

ORTHODONTIC PATIENTS; PREVALENCE OF MALOCCLUSION IN PAKISTANI

ORIGINAL
PROF-1740

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ABSTRACT... Objectives: To find out the prevalence of malocclusion in patients visiting orthodontic department of Lahore medical and dental college (LMDC). **Study Design:** It is a cross sectional study. **Place of study:** Orthodontic department, Lahore medical and dental College, Lahore. **Material and methods:** Malocclusion was clinically examined by using Angle's classification in 1143 patients (708 girls and 435 boys). **Results:** Class I malocclusion was found in 23.27% of the total sample. Class II malocclusion was found in 53.19% and Class III malocclusion in 8.66% of sample. No statistically significant differences were found in distribution of malocclusion between males and females. **Conclusions:** The study revealed that Class II malocclusion predominated among patients visiting orthodontic department of LMDC.

Key words: Malocclusion, prevalence, Angle's classification.

INTRODUCTION

The evaluation of the prevalence of different types of malocclusions existing within a population is important in order to plan orthodontic measures and determine the resources required for the services. A large number of epidemiological studies have been carried out to determine the prevalence of malocclusion in different racial and ethnic groups and the reported incidences varied in different populations¹⁻³. These variations were recognized due to the differences in ethnic groups and also the possible influences of registration methods of malocclusion trait and sample composition.

The methods of recording occlusal traits can be broadly divided into qualitative and quantitative measurements⁴. Qualitative methods commonly used include British Standard Institute (BSI) of incisor classification and Angles classification for molar relationship^{5,6}. These methods are useful in describing the occlusal traits for means of categorizing various types of dental malocclusions for quick and easy documentation as well as providing a common channel of communication among dental professionals.

The aim of this study was to determine the prevalence of malocclusion in Pakistani orthodontic patients visiting orthodontic department of LMDC.

MATERIALS AND METHODS

This cross-sectional study included orthodontic patients who visited the Department of Orthodontics, LMDC

Lahore from Feb 2009 to June 2010.

A total of 1143 patients consisting of 708 girls and 435 boys with mean age of 17.3 ± 6.41 years were evaluated in this study. The present study was based on the examination of malocclusion on dental casts and clinical examination of patients.

The patients with the history of previous orthodontic treatment, extractions of permanent teeth other than 3rd molars, mixed dentition, congenital malformations like Cleft lip or/and palate and systemic diseases were excluded from the study. Informed consent was obtained from the patient or parents of patients.

Angle classification was used to determine the antero-posterior dental arch relationship. The readings were taken either from the first permanent molar relationship, or in the case of its absence or extraction, the canine relationship was marked. Asymmetry was designated by the subdivision: Class I on one side and Class II on the other side or Class I on one side and Class III the other side. Patients with Class II from one side and Class III from the other side were excluded.

RESULTS

Class I malocclusion was found in 266 patient which represented 23.27% of the total sample. Class II division 1 malocclusion was found in 521 (45.58%) and class II division 2 was found in 87 (7.61%) of sample. Overall class II was diagnosed in 608 patients that represented

53.19% of the total sample. Class III malocclusion consisted of 99 patients which represent 8.66%. Table I

Table-I. Distribution of malocclusion types according to Angle's classification

Malocclusion	Total	%age
Class I	266	23.27%
Class II div 1	521	45.58%
Class II div 2	87	7.61%
Class III	99	8.66%
Class II sub	151	13.21%
Class III sub	19	1.66%
-	1143	99.99%

Class II subdivision and Class III subdivision were found respectively in 151(13.21%) and 19(1.66%) patients. Class II had the highest frequency of 53.19%. No significant difference was found in the distribution of malocclusion in males and females. Table II

Table-II. Distribution of malocclusion types on gender basis

Malocclusion	Male	Female
Class I	99 (22.75%)	167 (23.58%)
Class II div 1	197 (45.28%)	324 (45.76%)
Class II div 2	34 (7.81%)	53 (7.48%)
Class III	40 (9.19%)	59 (8.33%)
Class II sub	57 (13.10%)	94 (13.27%)
Class III sub	8 (1.8%)	11 (1.55%)
	435	708

DISCUSSION

Several studies^{7, 8} have been published describing the prevalence of malocclusion and its different types. The results of studies may show great variability due to the differences in classification of occlusal relationships, the developmental period of the study sample, examiner differences, and differences in sample sizes. The distribution of malocclusion types may give valuable

information for planning orthodontic services.

According to our results, Angle Class II was the most common malocclusion which represents 53.19% of the sample. However Class II div 1 was found in 45.58% and Class II div 2 in 7.61% cases of our sample. The frequency of class I was 23.278%. Class III malocclusion was observed to be 8.662%, Class II subdivision 13.21% and Class III subdivision was 1.66%.

These results do not represent the prevalence of malocclusion in the whole of Pakistani population because this study evaluated only subjects seeking orthodontic treatment in our centre.

The result of this study indicate that majority of the patients were females which is in harmony with other surveys. In general, girls report and seek orthodontic treatment more frequently than boys^{9,10}. This factor was reflected in our sample as well. However the ratio of distribution of malocclusion is almost same in males and females.

The local studies by Afzal et al¹¹. reported Angle's Class I as the most frequent pattern of malocclusion 59.4%. Another study in India¹² on 3164 rural children was found to have malocclusion 29.2%, among them Class I malocclusion was found to be 14.4%, Class II 13.5% and Class III 1.35% of the whole sample. In North American Caucasian children, Massler studied 2758 children and found class I to be 50.07%, class II div-1 was 16.68%, class II div-2 was 2.71 % and class III was 9.43%¹³.

On the contrary Ijaz A1¹⁴ and Hameed et al¹⁵. reported Angle's Class II Div 1 and skeletal Class II as the most common pattern of malocclusion. This variation correlates with the fact that different population groups were chosen for study. In studies by Shehzad et al¹⁶ and Afzal et al¹⁷, data was collected from Dental OPD patients as opposed to orthodontic OPD patients in other studies.

However, international literature¹⁸ reported Class II malocclusion as more frequent than Class I & III malocclusion in Asian men. However Jones¹⁹ investigated malocclusion and facial types in 132 Saudi

Arabian patients being referred for orthodontic treatment and reported that 53.8% had Class I, 28.8% had Class II division 1, 4.5% had Class II division 2, and 12.9% had Class III malocclusions.

Hardly any study has been done in Pakistan on the prevalence of malocclusion. The epidemiological Differences in malocclusion characteristics between Pakistan and other countries would be expected because of differences in racial and ethnic composition. Results cannot be representative of the whole of the Pakistani population and thus expected to varying degree of prevalence of dental malocclusion. Further studies on large sample size is needed for the knowing the exact prevalence of malocclusion.

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STING LIKE A BEE.**

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