

Prevalence of Skeletal and Dental Discrepancy in Western Region, Saudi Arabia

Hashim Ali Algarni¹, Bader Hassosah², Khalid Saleh Alhammad³, Mohammad A Alrowias⁴

^{1,3}Orthodontic Consultant, King Fahad Armed Forced Hospital, Jeddah, Saudi Arabia.

²Head of Orthodontic Division, Orthodontic Consultant, King Fahad Armed Forced Hospital, Jeddah, Saudi Arabia.

⁴Orthodontic Consultant, Al Yamamah Hospital, MOH, Riyadh, Saudi Arabia.

ABSTRACT

Background: After caries and periodontal disease, WHO considers malocclusion to be one of the most serious oral health issues. Its prevalence is highly varied, with estimates ranging from 39% to 93% in children and adolescents. This prevalence range is extremely broad and varied. This inhomogeneity may be attributable to ethnic and age disparities among patients studied for the prevalence of malocclusion. The goal of this study is to assess the skeletal and dental malocclusion in order to better understand how this entity manifests itself.

Methods: This cross-sectional epidemiological study was conducted. Data was gathered from the patient records visited orthodontics clinic in western region. A total of 300 patients file were included. data was obtained from the patient files and review charts of patients. After collection of data, data were coded and entered in the SPSS ver.20 software for analyses.

Results: Total 300 patients were included in this study. The mean (SD) of the age was 36.4(12.9). Out of 300, 60% were

males while 40% were females. We have observed significant gender differences in Occlusal relationship & crowding.

Conclusion: In comparison to Class II and Class III, Class I had the largest rate of malocclusion prevalence among our sample. Crowding is also the most common orthodontic issue.

Key Words: Skeletal, Dental, Discrepancy, Orthodontics.


*Correspondence to:

Dr. Hashim Ali Algarni,
Orthodontic Consultant,
King Fahad Armed Forced Hospital, Jeddah, Saudi Arabia.

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INTRODUCTION

After caries and periodontal disease, WHO considers malocclusion to be one of the most serious oral health issues. Its prevalence is highly varied, with estimates ranging from 39% to 93% in children and adolescents. This prevalence range is extremely broad and varied. This inhomogeneity may be attributable to ethnic and age disparities among patients studied for the prevalence of malocclusion.¹

Malocclusions can occur in three planes of space: sagittal, transverse, and vertical. The analysis of the ANB angle, which reflects the antero-posterior intermaxillary relationship, allows for the identification of three different types of skeletal relationships in the sagittal plane.² Malocclusion has a complicated etiology, with inherited causes, environmental factors, or a combination of both being involved. Genetically determined factors have an impact on growth and can thus contribute to the development of a malocclusion. These variables can interact with aetiological factors like poor habits. When a child has a sucking tendency, he places his finger, usually his thumb, between the dental arches, causing the tongue to migrate lower.³ Malocclusion is a problem that can be upsetting for patients. It could be related to a skeletal

or dental relationship disparity. When treating individuals with facial malformations from different parts of the world, thorough treatment planning is required.⁴⁻⁶ Because of the physiological and social changes generated by this illness, the persistence of malocclusion without treatment can lead to negative consequences in the quality of life of children and their parents. Aesthetic, mastication, and phonation issues may arise; according to one study, 46% of young persons with malocclusion had a negative influence on their lifestyle.^{6,7}

The number of people seeking orthodontic treatment in Saudi Arabia has increased in the previous two decades due to growing awareness of the benefits of orthodontic treatment for self-esteem. Although government-funded orthodontic departments provide some orthodontic treatment, the great majority is provided in the private sector. The mismatch between public demand for orthodontic treatment and governmental institutions' capacity to provide free treatment created a void that private orthodontic clinics filled.¹⁻⁴ The goal of this study is to assess the skeletal and dental malocclusion in order to better understand how this entity manifests itself.

METHODS

This cross-sectional epidemiological study was conducted. Data was gathered from the patient records visited orthodontics clinic in western region. A total of 300 patients file were included. data was obtained from the patient files and review charts of patients. After collection of data, data were coded and entered in the SPSS ver.20 software for analyses descriptive statistics (mean standard deviation, frequencies, and %s were computed), to measure the significance differences and chi-square test was used at 5% level of significance.

Figure 1: Gender Distribution

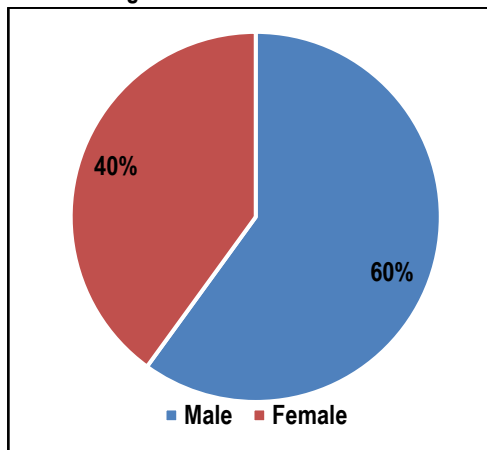


Table 1: Descriptive

Variable	Freq.	%
Occlusal relationship		
Class1	180	60%
Class II	50	17%
Class III	70	23%
Crowding		
Yes	190	63%
No	110	37%
SMO		
Yes	110	37%
No	190	63%
Cross bite		
Anterior	45	15%
Posterior	25	8%
No	230	77%

Table 2: Gender wise comparisons:

Occlusal relationship	Male	Female		p-value
Class1	115	65	180	<0.05
Class II	35	15	50	
Class III	30	40	70	
Crowding				
Yes	135	55	190	<0.05
No	45	65	110	
SMO				
Yes	70	40	110	>0.05
No	110	80	190	
Cross bite				
Anterior	30	15	45	>0.05
Posterior	15	10	25	
No	135	95	230	

RESULTS

Total 300 patients were included in this study. The mean (SD) of the age was 36.4(12.9). Out of 300, 60% were males while 40% were females. (Figure 1) In class 1 we observed 60% of the respondents, 63% had crowding, 37% had SMO, 77% had no cross bite. We have observed significant gender differences in Occlusal relationships & crowding.

DISCUSSION

The goal of this study is to assess the skeletal and dental malocclusion in order to better understand how this entity manifests itself.

This study's findings indicate that a Class I molars association is more common than a Class II and III molars relationship. Similar figures were discovered in various cities in Saudi Arabia and other Middle Eastern countries. Surprisingly, the reported values for malocclusion features differed from those reported in this study and retrospective studies on dental models acquired from academic orthodontic departments and hospital orthodontic departments.

Another study found that 57.47% of 602 dental casts of patients at King Saud University in Riyadh had a Class I molars relationship, whereas 23.33% of 510 dental models at the National Guard Hospital in Riyadh had a Class I molars relationship. However, 84.9% of Al Kharj's public schoolchildren had a Class I molars relationship.^{8,9}

Several research on the prevalence of SMO has been carried out in eastern part of Asia. Class III was discovered to be the most common type. Remarkably, the results are nearly matching the result found in South America, Brazil, where class III SMO is more dominant. In our study, male to female comparisons may not accurately reflect the results of our study because of the conservative cultural setting, but we did find significant disparities. As a result, it is hypothesized that the ratio would shift if larger-scale research were conducted in the region. It has been suggested that SMO manifests differently in different parts of the world, necessitating specific care in handling such irregularities.¹⁻⁵ The prevalence of most of the forms of malocclusion we looked at varied greatly among countries, and occasionally even within the same country. Geographical locations that are separate and far apart This shows that genetics and environmental variables, which are unique to each population, play a role in determining dental disorders. Furthermore, none of the research took into account the various ethnic groups that may live in the same area and have varying influences on malocclusion. Knowing the incidence of malocclusion within an area is critical for estimating the possibility of the problem occurring.¹⁰

CONCLUSION

In comparison to Class II and Class III, Class I had the largest rate of malocclusion prevalence among our sample. Crowding is also the most common orthodontic issue. The information offered in this study can be used to design future studies with larger samples in order to formulate preventive measures and address the orthodontic treatment requirement.

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