusion.

Conclusion: Class I malocclusion is the most prevalent occlusal pattern. Crowded incisors were found to be most common finding in subjects with class I malocclusion.

Keywords: Prevalence, Malocclusion, 15 year children, India.

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INTRODUCTION

Malocclusions, i.e., dental occlusion problems, are the result of orofacial adaptability to various etiological factors, which result in various implications ranging from aesthetic dissatisfaction to changes in speech, mastication, swallowing, TMJ dysfunction and orofacial pain.¹ Malocclusions feature the third highest disease priorities. According to the World Health

Organization², the main oral diseases should be subjected to periodic epidemiological surveys. Knowledge of a population's epidemiological situation is vital for planning and providing prevention and treatment services.³

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^{4,11} on the prevalence of this condition. In developing nations, such information still lacks.¹² With increasing interest in the early detection and treatment of malocclusion and a corresponding emphasis on preventive procedures, it would be beneficial to collect more information on patients at younger age levels.

Therefore, the aim of this study is to estimate the prevalence of malocclusion in school children of Ahmedabad City, India during their mixed dentition period so as to take preventive measures to recognize and minimize the potential irregularities in the developing dentofacial complex.

MATERIALS AND METHODS

The sample consisted of 930 children (486 males and 444 females) in the age group of 15 year were selected from twelve different schools in Ahmedabad city. The selections of the school were done by dividing the city in four zones. Further, 3 schools were selected from each zone and around 60-80 students from each school who were willing to participate were included in the study.

The samples included in the study were matching with the inclusion and exclusion criteria. Before starting of the study the permission was taken from respected school's Principal and district education officer. Information sheet and informed consent were distributed to each and every subject. Ethical approval was obtained from the ahmedabad dental college and hospital's ethical board

None of the subjects had previous orthodontic treatment, and all had their first permanent molars. All the students were examined by a single operator after obtaining the informed consent from the subjects

and their parents. Approval to conduct the study was also received from the appropriate school authority. The students were examined at their respective schools, using sterile mouth mirror and flash light. All occlusal relationships were evaluated at a centric occlusion position, which was achieved by asking the subject to swallow and then to bite on his or her teeth together. The occlusion was then classified into normal occlusion or malocclusion using the first permanent molars as described by Angle. The cheeks were fully retracted to obtain a direct lateral view of the dentition in occlusion on each side. Children with class I molar relationship, minimal overbite and overjet, proper alignment, and minimal crowding were classified as normal.

In 1899 Edward Angle published his classification of malocclusion. Angle based his classification upon the mesio-distal relations of the mandibular teeth to the maxillary teeth, dental arches & jaws in anteroposterior plane. Angle based his classification on the hypothesis that providing all the teeth were present, the maxillary first permanent molars could be considered as fixed anatomical points or keys to occlusion. The occlusion of the 1st molar & canines on both sides of the arch is recorded whether I, II, III.

STATISTICAL ANALYSIS

The collected data were tabulated and analyzed statistically. Data were coded and entered into Excel sheet by percentile method. To maintain the data quality rechecking and cross checking were done during data entry phase.

RESULTS

Table 1 shows the occlusal classifications of the subjects. Normal occlusions were found in 26% of subjects, and 74% had malocclusions. Figure 1 shows the distribution of various types of class I malocclusion according to Angle's Classification. Out of 930 subjects 13 subjects were having carious/missing teeth so it was not possible to classify their occlusion so we have divided further from 917 subjects. Table 1. Shows the distribution of the subjects according to their Occlusion and the other shows (Table 2) the distribution of the subjects according to their Gender. No statistically significant relationship was found for any gender variation as tested by chi-square test by taking P values of less than 0.05 as statistically significant.

DISCUSSION

The results showed that 74% of the school children

Type Of Occlusion	Number	Percentage
Normal Occlusion	241	27%
Class 1	362	39%
Class 2 Div 1	131	14%
Class 2 Div 2	91	10%
Class 3	92	10%
Total	917	100%

Table-1: Shows the distribution of the subjects according to their Occlusion

Type Of Occlusion	Male	Female
Normal Occlusion	132	109
Class 1	191	171
Class 2 Div 1	71	60
Class 2 Div 2	41	50
Class 3	42	50
Total	477	440

Table-2: Shows the distribution of the subjects according to their Gender

surveyed had malocclusion. This is similar to the findings of Prasad A Rajendra and Savadi S¹³ who conducted an epidemiological study of malocclusion in the age group of 5-15 years in Bangalore city in 1971, reported a high incidence of malocclusion of 85.7% with 51.5% class I, 4% class II.

0.9% class III. Findings of this present study are in disagreement with Nagaraja Rao (1980)¹³ who found only 28.8% prevalence of malocclusion in school children of Udipi, Karnataka.

Class I malocclusion constituted the major proportion of malocclusion which was found in 39% of the studied population which is in agreement with the other studies. No significant difference was found between boys and girls neither in the overall prevalence of malocclusion nor in various forms of malocclusion. The present study evaluated various malocclusion features associated with class I malocclusion according to Dewey's modification of Angle's classification. Crowded incisors was found to be most common finding in subjects with class I malocclusion followed by protruded maxillary incisors, anterior deep overbite, anterior cross bite, posterior cross bite and mesial drift of molars in descending order.

CONCLUSION

The following conclusions are drawn from the present study: a) Prevalence of malocclusion was found to 74% b) Class I malocclusion is the most prevalent occlusal pattern. c) Crowded incisors were the most common feature associated with class I malocclusion.

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