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Prevalence of Malocclusion – A Clinical Study

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ABSTRACT

Background: Malocclusion has a greater impact on individuals and society in terms of discomfort and \quality of life. Objective: The aim of this study was to determine the prevalence of malocclusion among the chosen study population. Design: This was a Descriptive Cross-Sectional Survey. Duration: One year i.e. from February 2017 to February 2018. Setting: Department of dentistry. Participants: 100 Consenting children belonging to the age group 8 - 15 years were included in the study. **Methods**: After obtaining both parents and children consent, all the children underwent detailed history taking and thorough oral clinical examination. Clean sets of mouth mirror and probes were used to examine the participants. Details of student's name, age, sex were recorded. Clinical findings were noted. Data were presented in the form of statistical Tables and charts. SPSS software version 20 was used for statistical analysis. **Results**: The prevalence of malocclusion was more in females with 55% compared to male with 45%. The majority of them had contact point displacement with 23.10% and least was seen in Reverse over jet 1.79%. **Conclusion**: Overall prevalence of malocclusion was found to be high among the selected study population.

Keywords: Incidence, Malocclusion, class I, II, III, periodontic, dental.

INTRODUCTION

Malocclusion is a morphological anomaly that is not a disorder but usually occurs without a pathological condition.[1] Malocclusion is a misrelation or an irregularity in the teeth of the dental arches beyond what is considered normal. While malocclusion is not life-threatening but due to its high prevalence, prevention and treatment possibilities, it can be considered as a public health concern. The third most frequent oral disorders, alongside tooth decay and periodontic disease, are dental malocclusions. They are classified as the third major oral health problems.[2]

Malocclusions are the consequence of orofacial adaptation to a variety of etiological factors such as premature loss of tooth, missing teeth, jaw discrepancies and tooth size are just a few.3 Finger or thumb sucking habit and excessive mouth breathing also lead to improper occlusion relationship. Untreated malocclusions lead to an increase in dental and temporomandibular caries, which leads to various consequences, including psychosocial problems linked to dentofacial esthetics, oral disorder such as chewing, swallowing and speech, or increased susceptibility to trauma and periodontal disease. Good dental looks are equated with success in many ways and societal forces set the rules for an acceptable, normal, and appealing physical look, an individual who has malocclusion may feel ashamed of their denture and may feel shy in social situations or lose his career.

There is growing demand for orthodontic treatment and socio-economic factors, the cultural background of the individual, the need for treatment and anticipated self-image improvement are influencing them. In order to be effective in their treatment, the early recognition of malocclusion is crucial. There are several approaches for the assessment, definition and diagnosis of occlusion. The Dental Aesthetic Index (DAI) has been simplified and quickly implemented since its introduction in 1986.

This research has been taken to determine malocclusion prevalence because of the above described problems and lack of evidence on malocclusion prevalence.

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MATERIALS AND METHODS

Place Of Study: Department of dentistry
Type Of Study: This was a Descriptive Cross-Sectional Survey.
Sample Collection: **Sample size:** 100 Participants.
Sampling Methods: Consecutive Sampling.
Inclusion Criteria:

Consenting children belonging to the age group 8 - 15 years were included in the study.

Exclusion Criteria:
Children with previous history of orthodontic treatment, craniofacial anomalies and fractured incisors were excluded from the study.

Statistical Analysis:
Data were presented in the form of statistical Tables and charts. SPSS software version 20 was used for statistical analysis.

Ethical Approval: Approval was taken from the Institutional Ethics Committee prior to commencement of the study.

RESULTS

The prevalence of malocclusion was more in females with 55% compared to male with 45%.

They were classified in 4 classes with majority 67% in Class I, followed by Class II/1 with 17%, followed by 10% in Class II/2 and the least belonged to Class III with 6%. All classes had females much more prevalent than males except Class III which had an equal percentage between males and females.

The majority of them had contact point displacement with 23.10% and least was seen in Reverse overjet 1.79%.

Contact point displacement was observed in 23.10 % of the patients which is majority. The difference was found to be significant ($p < 0.001$).17.50% had Increased overjet. Crossbite was found in 20.10% and impeded eruption of teeth was found in 2.50%. 3.90% of the patients had hypodontia and open bite was seen in 2.03% of the patients. Increased overbite was seen in 3.49% and presence of supernumerary teeth was seen in 3.08%. The reverse overjet was seen in 1.79%. Submerged deciduous seen in 3.50%.

Table 1: Distribution of Malocclusion according to class and gender

	Total	Class I		Class 11/1		Class 11/2		Class III	
	N	N	%age	N	%age	N	%age	N	%age
Male	45	29	43	8	47	3	30	3	50
Female	55	38	57	9	53	7	70	3	50
Combined	100	67	100	17	100	10	100	6	100

Table 2: Associated Dental health component parameters

Parameters	Percentage
Contact point displacement	23.10
Increased overjet	17.51
Crossbite	20.10
Impeded eruption of teeth	2.50
Hypodontia	3.90
Open bite	2.03
Increased overbite	3.49
Presence of supernumerary teeth	3.08
Reverse overjet	1.79
Submerged deciduous	3.50

DISCUSSION

Malocclusion is 'any deviation from normal occlusion of teeth. The teeth are in abnormal position in relationship to the basal bone of the alveolar process, to the adjacent teeth and/or to the opposing teeth. According to Angle's occlusion is the normal relation of the occlusal inclined planes of the teeth when the jaws are closed. Malocclusion is not just an invariable disease state, but a continuous spectrum of occlusal variation, occurring as a myriad of combinations of permutations of a number of heterogeneous traits or symptoms each with its own wide range of severity and implications in creating a particular manifestation of occlusion.

Malocclusion prevalence was higher in females with 55% compared to males with 45%.They are graded into 4 classes with a majority of 67% in Class I, followed by Class II/1 with 17%, followed by 10% in Class II/2 and Class III with a total of 6%. Except for Class III, all classes had females that were much more prevalent than males, which had an equal percentage between males and females. Most of them had a 23.10 percent, displacement of the contact point and less was seen in the 1.79 percent reverse overjet. There was a significant difference ($p < 0.001$).

The high incidence of malocclusion with Angle's Class I malocclusion as the most predominant among all the types in this study was consistent with the previous studies as reported by Sidhu,[4] Prasad, and Savadi.[5] However, results of few of the studies as done by Rao et al.[6] which reported a low incidence of malocclusion are in disagreement with the results of our study. Our study shows the prevalence of Class III malocclusion to be 6%, which is in accordance with the results reported by the study conducted by Rao et al.[6] However, study conducted by Kharbanda,[7] showed higher prevalence of Class III malocclusion in Delhi, and by Tewari in Punjab.[8] Lower prevalence of Class III malocclusion was reported by Jacob and Mathew in Trivandrum.[9,10]

Malocclusion has an undeniable impact on adolescents, who were repeatedly reminded of their condition through ideal imaging in the media and either concerns about the views of their friends or outright peer pressure. Due to social impact, adolescents with malocclusion developed

avoidance strategies, for instance, by hiding their teeth behind their hands, avoiding smiling, or seeking treatment, in order to improve their situation. The attendant impacts of malocclusion include negative feelings associated with the condition and low self-esteem.

CONCLUSION

Class I malocclusion is the commonest type of malocclusion present. All the occlusal discrepancies were taken into consideration to evaluate the prevalence of the malocclusion. Results showed that malocclusion was highest in females (55%) in comparison with males (45%).All the results showed that malocclusion can occur in any cases irrespective of caries control and the socio-economic status. There is need to make people aware about malocclusion and also about the retained deciduous teeth in oral cavity. The children should be screened at an early stage so that the rate of the malocclusion decreases. It creates an impact on the person's appearance in society at a greater extent.

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